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Online Case Resolution Systems: Enhancing Access, Fairness, Accuracy, and Efficiency

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ONLINE CASE RESOLUTION SYSTEMS:
ENHANCING ACCESS, FAIRNESS, ACCURACY,
AND EFFICIENCY

Maximilian A. Bulinski and J.J. Prescott*

Online case resolution (OCR) systems have the potential to dramatically increase access to our justice system. Part I introduces the concept of an OCR system, how it might work in practice, and its likely impact on courts and citizens. Part II argues that OCR systems can lower many of the barriers to going to court by reducing the need for face-to-face resolution of disputes; cutting the amount of time needed for hearings; mitigating litigant confusion and fear; allowing asynchronous scheduling that can accommodate work and child-care schedules; and offering a more reliable and easier-to-use means for litigants to voice their views. These advantages should especially benefit those of lower socioeconomic status, who often suffer disproportionality under the status quo. Part III contends that OCR systems need not compromise a judge’s or a prosecutor’s decision-making process but can actually enhance both. OCR systems can provide more, better, and easier-to-use information, and by removing a litigant’s appearance (race, gender, weight, etc.) from a judge’s consideration, can render outcomes less subject to implicit biases.

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I. INTRODUCTION: OCR SYSTEMS

The phrase “going to court” connotes all that is good and bad about America’s justice system. On the one hand, it evokes the possibility of impartial problem solving by an experienced and knowledgeable decision maker, bound by the rule of law.¹ On the other hand, the phrase suggests a time-consuming adventure into an unfamiliar institution, especially for those without the means to hire an attorney.² The phrase also suggests the possibility of randomness, long lines, and overworked personnel—a scena-

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1. See *The State of State Courts: A 2014 NCSC Public Opinion Survey*, NAT’L CTR. FOR STATE COURTS (Nov. 16, 2014), <http://www.ncsc.org/2014survey> (“Court users express confidence in fairness of proceedings . . .”).

2. See *Analysis of National Survey of Registered Voters*, GBA STRATEGIES (Dec. 4, 2014), <http://www.ncsc.org/~media/Files/PDF/Topics/Public%20Trust%20and%20Confidence/So>

rio that must regularly lead to rushed decisions based on incomplete or irrelevant information.³ And finally, the phrase calls to mind the same image today as it did 100 years ago: an in-person, face-to-face interaction within a brick-and-mortar setting, an anachronism in a society that, on many other fronts, moved on long ago.

To a significant extent, public use of our courts does not need to be this way. In many respects, and in much of the work we expect them to do, courts are not unusual institutions. Important and information-intensive interactions (with far-reaching and often final consequences) are part and parcel of many facets of our world, and a sizable portion of these interchanges now occur in online settings. Starting and managing bank accounts,⁴ initiating stock sales,⁵ filing mortgage applications,⁶ applying for student loans,⁷ and purchasing insurance, both auto and property,⁸ are just a few of the areas in which technology has saved time and expense on all sides of the market.⁹ Technological innovation in each of these domains

SC_2015_Survey%20Analysis.aspx (indicating that most court users see the system as “inefficient, intimidating, and expensive”).

3. Cf. O’Dhanial A. Mullette-Gillman et al., *Cognitive Fatigue Destabilizes Economic Decision Making Preferences and Strategies*, 10 PLOS ONE 1, 14 (2015) (reporting that subjects who were cognitively fatigued exhibited variable risk attitudes and inconsistency in their risk preferences); Lisa Ordóñez & Lehman Benson III, *Decisions Under Time Pressure: How Time Constraint Affects Risky Decision Making*, 71 ORG. BEHAV. & HUM. DECISION PROCESSES 121, 138 (1997) (finding changes in individuals’ decision-making processes for certain tasks after subjecting them to time constraints).

4. See, e.g., Susannah Fox, *51% of U.S. Adults Bank Online*, PEW RES. CTR. (Aug. 7, 2013), <http://www.pewinternet.org/2013/08/07/51-of-u-s-adults-bank-online/> (noting that both online and mobile banking are on the rise).

5. See Nancy C. Libin & James S. Wrona, *The Securities Industry and the Internet: A Suitable Match?*, 2001 COLUM. BUS. L. REV. 601, 633–35 (2001) (acknowledging the huge growth in online trading accounts and debating how best to regulate the use of these accounts to protect the investing public on the grounds that, although “[i]t is fair to say that, at least from a macro-perspective, online trading has been a positive development for individual investors,” “[f]or some investors . . . online trading poses some hazards”).

6. The mortgage application process is being automated. See, e.g., BETTER, <https://better.com/#/learn/about-us> (last visited Feb. 18, 2016) (noting “[i]nitial approval in 3 minutes”); see also JC Reindl, *Quicken Loans Debuts 8-minute Mortgages, Without Humans*, DETROIT FREE PRESS (Nov. 30, 2015, 7:21 AM), <http://www.freep.com/story/money/business/2015/11/28/quicken-loans-debuts-8-minute-mortgages-without-humans/76313736/>.

7. See, e.g., *Frequently Asked Questions*, FEDERAL STUDENT AID, <https://studentloans.gov/myDirectLoan/faqs.action> (last visited Jan. 22, 2016) (instructing, with respect to applying for Direct PLUS loans: “First time borrowers must submit a Master Promissory Note (MPN). Your school also may require you to complete a Direct PLUS Loan Request. You can complete both the MPN and Direct PLUS Loan Request at this site.”).

8. See, e.g., *The Growth of Insurance Services Online*, WWWMETRICS, <http://www-metrics.com/insurance.htm> (last visited Feb. 18, 2016).

9. See Allen N. Berger et al., *The Transformation of the U.S. Banking Industry: What a Long, Strange Trip It’s Been*, 1995 BROOKINGS PAPERS ON ECON. ACTIVITY 55, 64 (1995) (describing banking industry transformations in consumer services, credit evaluation, and back-office operations resulting from technological advances); see also *Press Release*, BD. OF GOVER-

has transformed daily life and has in practice made these (and many new) services accessible to millions.¹⁰

Historically, for instance, banking was a time-intensive, in-person undertaking. As with court proceedings, the consequences for mistakes in banking transactions are serious. Even so, as of 2009, there were almost 600 million users of online banking services, and that number has been growing steadily.¹¹ Online banking is now truly commonplace. Yet, only a decade before, even “[u]sing credit cards to make online purchases ma[de] people nervous.”¹² Similarly, although underwriting loans used to be something of an art form practiced by financial firms that sought to better predict who would repay borrowed money, “it has become increasingly automated in order to promote speed and objectivity.”¹³ Such developments have led to “a tremendous explosion in the number of products that banks can offer and hold,” and have allowed banks to process transactions in previously unheard of volumes and to focus on more difficult transactions than had been possible in an analog world.¹⁴ In the governmental sphere, interactions with important legal implications such as satisfying business regulatory requirements (e.g., licensing, taxation, and disclosures) and the licensing of automobile drivers—to name just two—were historically resolved in person via one-on-one interactions. But these services, too, are now moving online.¹⁵

NORS OF FED. RES. SYS. (Mar. 25, 2014), <http://www.federalreserve.gov/newsevents/press/other/20140325a.htm> (admitting that people were not quick to adopt mobile banking services but noting that activity in this area has also been increasing).

10. See, e.g., JACK W. PLUNKETT, *PLUNKETT’S BANKING, MORTGAGES & CREDIT INDUSTRY ALMANAC* 17 (2008) (reporting that, in 2007, Bank of America had twenty million online customers).

11. Bank Notes, *TowerGroup Predicts Online Banking Will Become Primary Customer Touchpoint Within Next 10 Years*, 42 *WG & L BANK AUDITING & ACCT. REP.* 6, 6 (2009), available at 2009 WL 3380026.

12. Stephen H. Wildstrom, *Do’s And Don’ts Of Cyberbanking*, *BUSINESSWEEK* (Sept. 28, 1997), <http://www.bloomberg.com/bw/stories/1997-09-28/dos-and-donts-of-cyberbanking>.

13. Charu A. Chandrasekhar, *Can New Americans Achieve the American Dream? Promoting Homeownership in Immigrant Communities*, 39 *HARV. C.R.-C.L. L. REV.* 169, 180 (2004); see also Saul Hansell, *Need a Loan? Ask the Computer: ‘Credit Scoring’ Changes Small-Business Lending*, *N.Y. TIMES* (Apr. 18, 1995), <http://www.nytimes.com/1995/04/18/business/company-need-loan-ask-computer-credit-scoring-changes-small-business-lending.html?pagewanted=all>.

14. Berger et al., *supra* note 9, at 64.

15. In Michigan, business owners can register a new business, update information, pay taxes and fees, file reports, and receive correspondence all through online portals. See, e.g., *Michigan Treasury Online*, [MICHIGAN.GOV](https://mto.treasury.michigan.gov/eai/mtologin/authenticate?URL=/), <https://mto.treasury.michigan.gov/eai/mtologin/authenticate?URL=/> (last visited Jan. 24, 2016); *Michigan Unemployment Insurance Agency*, [MICHIGAN.GOV](https://miwam.unemployment.state.mi.us/mip/ereg/_/#1), https://miwam.unemployment.state.mi.us/mip/ereg/_/#1 (last visited Jan. 24, 2016); see also Cal. Dep’t of Motor Vehicles Office of Pub. Affairs, *DMV Adds Appointment Opportunities, Reminds Customers to Go Online to Save Time*, [CALIFORNIA.GOV](https://www.dmv.ca.gov/portal/wcm/connect/dmv_content_en/dmv/pubs/newsrel/newsrel15/2015_14) (Feb. 13, 2015), https://www.dmv.ca.gov/portal/wcm/connect/dmv_content_en/dmv/pubs/newsrel/newsrel15/2015_14 [hereinafter Cal. DMV Online].

Online tools and technology have also been revolutionizing the way private parties resolve their disputes. For example, eBay currently advertises its online approach to dispute resolution as “a new, unbiased method that can help you resolve disputes that may arise involving eBay transactions.”¹⁶ Some scholars have argued that the “cost savings inherent in ADR [Alternative Dispute Resolution], which already are significant, can be increased substantially through the strategic adoption of technology.”¹⁷ Especially relevant is the fact that although private companies and others readily acknowledge the benefits of these systems today, the efficacy of a technological solution of this sort was heavily in doubt a decade ago.¹⁸

The creation of online case resolution (OCR) systems promises to bring these same advantages to the everyday court proceedings that make up the bulk of state and municipal court dockets. By everyday court proceedings, we refer to the resolution of civil infraction citations, outstanding failure-to-pay or failure-to-appear warrants, and even minor misdemeanors. Our courts deal with literally millions of these a year,¹⁹ and yet a large percentage of these cases are cookie-cutter, varying only on a few well-defined dimensions.²⁰ It is not that these cases are unimportant; indeed, the accurate, fair, and efficient resolution of these disputes has significant ramifications for the litigants involved, the courts, law enforcement, and the public at large. Rather, like the many other consequence-laden economic transactions now occurring online, these cases can often—but *not always*—be resolved without face-to-face interaction with a judge, magistrate, prosecutor, city attorney, or other decision maker.

Many of the critical advantages of OCR systems derive from a few simple facts. Bringing two people together, in person, at the same time, with both parties suitably informed about the dispute is costly and difficult. At a minimum, it requires travel, scheduling, and precisely timed informa-

16. *Dispute Resolution Overview*, EBAY, <http://pages.ebay.com/services/buyandsell/disputeres.html> (last visited Jan. 22, 2016).

17. David Allen Larson, “*Brother, Can You Spare A Dime?*” *Technology Can Reduce Dispute Resolution Costs When Times Are Tough and Improve Outcomes*, 11 NEV. L.J. 523, 524 (2011); Amy J. Schmitz, “*Drive-Thru*” *Arbitration in the Digital Age: Empowering Consumers Through Binding ODR*, 62 BAYLOR L. REV. 178, 200 (2010) (“ODR [Online Dispute Resolution] in general has been touted for its convenience, speed, low-cost, and travel and paper savings.”).

18. E.g., Frank G. Evans et al., *Enhancing Worldwide Understanding Through ODR: Designing Effective Protocols for Online Communications*, 38 U. TOL. L. REV. 423, 426–27 (2006) (“Computers constantly ‘go down’ during crucial times, and unsolicited spam e-mail and other security issues continue to drain productivity. Therefore, it is not surprising that many doubt the advantages of relying on this new computerized world.”).

19. ROBERT C. LAFOUNTAIN ET AL., NAT’L CTR. FOR STATE COURTS, *EXAMINING THE WORK OF STATE COURTS: AN ANALYSIS OF 2009 STATE COURT CASELOADS* 3 (2011).

20. See Issa Kohler-Hausmann, *Managerial Justice and Mass Misdemeanors*, 66 STAN. L. REV. 611, 622 (2014) (stating that, although prosecutions of low-level crimes are not necessarily “assembly-line” cases, resolutions are often quick and based on informal rules rather than on the outcomes of in-depth inquiries).

tion support. Add to this situation the facts that these meetings often occur deep in courthouses; that one of the parties (the litigant) may be poorly educated about the law, worried about the worst case scenario, and unable to hire an attorney;²¹ and that the other party (the judge or decision maker) is in much shorter supply and has the power to unilaterally change the script.²² In sum, you have a recipe for disaster. Our courts today cope with these issues, but only barely, and only by imposing large, often-forgotten costs on the public.²³ One is forced to wonder how long a bank would remain in business if making a withdrawal required waiting for four hours to see a teller.

Therefore, the forces pushing in the direction of OCR systems are unlikely to abate. Fortunately, there are many good reasons to look forward to a time when well-tailored versions of these systems will be more common. Of course the public will be able to access the courts more easily, and courts will handle their dockets more efficiently.²⁴ There are also good reasons to believe that decision-making quality and fairness to litigants (both as perceived and as experienced) will actually improve with the spread of these systems, as decision makers become better informed and certain biases (explicit and implicit) become less likely to infect a litigant's interactions with court personnel.

To be clear, courts are not about to disappear into the cloud. In our view, OCR systems are best viewed as tools to supplement traditional courtroom access and are likely to serve the public best when they work in tandem with physical access, giving the public options. Even if this were not true, many important functions of modern courts (mostly those activities in which courts have been engaged for hundreds of years) require face-to-face, one-on-one interaction, at least in the United States. Judges are experts in the law for a reason, and the successful resolution of complicated legal disputes requires extensive study of fact and argument, careful application of law to facts, wide-ranging discretion in at least some cases, and

21. See Deborah L. Rhode, *Access to Justice*, 69 *FORDHAM L. REV.* 1785, 1793 (2001) (noting that "most people are poorly informed about the legal system").

22. See Maurice Rosenberg, *Judicial Discretion of the Trial Court, Viewed from Above*, 22 *SYRACUSE L. REV.* 635, 637 (1971) ("When an adjudicator has [primary discretion], he has decision making discretion, a wide range of choice as to what he decides, free from the constraints which characteristically attach whenever legal rules enter the decision process.").

23. Although we have not located a good estimate of the societal costs that stem from the public and police officers waiting in lines for hours in courthouses, these costs are analogous in many respects to the societal costs of traffic jams. See, e.g., *CTR. FOR ECON. & BUS. RESEARCH, THE FUTURE ECONOMIC AND ENVIRONMENTAL COSTS OF GRIDLOCK IN 2030*, at 5 (July 2014) (predicting that the economic costs of gridlock in Europe and the United States will rise to nearly \$300 billion in 2030). In addition to wasted time, police officers who wait in court are necessarily not out policing during that time.

24. In some respects, the ability to interact with courts online will echo the development of online dispute resolution between consumers and private companies, which has increased efficiency in dispute resolution generally. See Schmitz, *supra* note 17, at 187.

the wisdom to use that discretion well.²⁵ All of that said, much of the activity inside modern courts looks nothing like the paradigmatic murder trial or securities litigation lawsuit.²⁶ An enormous share of court resources is devoted to resolving traffic and other minor civil infractions that resemble administrative tasks more than litigation.²⁷ Certain court proceedings are “particularly conducive to asynchronous communication because [they] mainly involve[] parties’ exchange of information, documents, exhibits, and other evidence.”²⁸ Courts should and—in the short or long run—will be using technology for these types of proceedings. Computers, software, and smartphones are capable of bearing a large part of this load, freeing up judges and lawyers to focus on the tough issues that require truly human experience and insight.²⁹

In this Article, we argue that OCR systems have the capacity to dramatically open and democratize our court system, thus providing greater access to the courts for many who currently have difficulty making the most of them.³⁰ We also explain how removing some categories of adjudication from courtrooms can lead, perhaps counterintuitively, to better quality information transfer (via higher quality information for judges) and therefore more accurate decisions.³¹ These systems also have the potential to eliminate illegitimate considerations like race, gender, and appearance

25. *E.g.*, *Gasperini v. Ctr. for Humanities, Inc.*, 518 U.S. 415, 424–25 (1996) (discussing trial and appellate judges’ discretion to alter excessive jury verdicts); *McKeiver v. Pennsylvania*, 403 U.S. 528, 539, 547 (1971) (weighing the special expertise of juvenile court judges in the decision to deny juveniles a jury trial).

26. *LAFOUNTAIN ET AL.*, *supra* note 19, at 4.

27. There were approximately two-and-a-half times as many traffic cases as criminal cases nationwide in 2009. *Id.* at 20, 32. Contract-based litigation comprises about 70 percent of civil general jurisdiction caseloads nationwide, and a quarter of these cases are small claims cases. *Id.* at 11.

28. Schmitz, *supra* note 17, at 201.

29. *But see* CARL BENEDIKT FREY & MICHAEL A. OSBORNE, *THE FUTURE OF EMPLOYMENT: HOW SUSCEPTIBLE ARE JOBS TO COMPUTERISATION* 1, 62, 64 (Sept. 17, 2013), http://www.oxfordmartin.ox.ac.uk/downloads/academic/The_Future_of_Employment.pdf (developing a method for determining how “susceptible jobs are to computerisation” and concluding that “Judges, Magistrate Judges, and Magistrates” have a 40-percent probability of being “computerisable”—271st out of 702 occupations ranked, with those least likely to be computerized ranked lower—and that “Administrative Law Judges, Adjudicators, and Hearing Officers” rank 353rd with a probability of computerization of approximately 64 percent).

30. These systems will also make courts more efficient, as we note above, but we will not spend time in this Article detailing the specific advantages of these systems to courts. We do note, however, that adoption requires, realistically, that these systems save court personnel (or at least judges or court administrators) time, cost, or frustration in carrying out their duties.

31. Often, better information leads to the ability to make more informed decisions but, past a certain point, more information “can overwhelm cognitive abilities and result in inferior, less well understood choices.” Ellen Peters et al., *More is Not Always Better: Intuitions About Effective Public Policy Can Lead to Unintended Consequences*, 7 *SOC. ISSUES & POL’Y REV.* 114, 117 (2013).

from the adjudication process, directing the judge's attention only to the facts relevant to the case.³²

This Article proceeds as follows. We conclude Part I by introducing the basics of OCR systems. In Part II, we examine the sometimes overwhelming barriers to court access facing many of our citizens and examine which of these barriers OCR systems might be able to mitigate or overcome. In Part III, we describe how OCR systems, when appropriately designed and deployed, will improve judicial decision making while simultaneously decreasing the amount of time judges and other court personnel spend on routine minor cases. One implication of these efficiencies is that judges will be able to devote more time and attention to those cases that require human expertise and wisdom.³³ In addition to increasing judicial accuracy and consistency through better distilled and organized information, OCR systems can further improve judicial decision making by eliminating distorting, irrelevant information from the process—e.g., by removing from view factors such as race, gender, weight, age, or socioeconomic status when they are irrelevant to the legal issues before the court.

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An OCR system could take many forms, but one of the simplest and most straightforward versions would have the following features: First, an individual who may have an outstanding legal issue would be able to log onto a court's online portal using personally identifying information.³⁴

32. See Anthony G. Greenwald & Linda Hamilton Krieger, *Implicit Bias: Scientific Foundations*, 94 CAL. L. REV. 945, 966–67 (2006) (asserting that implicit biases must be regarded as probable causes of racially disparate outcomes, such as those outcomes that occur in criminal court systems, when racially neutral causes and explicit biases can be rejected as causes).

33. This is just one possibility. As courts become more efficient and access costs decline, litigants may increase their use of courts, resulting in little reduction—or perhaps even an increase—in caseloads. The latter possibility might occur if the private cost of using the courts approached zero, but the social cost was strictly positive (e.g., labor costs, infrastructure, etc.). Given the present state of affairs, greater access leading to more cases would almost surely be a good thing, but it is hard to know, given that the public must share the cost of court access and that new uses are probably less socially valuable on average. See J.J. Prescott, *The Challenges of Calculating the Benefits of Providing Access to Legal Services*, 37 FORDHAM URB. L.J. 303, 310–19 (2010).

34. The promulgation of OCR systems might raise concerns about the personal privacy of litigants or, alternatively, the possibility of identity theft or manipulation. In particular, one might worry about someone impersonating a litigant through OCR systems. For some legal disputes, this concern seems overblown—resolving a traffic ticket is relatively low-stakes, for instance—and verifying someone's identity using information like name, social security number, address, driver's license number, and so on, might be more than enough. For those who question this conclusion, it is worth noting that much of what goes on in courthouses (including the records the courthouse maintains) is public information and that impersonating a litigant in person (or through a lawyer) in a courthouse might therefore be just as easy, if not easier, than impersonating someone through well-designed software. If someone at a courthouse asks a litigant for identification, a picture ID is likely to suffice. An OCR system could easily require a picture of an ID and verify the information it contains in real time. Nevertheless, as technology

Second, the litigant would be able to view cases in which he is a party or citations issued to or charges brought against him.³⁵ Third, the user would be able to answer (or supply documents that answer) specific, legally relevant inquiries and to explain his side of the story to the judge, magistrate, prosecutor, or other decision maker who is tasked with managing or resolving the case. Fourth, in this hypothetical system, once the litigant submits this information, a judge or other decision maker would evaluate the information available, which would include both what the litigant supplies and information that comes from other sources,³⁶ to determine whether the individual's dispute or issue can be resolved over the Internet—or, alternatively, whether the judge needs to acquire more information in a formal, in-person setting. Though there are many variations and supplementary features that one might add to an OCR system, several of which we will describe below, this simple hypothetical process will serve as a baseline for the purposes of this Article.

An OCR system would be auxiliary to the existing legal system—it certainly need not replace it, even for a particular category of disputes.³⁷ There are several reasons for this parallel approach. The first is that many kinds of court proceedings regularly require extensive back and forth between the parties and the judge, and almost every kind of case at least occasionally requires such interchange. The second is that gathering information in real time is much more important for certain categories of transactions,³⁸ as can be the need to assess credibility face-to-

advances, one would expect much more sophisticated ways of verifying identity to proliferate, including smartphone-based biometric fingerprint scanners and even biometric iris or retina scanners, which are no longer science fiction. See Samuel Gibbs, *Iris-scanning Smartphone Puts Paid to Passwords in Blink of an Eye*, THE GUARDIAN (May 14, 2015), <http://www.theguardian.com/technology/2015/may/14/iris-scanning-smartphone-fujitsu-ntt-docomo-passwords>.

35. They may perhaps be able to file cases or initiate inquiries, as well.

36. Useful pieces of information are likely to include the individual's history of similar infractions and a brief explanation from the involved parties. For example, in a case involving a failure-to-appear warrant, a judge would probably find it helpful to know whether the person in question had failed to appear in an earlier case and his or her reason for failing to appear in this instance. While these pieces of information are currently gathered in person, this information can easily be aggregated by an online system. Past infraction information can be displayed automatically, and individual litigants can be prompted by the system to provide an explanation when they make a request for relief, like rescheduling the date in return for the court rescinding the warrant.

37. In our view, whether it is a good idea to resolve certain cases *solely* using OCR systems—i.e., replacing courts—is a very different question than whether adding OCR systems to courts as they currently operate—i.e., enhancing courts—is likely to be socially valuable, although we understand the potential worry that appending OCR systems to courts might produce a slippery slope that ultimately yields less sanguine consequences. See generally Eugene Volokh, *The Mechanisms of the Slippery Slope*, 116 HARV. L. REV. 1026 (2003).

38. Although an online chat feature would not be technically difficult to implement, a large benefit of OCR systems is that they allow transactions to occur while the negotiating parties are desynchronized in time. In this discussion, we assume limited back and forth between the parties.

face.³⁹ In addition, but related, to these rationales are legal or constitutional requirements, such as due process.⁴⁰ While courts may ultimately determine that due process can be satisfied in a minor dispute (e.g., a traffic ticket) by way of the citation itself and an online opportunity to be heard, no court, to our knowledge, has yet to speak to this issue.

Ultimately, an OCR system is not meant to replace the existing system, but rather to modernize it in at least two ways: (1) by expanding access options to include those made available by Internet technology and (2) by augmenting the abilities of judges and increasing the bandwidth of court personnel, thereby enabling them to handle cases more quickly and accurately.

An important component of a sophisticated OCR system will be an advanced decision rules management interface for courts.⁴¹ In essence, this interface would allow judges, prosecutors, and other decision makers to categorize and sort cases based on key facts about the law, the case, or the litigant. Using this aspect of the system, individual judges and prosecutors will be able to create, map, and view the heuristics they use to make decisions about cases—first, in deciding *whether* the case or case type can be resolved online, and second, in deciding *how* to resolve the case online. Actively or passively, implicitly or explicitly, decision makers will identify the necessary and/or sufficient facts for particular outcomes, as well as the weight to be given to particular kinds of evidence, and so on. They will make this determination either *ex ante* or by how they decide cases in practice.⁴² This interface has the potential to improve the OCR system over time.⁴³ Because OCR systems can record and analyze what judges do

39. Stephen Porter & Leanne ten Brinke, *Dangerous Decisions: A Theoretical Framework for Understanding How Judges Assess Credibility in the Courtroom*, 14 LEGAL & CRIMINOL. PSYCH. 119, 120–21 (2009).

40. *Compare Fuentes v. Shevin*, 407 U.S. 67, 83 (1972) (finding replevin statutes that do not provide for notice or hearing prior to seizing property unconstitutional), *with Saukstelis v. City of Chicago*, 932 F.2d 1171, 1173 (7th Cir. 1991) (holding that the use of a Denver boot on a car whose driver had failed to pay a certain number of parking tickets did not violate procedural notice and hearing requirements because “[t]he parking ticket itself is a notice, . . . offering the opportunity for a hearing”).

41. Consider IBM’s Operational Decision Manager. As described by IBM, it is “a full-featured, easy-to-use platform for capturing, automating and governing frequent, repeatable business decisions. [It] manag[es] and execut[es] business rules . . . to help you make decisions faster, improve responsiveness, minimize risks and seize opportunities . . . It also enables you to implement, test and deploy decision changes and understand how decisions are made and apply them consistently across processes and applications.” *IBM Operational Decision Manager*, IBM, <http://www.ibm.com/software/products/en/odm> (last visited Jan. 23, 2016).

42. Presumably, OCR systems will only make sense for those categories of cases in which this process does not always become exceedingly complex.

43. By laying out a basic structure for what judges need to determine to resolve a generic dispute, the interface can also facilitate the addition of case types to the system at later points, allowing courts to handle a larger and larger percentage of cases with the software as their comfort levels increase.

when faced with particular cases, the systems can offer evolving guidance in the ongoing decision-rule creation and amendment process, thus fine-tuning the interactions between litigants and the court.

For judges and prosecutors accustomed to doing their jobs in the traditional way, converting the often non-formalized rules of thumb into a computer-augmented process may appear daunting at first blush.⁴⁴ However, by structuring system setup and management around an intuitive, step-by-step process, judges and prosecutors can be shown that the technology functions as an extension of their preferences, defining and helping them to apply their decisions both efficiently and even-handedly.⁴⁵ As it has in other sectors, technological innovation can create a cost-effective, easy-to-use process, which not only allows but also enhances existing procedures and facilitates the development of new kinds of interactions. In essence, for the minor cases that monopolize much of court life, technology can provide a method for people to go to court without actually setting foot in a courthouse.

II. OCR SYSTEMS AND BARRIERS TO ACCESS

“Heralding a worldwide movement to make justice more accessible” in the late 1970s,⁴⁶ Cappelletti and Garth’s seminal international study identified three waves of reform aimed at making the formal right to justice effective.⁴⁷ The first wave focused on providing legal aid and advice to the poor;⁴⁸ the second phase promoted aggregation, such as class actions, to promote the resolution of a large number of claims through a single action;⁴⁹ and the third wave concentrated on other innovations such as alternative dispute resolution and small claims courts.⁵⁰ In the subsequent thirty-five years, scholars and policymakers have continued to devote considerable attention to the question of how to make the law work effectively for people.⁵¹

44. See, e.g., Jacob A. Sommer, *Business Litigation and Cyberspace: Will Cyber Courts Prove an Effective Tool for Luring High-Tech Business into Forum States*, 56 VAND. L. REV. 561, 572 (2003) (“Initially, courts were slow to introduce technology into the courtroom.”); see also Alleyne v. United States, 133 S. Ct. 2151, 2163 (2013) (noting that “broad sentencing discretion, informed by judicial factfinding, does not violate the Sixth Amendment”); *Bordenkicher v. Hayes*, 434 U.S. 357, 364 (1978) (“[T]he decision whether or not to prosecute, and what charge to file or bring before a grand jury, generally rests entirely in [the prosecutor’s] discretion.”).

45. See notes 4–11 above for how this process has worked in other settings.

46. Austin Sarat, *Book Review*, 94 HARV. L. REV. 1911, 1913 (1981) (reviewing MAURO CAPPELLETTI ET AL., *ACCESS TO JUSTICE* (1978–1979)).

47. Mauro Cappelletti & Bryant Garth, *Access to Justice: The Newest Wave in the Worldwide Movement to Make Rights Effective*, 27 BUFF. L. REV. 181, 196–97 (1978).

48. *Id.* at 197–209.

49. *Id.* at 209–22.

50. *Id.* at 222–27.

51. E.g., DEBORAH L. RHODE, *ACCESS TO JUSTICE* (2004); Deborah L. Rhode, *Access to Justice: An Agenda for Legal Education and Research*, 62 J. LEGAL EDUC. 531 (2013); see also WORLD

The notion of “access to justice” is therefore capacious, and the phrase conveys a wide spectrum of ideas: increasing legal aid to the poor, making legislation and legal documents easier to understand, creating methods and forums for alternative dispute resolution, and changing the legal machinery in an effort to establish processes that are accessible and fair.⁵² OCR systems have the potential to improve access to justice on most of these dimensions, either directly or by making our courts more efficient and accurate. By facilitating a citizen’s ability to interact and communicate with courts and officials, well-designed OCR systems will keep litigants better informed about their rights, remedies, and the ongoing status of their disputes. By reducing the need for travel and limiting unnecessary delay, and by mitigating the confusion and fear that accompany visits to court, an OCR system can make using our courts less grueling to citizens on multiple dimensions.

In this Article, for purposes of economy, we concentrate on the value of OCR systems for reducing access barriers for the most common cases: civil infractions, minor warrants, and low-level misdemeanors—i.e., minor disputes with the government. Many of the basic barriers to using courts (such as the difficulty of physically getting to court) are the same regardless of the type and sometimes even the complexity of the case. Nevertheless, we focus our discussion on access in these minor cases because they are so much more common,⁵³ affect so many more people,⁵⁴ and, candidly, are much more amenable to the use of OCR systems in the near term. It is also the case that the average individual’s experiences with court personnel in resolving these minor disputes serve as the foundation for how citizens view our judiciary (and even government)—in particular, how accurate, fair, and legitimate courts are as institutions.⁵⁵ After all, go-

JUSTICE PROJECT, RULE OF LAW INDEX 164 (2015) (reporting that the World Justice Project Rule of Law Index employs a definition that includes “whether people are aware of available remedies, can access and afford legal advice and representation, and can access the court system without incurring unreasonable fees, encountering unreasonable procedural hurdles, or experiencing physical or linguistic barriers”).

52. E.g., Frank S. Bloch, *Access to Justice and the Global Clinical Movement*, 28 WASH. U. J.L. & POL’Y 111, 119 (2008); Kevin Burke & Steve Leben, *The Evolution of the Trial Judge from Counting Case Dispositions to a Commitment to Fairness*, 18 WIDENER L.J. 397, 397–98 (asserting that, “[f]or the courts, the times demand the creation of a new paradigm to assess performance more accurately” and calling for a “shift [of] the focus to fairness”).

53. See LAFOUNTAIN ET AL., *supra* note 19, at 3 (reporting fifty-eight million traffic cases in 2009).

54. Recently, the Sacramento Bee reported that “[w]ell over 4 million Californians have had their licenses revoked because they failed to pay traffic fines or appear in court, DMV records show.” Christopher Cadelago, *Small Traffic Fines Can Lead to Big Problems for Some Californians*, SACRAMENTO BEE (Apr. 15, 2015, 5:21 PM), <http://www.sacbee.com/news/local/transportation/article18635310.html>.

55. Cf. David B. Rottman & Randall M. Hansen, *How Recent Court Users View the State Courts: Perceptions of Whites, African-Americans, and Latinos*, at 2, <http://www.flcourts.org/core/>

ing to court to address a minor infraction is how most of the population interacts with our justice system.

Still, effectively and efficiently resolving minor infractions and civil warrants may seem an unambitious goal from an access perspective. In truth, however, these cases have real consequences for the lives of individuals and their families.⁵⁶ Furthermore, in the aggregate, minor disputes are enormously important to society and especially to particular communities. In theory, these cases should be easy to resolve, and on the books, they are substantively simple (at least relatively).⁵⁷ If it is not resolved in a timely fashion, however, even a traffic ticket for a relatively small amount can quickly escalate into something serious,⁵⁸ such as an arrest warrant or a license suspension.⁵⁹

Michigan has roughly a million unresolved arrest warrants, most stemming from minor citations and unpaid fines.⁶⁰ New York City alone has 1.2 million pending arrest warrants,⁶¹ and it has recently been the sub-

fileparse.php/243/urlt/perceptions2.pdf (last visited Jan. 23, 2016) (summarizing individuals' views of courts, generally after their interactions with them).

56. The relative costs of an adverse finding for even minor offenses can include the exclusion of individuals from "important benefits such as housing, student loans, child custody, immigration, and employment." See Kohler-Hausmann, *supra* note 20, at 621.

57. Indeed, the basic substance and real-world procedural considerations of these sorts of disputes are hardly touched on in law school education. See Anita Bernstein, *Pitfalls Ahead: A Manifesto for the Training of Lawyers*, 94 CORNELL L. REV. 479, 483 (2009) (noting that law school curricula, featuring "fixtures like contracts, torts, property, criminal law, and constitutional law," are often structured on the bases of tradition and inertia).

58. See, e.g., Jeffrey Toobin, *Rights and Wrongs: A Judge Takes on Stop-and-Frisk*, THE NEW YORKER (May 27, 2013), <http://www.newyorker.com/magazine/2013/05/27/rights-and-wrongs-2> (reporting the story of Charles Bradley, who was mistakenly arrested for trespassing—a misdemeanor—while trying to visit his fiancée and who faced a "domino effect" thereafter: "The arrest would be reported to a New York State licensing agency for security guards, and that might mean the loss of Bradley's job. 'I need a license to be a security guard, and I would have lost it if they pressed charges,' he said. 'If I lose my license, I lose my income. I could have been put into homelessness for all this.'"); U.S. DEP'T OF JUSTICE CIVIL RIGHTS DIV., INVESTIGATION OF THE FERGUSON POLICE DEPARTMENT 42 (Mar. 4, 2015) ("Our investigation has found overwhelming evidence of minor municipal code violations resulting in multiple arrests, jail time, and payments that exceed the cost of the original ticket many times over.").

59. See, e.g., MICH. COMP. LAWS § 257.321a(1) (stating that a person "who fails to comply with an order or judgment of the court, including, but not limited to, paying all fines, costs, fees, and assessments, is guilty of a misdemeanor punishable by imprisonment for not more than 93 days"); MICH. COMP. LAWS § 257.321a(2) ("If the person fails to appear or fails to comply with the order or judgment within the 14-day period, the court shall, within 14 days, inform the secretary of state, who shall immediately suspend the license of the person.").

60. Brad Heath, *For a Million Fugitives, Freedom Starts at County Line*, USA TODAY, <http://www.usatoday.com/story/news/nation/2014/08/06/fugitives-las-vegas-wont-pick-up/13607595/> (last visited Jan. 23, 2016).

61. Allegra Kirkland, *How New York Ended Up with 1.2 Million Open Arrest Warrants*, TALKING POINTS MEMO (Aug. 4, 2015), <http://talkingpointsmemo.com/theslice/new-york-broken-windows-arrest-warrants-begin-again>.

ject of critical media attention for the varied ways in which these seemingly minor court proceedings can completely derail an individual's life.⁶² Apparently, a full 40 percent of the individuals ticketed in 2014 failed to appear for court and now have outstanding arrest warrants.⁶³ These warrants interfere with searching for jobs, applying for public housing, and achieving naturalization.⁶⁴ Stories like these leave us wondering—if things can get that far out of hand, why would anyone not resolve their minor issues in court before they escalate?

The perhaps surprising answer is that *actually* resolving many of these minor legal issues, as we describe below, is difficult and costly for a large swath of the populace. This swath is likely to be disproportionately comprised of poor, disabled, and minority individuals. Access barriers are even higher when considered in light of the supposed unimportance of minor citations. Luckily, computers and technology accomplish repeated tasks very well,⁶⁵ so using OCR systems to address case types that occur frequently and are relatively homogenous amounts to picking the proverbial low-hanging fruit, especially if these categories of disputes involve disproportionately high access costs for vulnerable groups.⁶⁶

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Most cases in the United States dwell in local courts and involve relatively minor issues such as traffic tickets and other minor infractions. In many courts, these high volume but relatively minor cases are numerically important and take up significantly more than half of the court's time.⁶⁷ We leave to one side the important question of whether this allocation of judicial resources makes sense from a social welfare perspective.⁶⁸ Instead, we describe the access barriers facing litigants who are obligated to resolve

62. *Id.*

63. *Id.*

64. *Id.*

65. Kenneth R. Corsello, Note, *The Computer Software Rental Amendments Act of 1990: Another Bend in the First Sale Doctrine*, 41 CATH. U. L. REV. 177, 200 (1991) (explaining that the real value of using a computer program is achieved by the repeated use of the program); JOHN MACCORMICK, NINE ALGORITHMS THAT CHANGED THE FUTURE: THE INGENIOUS IDEAS THAT DRIVE TODAY'S COMPUTERS 2–4 (2013) (describing how an algorithm functions as “a precise, mechanical recipe” for computer activity).

66. Focusing on these issues does not mean that OCR systems are irrelevant to other types of cases or court interactions. However, at least initially, applying OCR technology to resolve relatively straightforward cases that require little judicial expertise is more likely to please all parties. Indeed, the potential effect of technology on reducing social costs stemming from routine minor cases is quite simply immense.

67. LAFOUNTAIN ET AL., *supra* note 19, at 31 (asserting that non-criminal traffic/motor vehicle infractions “represent by far the largest segment of state court caseloads, often accounting for 50 percent or more of a state's incoming cases”).

68. *Cf.* David Rosenberg & John Scanlon, *Class Actions: To Be or Not to (B)(3)?*, 24 MISS. C. L. REV. 153, 168 (2005) (“To the extent that judges rationally allocate judicial resources, class action scale efficiencies are essential in motivating courts to optimize adjudicative investment,

these disputes in order to comply with the law, to make their voices heard, or because they fear more serious consequences should they fail to respond to the government's allegations, and how OCR systems can reduce these barriers.

Thankfully, most people interact with courts infrequently. Unfortunately, this often means that a litigant who wants to or who *must* deal with a court is at a loss about how to proceed.⁶⁹ As two judges put it, “[m]any people have little contact with the court system in their daily life, so it is understandable that they feel overwhelmed and lost when they are confronted with an unfamiliar legal system.”⁷⁰ This dearth of legal awareness, paired with the exotic legal jargon and terms of art in court proceedings, makes a court an unnerving and often frightening institution.⁷¹ Lack of access to information has been recognized as a barrier to justice for low-income individuals since at least 1974.⁷² From sociological studies of law-in-action, we know that knowledge of court proceedings is one of the primary advantages that repeat players have over individuals who only attend a single proceeding.⁷³

A litigant can of course “resolve” most minor issues simply by “admitting” to the government’s charge or claim and paying some fine. But a large and important share of people would prefer to use their right to be heard either to contest the government’s claim, to seek mitigation of the claim, or to negotiate precisely *how* to concede the claim when they cannot afford the fine.⁷⁴ When citizens are unwilling or unable to accede to the government’s legal assertions in minor cases, they typically must resolve these disputes in court and without the help of an intermediary, like an attorney, either because the stakes are too small or because the litigant lacks the resources necessary to secure legal representation or even basic legal advice.⁷⁵ Either way, the practical consequence for the citizen is that

which maximizes the prospect of achieving the social objectives of deterrence and insurance from mass production liability.”).

69. *But see* Burke & Leben, *supra* note 52, at 407 (suggesting that attorneys view court procedures as fair because they are familiar with typical procedures and “thus do not feel as lost during the process”).

70. Kevin Burke & Steve Leben, *Procedural Fairness: A Key Ingredient in Public Satisfaction*, 44 CT. REV. 4, 4 (2007).

71. *See* Bloch, *supra* note 52, at 119 (discussing lack of legal literacy as a barrier to justice).

72. *See* Marc Galanter, *Why the ‘Haves’ Come Out Ahead: Speculations on the Limits of Legal Change*, 9 LAW & SOC’Y REV. 95, 140 (1974).

73. *See id.* at 97–103.

74. *Cf.* Columbia Law School Human Rights Clinic, *Access to Justice: Ensuring Meaningful Access to Counsel in Civil Cases*, 64 SYRACUSE L. REV. 409, 418 (2014) (noting that many people living in poverty lack access to legal services and are therefore unable to contest tenancy disputes, immigration proceedings, custody decisions, etc.).

75. In fact, the litigation costs of small claims “routinely exceed the case value” of a favorable disposition. PAULA HANNAFORD-AGOR ET AL., NAT’L CTR. FOR STATE COURTS,

access to justice can only be achieved by walking into a courthouse to resolve the case *in person* and usually alone.

Self-representation is the norm for these minor cases. State courts in which the highest volume of cases occur, including traffic, housing, and small claims, are dominated by self-represented litigants.⁷⁶ Obtaining legal representation makes the process easier, but attorneys are expensive and finding and hiring one is an obstacle to using the court system in its own right.⁷⁷ Without lawyers to help litigants through the process, the barriers to justice in these matters are higher than they otherwise might be and include the time and cognitive effort it requires to understand—at the most basic level—the process and the options available.⁷⁸ These cognitive hurdles may be beyond what some litigants are able to surmount on their own and may ultimately culminate in their choosing (perhaps subconsciously) to ignore their legal issues, a problematic and ultimately costly outcome for all parties.

Walking into a courthouse to resolve an outstanding legal issue can also be emotionally daunting—in particular, litigants may (rationally or irrationally) fear being arrested,⁷⁹ especially if they are uncertain of the legal nature of the claim against them. Most notably, in the context of an outstanding warrant or a misdemeanor, litigants will not just be confused about the process but will also be frightened by what might happen should they appear in person to answer a charge or court order without the means

THE LANDSCAPE OF CIVIL LITIGATION IN STATE COURTS iv (2015), <http://www.ncsc.org/~media/Files/PDF/Research/CivilJusticeReport-2015.ashx>.

76. E.g., John M. Greacen, *Self-Represented Litigants and Court Legal Services Responses to Their Needs: What We Know*, CAL. COURTS, at 6–7 <http://www.courts.ca.gov/partners/documents/SRLwhatweknow.pdf> (last visited Jan. 23, 2016) (reporting on an internal analysis of four California counties, where 91.1 percent of small claims and 81.1 percent of landlord/tenant proceedings went forward with at least one *pro se* litigant); see also LAWYERS' COMM. FOR BETTER HOUS., NO TIME FOR JUSTICE: A STUDY OF CHICAGO EVICTION COURT 4 (2003) (finding that in 96 percent of observed eviction cases at least one party was unrepresented).

77. Legal aid lawyers or other free legal services (e.g., law school clinics) are available only for some very small share of such cases. See Lua Kamál Yuille, *No One's Perfect (Not Even Close): Reevaluating Access to Justice in the United States and Western Europe*, 42 COLUM. J. TRANSNAT'L L. 863, 864–65 (2004) (“In the United States, low funding creates a succession of virtually insurmountable problems” to providing access to legal services.). In practice, hiring a lawyer is the only realistic option, and many lawyers are discouraged from participating in indigent defense programs by low pay rates. *Id.* at 869.

78. See Erica L. Fox, *Alone in the Hallway: Challenges to Effective Self-Representation in Negotiation*, 1 HARV. NEGOT. L. REV. 85, 93 (1996) (stating that, in the context of housing court, “many tenants do not perceive that they play an active role in the [adjudicative] process”).

79. One OCR system user with outstanding warrants for unpaid tickets sent a message to the judge saying: “I am scared to come to court because I don’t want to be arrested. My children need me. The vehicle I was [driving] was my ex husband’s and I got pulled over using it to transport 2 of my children to [the doctor] for appts because I did not and don’t own a vehicle. I will do anything not to go to jail. Please. I have 2 warrants . . . I believe.” Matterhorn Case Resolution User Comment No. 5626784e032fb12c903df432 (Oct. 20, 2015) (on file with authors).

to comply.⁸⁰ In point of fact, lawyers often provide security to litigants—at least to those who can afford or otherwise access legal representation—by appearing in court in their stead in such situations.

To be clear, we do not mean to suggest that if arrest is appropriate under the circumstances, “protecting” litigants from such arrest is socially valuable. But in many circumstances, people unreasonably fear arrest given the facts, and yet, at present, courts have no way to credibly allay this fear. Courts today rely on in-person communication; they are unable to communicate efficiently with citizens at a distance, but doing so could assure citizens that they need not fear arrest.⁸¹ The alarm associated with the physical exposure that necessarily accompanies face-to-face resolution methods keeps litigants away from courthouses and thus constitutes an important barrier to access.

Therefore, the vast sea of minor infractions and warrants in this country is precisely the set of almost routine proceedings in which OCR systems can produce a profound and positive impact across the judicial system by replicating—in part—some of the advantages of legal representation.

OCR systems can, by using the court’s records and the citizen’s answers to questions, carefully guide the citizen through the appropriate resolution process. One can imagine both bare-bones systems as well as systems that seek to explain what is happening in a comprehensible, complete, and consistent way, with the explanation precisely tailored to the citizen’s legal matter. An OCR system can provide written definitions and instructions without significantly slowing the process. By contrast, traditional in-person interactions with courts will always be more unstructured. The information a litigant receives in court will be less complete (as the provision of that information will take court personnel time) and less tailored to the citizen’s situation, absent a dramatic increase in court person-

80. Daniel J. Flannery & Jeff M. Kretschmar, *Fugitive Safe Surrender: Program Description, Initial Findings, and Policy Implications*, 11 CRIMINOLOGY & PUB. POL’Y 437, 449 (2012) (reporting that many individuals who participated in the Fugitive Safe Surrender Program had previously failed to surrender out of fear with 36.5 percent being “afraid of what would happen,” 37.2 percent indicating that they “didn’t want to go to jail,” and 28 percent stating that they “didn’t want to get arrested”).

81. We acknowledge that citizens can call courts using a telephone, but this is unstructured communication, and cases cannot be resolved over the phone in any jurisdiction of which we are aware. Consequently, the ability to call a court may be less useful than one might at first assume. First, many people simply would not think to call a court to ask for advice. Second, if a citizen does opt to call a court, the court official answering the call (assuming a person does answer the call) may not know how to answer the question, and the citizen may have trouble articulating the precise problem. Third, the court official would likely refuse to “commit” the court to any particular answer (e.g., that appearing in person will not result in arrest) that would lower the barrier to accessing the court in person. Almost certainly, the official will simply encourage the individual to come down in person to the court to resolve the issue.

nel and, therefore, court budgets.⁸² Importantly, we do not imagine these systems as providing legal advice as a lawyer might; rather, the software would empower the court—i.e., the judge—to communicate more clearly with citizens about the law, their rights, and the consequences of exercising certain options.

By allowing citizens to resolve (or at least attempt to resolve) their outstanding disputes at a distance and without fear of arrest, OCR systems can provide the security to unrepresented citizens that the brick-and-mortar courthouse model inherently lacks. Examples abound of people ignoring their legal issues simply because they are scared of what might happen if they step into a courthouse.⁸³ They may want to resolve their warrants or pay the fines they owe, but they may also be worried that they do not fully understand the situation or might not have sufficient resources to cover any fines or fees.⁸⁴ In reality, self-surrender scenarios seldom result in arrest.⁸⁵ But when you care for children or have a zero-tolerance job, any step that may lead to even a short stint of incarceration is not an option. Courts can use OCR systems in a manner that offers certainty, when it is suitable. If an arrest is appropriate, of course, an OCR system can be directed to inform the citizen that a remote resolution is not possible.

Better guidance and less fear are just two of the ways that technology can reduce access barriers and improve on the antiquated, one-on-one interaction that has historically dominated and largely defined America's judicial system. We elaborate on more such barriers below. But we ought to stress at this point that bringing courts into the Information Age in the way we describe above is not pie-in-the-sky. Indeed, a few courts have already begun to move in the direction of implementing early versions of these OCR systems.⁸⁶ Courts taking this step seek primarily to speed case

82. For some proceedings, courts and legal aid agencies have adopted self-help procedures. While these are extremely valuable and used by a large number of people, they are not personalized and “serve only a fraction of self-represented litigants in their jurisdiction.” Greacen, *supra* note 76, at 2.

83. See D. James Greiner et al., *Self-Help, Reimagined* 11 n.34 (Soc. Sci. Research Network, Working Paper No. 2633032, 2016), available at <http://ssrn.com/abstract=2633032> (stating that “[m]ore than one subject we interviewed thought that upon receiving the summons, she would be incarcerated”).

84. See Rick Brown, *Special Report: Mounting Fines for Minor Infractions Hit Low-Income Drivers Hardest*, MILWAUKEE NEIGHBORHOOD NEWS SERVICE (Dec. 2, 2013), <http://milwaukeekeenns.org/2013/12/02/special-report-mounting-fines-for-minor-infractions-hit-low-income-drivers-hardest/>.

85. A study sponsored by the National Center for State Courts explained that “[i]t is rare for a court to make concerted enforcement efforts” on failure-to-pay warrants, although some of the courts in question took limited enforcement actions under some circumstances. JESSICA L. CORTES, NAT'L CTR. FOR STATE COURTS, INST. FOR COURT MGMT., *COMPARATIVE ANALYSIS OF ARREST WARRANT ISSUANCE AND ENFORCEMENT* 41-42 (2014), <http://ncsc.contentdm.oclc.org/cdm/ref/collection/criminal/id/242>.

86. Several district courts in Michigan use the OCR systems developed by Court Innovations. See *Matterhorn*, COURT INNOVATIONS INC., www.getmatterhorn.com (last visited Jan. 24,

processing, to cap costs, and to reduce courthouse congestion, but many of them also recognize the largely untapped potential of these systems to improve access and service.⁸⁷

We have touched on confusion and fear, but perhaps the most quintessential barriers to accessing our justice system are simply physical impediments. The distance to a courthouse, for instance, may pose a significant challenge to some citizens. Individuals who do not own cars or whose licenses have been suspended may have difficulty getting to a courthouse, particularly in rural areas or areas lacking in public transportation options. Nationally, only 84.6 percent of the driving-age population has a driver's license, and many who do have licenses might lack access to a car.⁸⁸ Cars also do not run on water; when the law requires that a citizen appear in person to access justice, it effectively taxes citizens for using the courts.⁸⁹ As in other areas of life, those with limited incomes are disproportionately burdened by physical distance.

Physical barriers come in other forms as well. The Supreme Court has addressed the issue of courthouse accessibility under the Americans with Disabilities Act, stating that “physical barriers in government buildings, including courthouses and in the courtrooms themselves, have had the effect of denying disabled people the opportunity to access vital services and to exercise fundamental rights guaranteed by the Due Process Clause.”⁹⁰ However, impediments based on disabilities do not begin at the courthouse door. An OCR system reduces the need for individuals with disabilities to navigate *to* the courthouse—an undertaking that is often onerous.⁹¹ Complicating this matter further is the fact that proceedings often

2016). Los Angeles courts have developed an in-house system to deal with traffic tickets online. See *Online Services*, SUPERIOR CT. CAL., L.A. CITY CT., <http://www.lacourt.org/online/traffic> (last visited Jan. 24, 2016).

87. See, e.g., *Matterhorn*, *supra* note 86 (providing examples, such as Judge Dawn A. Klida of Michigan's 74th District Court, who stated that “Matterhorn's online platform has improved what was an inefficient process that was leading to a backlog of cases in the courtroom and a general sense of dissatisfaction with the courts in the community”).

88. *Licensed Drivers By Sex And Ratio To Population—2013*, FED. HIGHWAY ADMIN. (Jan. 2015), <https://www.fhwa.dot.gov/policyinformation/statistics/2013/dl1c.cfm>. Many people who do not own cars live in cities with public transit, however, so care is required in interpreting this statistic.

89. With respect to minor disputes with the government, citizens are not even really “voluntarily” availing themselves of the courts, which would make taxing the use of the courts in this way more understandable. We do need to worry about frivolous objections to minor claims and citations, but unless we assume that an issued citation is always justified, at least some share of citizens will be forced to choose between accepting an inaccurate or unfair allegation and being penalized simply for attempting to defend oneself against it *pro se*.

90. *Tennessee v. Lane*, 541 U.S. 509, 515 (2004) (quoting *Lane v. Tennessee*, 315 F.3d 680, 692 (6th Cir. 2003)).

91. Washington State has recognized that individuals with disabilities are significantly more likely to experience legal problems than the general population but “have great difficulty achieving access to facilities and services in Washington courts.” WASH. STATE ACCESS TO JUS-

occur in the jurisdiction of the violation, not necessarily where the potential litigant lives.⁹² One early OCR system user explained his difficulty to the court as follows:

Your honor, I have recently started a new job and I need to resolve this issue. I don't own . . . a car, I haven't driven a car since this incident and I have no transportation [to court forty-five miles away], in addition as I stated before I recently started a new job and I cant afford to take a whole day off. Is there anyway I can . . . just pay the fines through the court system here. Thank you for reviewing my request.⁹³

Another early OCR system user explained that she was “seven months pregnant and high risk and [she didn't] have transportation and [couldn't] walk far to catch the bus.”⁹⁴

By creating and implementing OCR systems, courts can make the physical locations of the parties irrelevant, at least for certain categories of minor cases. Courts have already acknowledged the benefits of video conferencing for remote testimony and prisoner hearings.⁹⁵ Video conferencing eliminates the barrier of distance, but it does little to alleviate other barriers, such as the need to be present at a precise time for a hearing.⁹⁶

TICE Bd. IMPEDIMENTS COMM., ENSURING EQUAL ACCESS FOR PEOPLE WITH DISABILITIES: A GUIDE FOR WASHINGTON COURTS 1 (2006).

92. *E.g.*, 28 U.S.C. § 1391 (2012) (providing that a litigant may bring a civil action in the judicial district in which the defendant resides or in which “a substantial part of the events or omissions giving rise to the claim occurred”); MICH. COMP. LAWS § 600.1629 (2015) (requiring that an action be filed and tried in “[t]he county in which the original injury occurred” if either the defendant or plaintiff have minimum contacts there).

93. Matterhorn Case Resolution User Comment No. 55fce8b6032fb155bc 5652ae (Apr. 5, 2015) (on file with authors).

94. Matterhorn Case Resolution User Comment No. 55ef127d032fb10731 310293 (Sept. 8, 2015) (on file with authors).

95. *See* 20 C.F.R. §§ 404, 416 (2016) (permitting hearings by video teleconference for Social Security benefit disputes). As far back as 2001, tests on video conferencing were conducted on administrative law judge proceedings in the Social Security context. Federal Old-Age, Survivors and Disability Insurance and Supplemental Security Income for the Aged, Blind, and Disabled; Scheduling Video Teleconference Hearings Before Administrative Law Judges, 66 Fed. Reg. 1059, 1060 (proposed Jan. 5, 2001) (codified at 20 C.F.R. §§ 404, 416) [hereinafter Video Conferencing].

96. Video conferencing also requires greater Internet bandwidth, imposes environmental constraints, and depends on particular kinds of equipment. *See* Robert Bennett Lubic, *Reducing Costs and Inconveniences in International Commercial Arbitration and Other Forms of Alternative Resolution Through Online Dispute Resolution*, 15 AM. REV. INT'L ARB. 507, 511 (2004). Furthermore, video conferencing may hinder a citizen's ability to effectively express himself, and will presumably make debiasing more difficult. *Cf.* Rebecca Brennan, *Mismatch.com: Online Dispute Resolution and Divorce*, 13 CARDOZO J. CONFLICT RESOL. 197, 219 (2011) (suggesting that, as compared to video conferencing, asynchronous communication allows individuals to express themselves more rationally and effectively).

For cases that can be resolved with limited back and forth between the individual and the court, an online platform can significantly ease dispute resolution. Teleconferencing still presents logistical difficulties for the courts.⁹⁷ However, if an individual can log onto an online portal and provide relevant information, the judge can examine that information at any time and send a response with an offer for resolution. OCR systems thus have the potential not only to minimize the distance barrier but also to eliminate the issue of finding a common time to hold a hearing by allowing for asynchronous negotiation.⁹⁸

Closely associated with physical and coordination barriers are what might be called temporal barriers to accessing courts. Many courthouses are open 9 a.m. to 5 p.m., Monday through Friday. It should go without saying that many members of the labor force work during these hours, which means that, for many hourly wage workers, the opportunity costs of going to court can be significant. If an individual earns \$20 an hour, and he has to take time off to travel to court, wait in line, see a judge (and hopefully resolve the case), and return to work, accessing justice may cost the average citizen more than \$100, especially if lines are long or a return trip is required. For hourly workers, lost hours mean lost wages, as they often do not receive paid time off.⁹⁹ If the average traffic ticket is around \$150,¹⁰⁰ it becomes clear how, for relatively minor cases, the need to miss work for half a day can make contesting a citation almost prohibitively expensive.

Even a relatively minor loss of earnings (or just paying the ticket) can substantially affect the lifestyle of low-income citizens.¹⁰¹ Such setbacks disproportionately affect certain ethnic minorities, as these groups have comparatively low median household incomes (non-Hispanic White households had a median income of \$60,256 in 2014, while Black households had a median income of \$35,398 and Hispanic households had a

97. See 20 C.F.R. §§ 404, 416. Test data showed that processing time for video conference hearings was substantially shorter than it was for in-person, remote-location hearings during the same time period. See Video Conferencing, *supra* note 95, at 1060.

98. Asynchronous negotiation has its drawbacks as well as its advantages. See DAVID S. HAMES, NEGOTIATION: CLOSING DEALS, SETTLING DISPUTES, AND MAKING TEAM DECISIONS 183–89 (2012).

99. Susan J. Lambert, *Making a Difference for Hourly Employees*, in WORK-LIFE POLICIES 169, 169 (Ann C. Crouter & Alan Booth eds., 2009) (“[M]any employers condition eligibility for employee benefits, such as health insurance and paid time off, on seniority, job status, and the number of hours worked—all qualities on which hourly workers come up short.”).

100. Eric Peters, *The Hidden Costs of a Simple Speeding Ticket*, NAT’L MOTORISTS ASS’N BLOG (Sept. 29, 2008), <https://www.motorists.org/blog/the-hidden-costs-of-a-simple-speeding-ticket/>.

101. See MICHAEL S. BARR, NO SLACK: THE FINANCIAL LIVES OF LOW-INCOME AMERICANS 5 (2012) (noting that low-income families are more vulnerable to changes in jobs because these families have no financial “slack” to absorb the costs associated with such unplanned occurrences).

median income of \$42,491),¹⁰² and thus their members suffer correspondingly more on average from lost wages. Racial disparities in poverty rates are even starker. Black families were more than twice as likely to be below the poverty line between 2007 and 2011 than were White families,¹⁰³ and for the poor, the loss of a few hundred dollars can be catastrophic. Opting to miss work to deal with a legal issue can also sap an employer's goodwill, making it more difficult to obtain shifts and less likely that the employer will be accommodating in the future.¹⁰⁴

Time at a courthouse is also time spent away from child care or other responsibilities at home. If all other factors are assumed equal, individuals with less disposable income are less able to obtain child care or related services.¹⁰⁵ As a result, these individuals may need to stay with their children or ill family members instead of appearing in court on a particular day. In an explanation to a judge via an early OCR system, one individual recounted how she was unable to come to the courthouse to address her concern because "[her] husband became disabled one month after this happened he lives off a machine that pumps blood to his heart only a trained person can take care of him I can not work and am broke . . ."¹⁰⁶ Even worse, if litigants attempt to bring children to court (in the face of higher transportation costs), they may be turned away as disruptions and be unable to resolve their legal issues.¹⁰⁷

Shorter court business hours exacerbate this problem. Particularly in smaller districts, courts may opt only to hear traffic cases a few days a week.¹⁰⁸ The same is true of other case types that may be prime candidates

102. CARMEN DENAVAS-WALT & BERNADETTE D. PROCTOR, U.S. CENSUS BUREAU, INCOME AND POVERTY IN THE UNITED STATES: 2014, at 7 (2015).

103. SUZANNE MACARTNEY ET AL., U.S. CENSUS BUREAU, POVERTY RATES FOR SELECTED DETAILED RACE AND HISPANIC GROUPS BY STATE AND PLACE: 2007–2011, at 1 (2013).

104. See Britta Palmer Stamps, *The Wait for Counsel*, 67 ARK. L. REV. 1055, 1074–75 (2014) (explaining that missing too much work results in job loss).

105. See Meredith Johnson Harbach, *Outsourcing Childcare*, 24 YALE J.L. & FEMINISM 254, 264–65 (2012) (describing how decisions about child care are often constrained by economic need).

106. Matterhorn Case Resolution User Comment No. 55fce8b6032fb155bc 5652ba (Nov. 2, 2014) (on file with authors).

107. As an explanation for why one individual had not appeared in court, that individual responded, "I came to court with my new born daughter because I couldn't find a baby sitter. But I was told to leave when she started crying. I didn't know that I couldn't bring a baby." Matterhorn Case Resolution User Comment No. 55918445032fb13a04bcd685 (June 29, 2015) (on file with authors).

108. In some small towns, traffic infractions are issued with summons for a particular day, leaving the scheduling out of the individual's hands. E.g., *General Information About Traffic Citations and Complaints*, BAKER CNTY. JUSTICE CT. DIST., http://www.bakercounty.org/justice/Traffic_Cases.html (last visited Jan. 24, 2016).

for online case resolution.¹⁰⁹ In some extreme cases, municipal courts are only in session once every two weeks.¹¹⁰ However, even in large cities, tight budgets have resulted in courts reducing their hours of operation.¹¹¹ If judges and other court personnel are unavailable at times that citizens can plausibly meet with them, it becomes much more difficult for individual litigants to request information or a remedy in court.

The burdens imposed on citizens by a “business hours only” approach are visible in early OCR system communications. For example, one individual pleaded with the court to adjust its hearing schedule, writing that “I earn \$200 dollars a week when I work 40hrs. This is why I couldn’t take off. I work Monday–Thursday 6 a.m. – 6 p.m. Can the date be scheduled on a Friday please?”¹¹² Because an OCR system permits communication with a judge to be asynchronous, it enables an individual to present a case to a judge at any hour of any day.¹¹³ In the example above, the citizen involved was able to contact the court outside of her work hours. The judge was free to respond to her when the judge found time during the course of the court’s normal business hours.

There is no perfect way to measure the burden courts impose on citizens by restricting the hours during which individuals can seek to resolve their outstanding legal issues. Still, it is possible to learn something about citizen temporal preferences by examining when people choose to address and resolve their cases when they are actually *free* to choose any time of day that they wish. Early OCR system data make such an inquiry feasible.¹¹⁴

109. For example, in order to resolve a warrant for failing to pay fines or appear in court in Ann Arbor, Michigan, an individual must go to the courthouse on “Tuesday–Friday between 8:30 a.m. and 10 a.m. or Monday between 1:00 p.m. and 2:30 p.m.” *Traffic/Criminal*, 15TH DIST. CT., <http://www.a2gov.org/departments/15D/divisions/Pages/Traffic-Criminal.aspx> (last visited Jan. 24, 2016).

110. Radley Balko, *How Municipalities in St. Louis County, Mo., Profit from Poverty*, WASH. POST (Sept. 3, 2014), <https://www.washingtonpost.com/news/the-watch/wp/2014/09/03/how-st-louis-county-missouri-profits-from-poverty/>.

111. *E.g.*, JUSTIN A. BARRY ET AL., CRIM. CT. OF THE CITY OF N.Y., ANNUAL REPORT 2011, at 14 (2011) (“Closing our busy parts at 4:30 PM helped the Unified Court System meet its budget targets, but significantly reduced our operating hours.”).

112. Matterhorn Case Resolution User Comment No. 55c7e661032fb106ae 7f60cd (Aug. 9, 2015) (on file with authors).

113. *Cf.* Kit Kinports & Karla Fischer, *Orders of Protection in Domestic Violence Cases: An Empirical Assessment of the Impact of the Reform Statutes*, 2 TEX. J. WOMEN & L. 163, 179 (1993) (stating that, based on survey data, less than one-fourth of judges are available at all times even for emergency protection orders, and more than 60 percent of judges are unavailable during the lunch hour). We do not advocate the use of the current generation of OCR systems for emergency orders—at least as a general matter—because of the delay inherent in asynchronous communication. However, the findings of the survey demonstrate that if judges are not even available for emergencies, they are most certainly not available at all times to hear traffic cases.

114. This is another advantage of using OCR systems: courts using such an approach

We determined, from a small sample of user requests—one that is instructive on this question but also not necessarily representative—that approximately 10 percent of these requests for traffic cases are submitted to courts on weekends, and about 30 percent are made outside of typical business hours.¹¹⁵ Without double counting people who make requests outside of business hours on weekends, we found that citizens made 36 percent of their requests when courts are generally not open.¹¹⁶ We note that because the use of OCR systems is much more time efficient (no travel, no lines), the 64 percent of requests that occurred during business hours may have been submitted during short breaks, over the lunch hour, or while in the midst of other temporary or unexpected downtime—i.e., periods during which physically going to court would have been impossible. Had these litigants been required to go to court in person, they may have preferred non-business hours. Indeed, it is possible that these litigants may have been unable to access the court *at all* had OCR systems not been available at the courts in question.¹¹⁷

These numbers, while not precise, indicate that a large fraction of the population would find it more convenient to address their legal issues at times when courts are closed.¹¹⁸ Some of these cases would surely be resolved either way; the fact that individuals request reviews and communicate with judges outside of open court hours, however, signals that it is perhaps much easier for them to do so during alternative times.¹¹⁹ In any

will be able to study their work flow much more efficiently and accurately in search of process improvements, at least if a significant volume of case activity flows through the system.

115. Matterhorn Time Stamp Data (on file with authors).

116. *Id.*

117. The average citizen at present is likely to be unaware of OCR system options even at courts with such a system in place. Therefore, users may discover and take advantage of OCR system options while at work or preparing for a trip to the courthouse. As these systems become common, time use patterns may adjust, and addressing and resolving outstanding legal issues may become something to take care of on Sunday afternoons.

118. This preference is consistent with other businesses attempting to develop methods to enable access outside of normal business hours. Even after the heavy adoption of ATMs and online bank accounts, banks are still finding it beneficial to make more services available outside of normal 9-to-5 business hours. See, e.g., *What is a Personal Teller Kiosk?*, RIVERMARK CMTY. CREDIT UNION, <https://www.rivermarkcu.org/what-is-a-personal-teller-kiosk> (last visited Jan. 24, 2016) (stating that with new “Personal Teller Kiosks,” 30 percent of “in-person” service occurs outside of normal business hours, despite the kiosks only being active from 8 a.m. to 8 p.m.). Even in the government arena, a number of major agencies have begun extending hours outside of normal business hours. See, e.g., Cal. DMV Online, *supra* note 15 (explaining that the California DMV has Saturday hours to help accommodate individuals who cannot make it to the DMV during the week). While it would be great from an access perspective if courts were to extend their hours, tight budgets make this difficult, and OCR systems can achieve something similar at no extra cost and with other gains, namely more efficiency and access.

119. NAT’L CTR. FOR STATE COURTS, *supra* note 1, at 10 (approximately 75 percent of people would conduct business with courts online if that option were available to them). This preference for interacting with courts online may signal that going to court in person is burdensome.

event, limited court hours are no doubt a significant hurdle to the effective use of law and the assertion of legal rights, and, at least at the margin, some individuals will be prevented from resolving their cases in a timely manner as a consequence of these temporal barriers.

Even if an individual is able to reach the courthouse during business hours, courthouses are often crowded and uncomfortable, and wait times are often excessively long.¹²⁰ Judges recognize that high “volume creates pressure to move cases in assembly-line fashion,” and that this method “obviously lacks in opportunities for the people involved in that proceeding to feel that they were listened to and treated with respect.”¹²¹ From a judge or court administrator’s perspective, if each case were to be scheduled individually, the high volume of cases would present a scheduling nightmare, so most of these proceedings occur as cattle calls—with large numbers of people sitting around waiting until someone calls their case number or name. This process reduces the waiting time for the judge (compared to scheduling time slots for each case), but it also means that every day, all across the country, large groups of people simply sit around in courthouses for long periods of time for reasons that have nothing to do with their cases.

Many cases are of course too complicated to be resolved with one or two rounds of back-and-forth correspondence. These cases may not be candidates for OCR systems. Even with respect to minor cases, the system (or a judge) can always determine that a particular case needs to be resolved face-to-face in court. However, an OCR system can still affect the ease of resolving these cases. By significantly reducing the overall number of people that must come to court in person, lines will be shorter and scheduling hearings for more complex cases will be easier. Judges and court personnel will have more time and energy to resolve these in-person proceedings. In other words, the proper deployment of technology like OCR systems has the potential to lower access barriers even for litigants with more complicated legal problems.

Even when accessing a court is physically easy and is not too financially costly or time consuming, many individuals are nonetheless reluctant or feel unable to do so. They may fail to address outstanding issues as a result; many citizens allow their unpaid tickets to escalate in just this

120. See Franklin R. Garfield, *Unbundling Legal Services in Mediation: Reflections of a Family Lawyer*, 40 FAM. CT. REV. 76, 77 (2002) (claiming that, in simple civil proceedings, “to appear at a court proceeding that may involve only ten to fifteen minutes of the lawyer’s time, the lawyer must drive to and from the courthouse and wait for the case to be called. Time spent traveling and waiting, which is typically billed to the client at the same rate as time spent in court, could easily add up to three to four hours”); see also Ian Weinstein, *The Adjudication of Minor Offenses in New York City*, 31 FORDHAM URB. L.J. 1157, 1172 (2003) (noting that, in New York, “[e]ach court appearance requires a trip to the courthouse and between one and five hours waiting time in the courtroom”).

121. Burke & Leben, *supra* note 52, at 409.

way.¹²² When litigants of this sort overcome their reticence and succeed at resolving their cases by physically appearing before a judge, their experiences may be unnecessarily traumatic, or the outcomes may be distorted by the inability of these litigants to communicate well in such a setting. These barriers come in several flavors, among them: lack of faith in the court or formal process, fear of discrimination, fear of reprisal, language or literacy difficulties, inability to cogently express oneself, fear of public speaking, inability to pay a fine, or even a simple distaste for court.¹²³ “For plaintiffs and defendants alike, litigation proves a miserable, disruptive, painful experience. Few litigants have a good time or bask in the esteem of their fellows—indeed, they may be stigmatized. Even those who prevail may find the process very costly.”¹²⁴ An OCR system can reduce many of these barriers by providing transparency, by delivering more information and features, and by offering new and better ways for litigants to voice their positions.

A citizen’s ability to effectively communicate his position is a critical component of an accessible justice system. Even if a citizen is physically present in a courtroom, he must still impart all relevant information and his preferences to the court in an organized and clear way if the judge is to resolve the case accurately and with confidence. But courtrooms are intimidating places—even attorneys with years of experience find themselves anxious when presenting to judges.¹²⁵ For an individual unfamiliar with the process, it is likely to be much worse.¹²⁶ In one compelling anecdote, a *pro se* tenant came to her eviction hearing armed with damning photographic evidence and knowledge of favorable law, but she mentioned neither the evidence nor the law to opposing counsel or the court.¹²⁷

122. For example, one OCR system user stated that, “I truly need to resolve this issue so I can continue my employment, if I get picked up I will lose my job and not be able to pay this off.” Matterhorn Case Resolution User Comment No. 5648ed11032fb160c989aec6 (Nov. 15, 2015) (on file with authors). This individual’s ticket had escalated into a warrant because of his failure to resolve the issue prior to using the court’s OCR system.

123. We have already identified barriers that technically fall into this category, including lack of information or understanding about the court system, the process, and the law, as well as fear of being arrested and imprisoned when presenting oneself in court to resolve a dispute. See Galanter, *supra* note 72, at 119; see also Marc Galanter, *The Day After the Litigation Explosion*, 46 MD. L. REV. 3, 8–11 (1986); Greiner et al., *supra* note 83, at 11–12.

124. Galanter, *The Day After the Litigation Explosion*, *supra* note 123, at 9 (internal citations omitted).

125. See generally Larry Cunningham, *Using Principles from Cognitive Behavioral Therapy to Reduce Nervousness in Oral Argument or Moot Court*, 15 NEV. L.J. 586 (2015) (discussing strategies to help lawyers cope with common oral-argument anxiety ranging from garden-variety nervousness to possible disorders).

126. See Schmitz, *supra* note 17, at 202 (“Litigation is often very traumatic and stressful for everyone, and especially for consumers and other individuals unfamiliar [with] or intimidated by the courtroom experience.”).

127. Fox, *supra* note 78, at 85.

When later asked why, the tenant explained: “[I]t didn’t come up.”¹²⁸ This disheartening outcome is made more understandable by research into psychological threat, which has shown that in some settings expectations of low performance can lead to “[a] recursive cycle, where psychological threat lowers performance, increasing threat and lowering performance further, in a repeating process.”¹²⁹ This phenomenon has been examined in the case of educational performance, where “the low self-confidence of students who experience early failure, even by chance, is surprisingly difficult” to overcome.¹³⁰ Like in school, in a courtroom many individuals lack an expectation that they will succeed or even perform well. Unlike schools, individuals enter courtrooms labeled “defendant” or “petitioner” and are often placed in an adversarial attitude. If a litigant is already struggling to understand the nuts and bolts of the law and the process and is then dropped into a room with judges and court clerks who are well versed in the system, a significant share will likely perform worse than if they had the opportunity to present the same material in a neutral setting.

An OCR system would allow litigants to take time to respond thoughtfully to questions and to make sure they convey all the points they wish to make—without a judge looking down from the bench or a room full of people looking on.¹³¹ The opportunity to write out or record a response allows litigants to fully form their thoughts outside of the stressful environment of a courthouse.¹³² Because the proceeding will not be in real time, individuals will have the option to consult outside resources and to get others’ opinions before answering questions put to them by the court;¹³³ they will not be forced (or feel forced) into agreeing or rejecting some course of action on the spot.

Furthermore, even absent any concerns about anxiety, written communication can be more effective than verbal communication in some set-

128. *Id.*

129. Geoffrey L. Cohen et al., *Recursive Processes in Self-Affirmation: Intervening to Close the Minority Achievement Gap*, 324 *SCIENCE* 400, 400 (2009).

130. *Id.*

131. See Dolly J. Young, *Language Anxiety from the Foreign Language Specialist’s Perspective*, 25 *FOREIGN LANG. ANNALS* 157, 163 (1991) (observing that “speaking is particularly anxiety provoking” relative to other language skill areas).

132. See Fox, *supra* note 78, at 98 (“People here are afraid to talk. You know, you get that inner fear, and you’re too afraid to say anything.”).

133. In addition to being better able to digest third-party guidance and convey their arguments and ideas more accurately, litigants may be better able to listen to and learn from the court in a less demanding setting. In an OCR environment, judges or other court or law enforcement personnel can send messages explaining the situation to litigants, which litigants can read over calmly in their own homes and/or on their phones. *But see, e.g.,* Jona Goldschmidt, *In Defense of Ghostwriting*, 29 *FORDHAM URB. L.J.* 1145, 1173 (2002) (alleging that some judges and attorneys are “irritated that someone receiving a modest amount of legal assistance has the audacity to come to court without counsel and believe that he or she can access the justice system”).

tings.¹³⁴ If courts allow litigants to concentrate on telling their stories—rather than dwelling on how intimidating the courthouse is or how frustrated and curt the judge appears—litigants may perform better in their proceedings. This will likely lead to more accurate and satisfying outcomes, just as students perform better in school if they can focus on the tasks at hand, rather than on the stress of failing.¹³⁵

In addition to the importance of good communication and information transmission for substantive reasons, facilitating an effective voice can be beneficial for litigants because they are more likely to feel that they have been heard. Litigants have been shown to “make a strong correlation between the ability to speak and a judge’s respectful treatment of them as individuals; it demonstrates civic competence.”¹³⁶ After all, from the point of view of the litigant, “if the judge does not respect litigants enough to hear their side or answer their questions, how can the judge arrive at a fair decision?”¹³⁷ Individuals tend to have more faith in systems when they feel they have had an opportunity to speak—interestingly, “even people who are told that their voice will have no impact on the decision will *still* perceive the situation as fairer if they get to speak.”¹³⁸ If OCR systems can ensure that at least certain citizens (who might otherwise be unable or unwilling to speak in open court) are able to take the time to coherently say what they want to say (and know that a judge will read it), more people will resolve outstanding claims, the resolution of those claims will be more accurate, citizens will be more satisfied with the process, and confidence in the judicial system may well increase.

Individuals are less likely to participate in the justice system if they distrust judges, court personnel, or the judicial process generally.¹³⁹ Distrust of this sort is effectively a barrier to access; it keeps people away and

134. Evans et al., *supra* note 18, at 424–25 (“In essence, a party’s written word, when properly expressed, can be the most persuasive way to transmit that person’s true intent and feelings. If the writing clearly and forcefully sets forth the writer’s conclusions and reasoning, the document itself tends to hold the reader’s attention. A carefully crafted document conveys the essence of the other person without the distraction of visual cues that may or may not be relevant to the information conveyed.”) (internal quotation marks omitted).

135. Geoffrey L. Cohen et al., *Reducing the Racial Achievement Gap: A Social-Psychological Intervention*, 313 *SCIENCE* 1307, 1309 (2006) (showing that students who focus on their work, rather than on the expectation that they will do poorly, perform better).

136. Paula Lustbader, *Listening from the Bench Fosters Civility and Promotes Justice*, 13 *SEATTLE J. FOR SOC. JUST.* 903, 907 (2015).

137. *Id.*

138. Burke & Leben, *supra* note 70, at 12 (emphasis added). Although this study evaluated the consequences of oral expression, its logic would seem to apply with similar force to written expression.

139. Ga. Sup. Ct. Comm’n on Racial & Ethnic Bias in the Ct. Sys., *Let Justice Be Done: Equally, Fairly, and Impartially*, 12 *GA. ST. U. L. REV.* 687, 768 (1996) (“Distrust serves to propagate negative feelings and perceptions of the legal system and to discourage minorities from seeking help through the court system.”).

in the shadows. This distrust has a number of sources, but two well-documented sources of distrust are the perception that judges are not members of the communities over which they preside and that the judiciary is inherently biased in its decisions as a consequence of taking into account a litigant's race, gender, appearance, or place in society.¹⁴⁰

Judges are primarily White males.¹⁴¹ Perhaps in part for this reason, minority groups, particularly Blacks, appear on average to have little faith in the court system.¹⁴² An OCR system will not, by itself, change the judicial composition of a court. Indeed, OCR systems might make it more difficult for litigants to see that the demographic makeup of the bench is changing—an evolution that might be beneficial for litigants to observe. However, without seeing the judge directly, it is also possible that a litigant's attention will be drawn to the outcome of her case and to her treatment by the court, rather than to the identity or social status of the deciding judge.¹⁴³ Although they are not precisely on point, studies have found that users of online government services are more likely to trust government as a result of their experiences online.¹⁴⁴ As we explore in more detail in Part III below, OCR systems can also increase the equity in judicial treatment of litigants and judicial decision making,¹⁴⁵ and to the

140. See Keith R. Fisher, *Education for Judicial Aspirants*, 43 AKRON L. REV. 163, 185–89 (2010) (summarizing a variety of surveys on racial perception of judicial fairness).

141. As of early August 2009, 70 percent of federal judges were White men; fewer White men have been appointed to the judiciary in recent years. RUSSELL WHEELER, BROOKINGS INST., *THE CHANGING FACE OF THE FEDERAL JUDICIARY 1* (2009), http://www.brookings.edu/~media/research/files/papers/2009/8/federal-judiciary-wheeler/08_federal_judiciary_wheeler.pdf.

142. Fisher, *supra* note 140, at 186 (finding that, in one California survey, 47 percent of Blacks rated the court system as “poor,” as compared to 17 percent of the overall population rating it “poor”).

143. We acknowledge that there are also potential drawbacks to this dynamic. For instance, it may be more difficult for citizens or outside groups to identify actual discrimination, prejudice, or bias, should a judge be able somehow to determine the demographic traits of a litigant. Fortunately, OCR systems also have the potential to generate detailed case- and litigant-level data that will permit courts and communities to examine court activity for inequitable patterns, which may ultimately be a reliable avenue to rooting out invidious disparate treatment by judges and other court personnel. Investigators will even be able to analyze communications between court officials and litigants directly.

144. Caroline J. Tolbert & Karen Mossberger, *The Effects of E-Government on Trust and Confidence in Government*, 66 PUB. ADMIN. REV. 354, 355 (2006) (stating that “users of local government Web sites are more likely to trust local governments, controlling for other demographic factors”); Eric W. Welch et al., *Linking Citizen Satisfaction with E-Government and Trust in Government*, 15 J. PUB. ADMIN. RES. & THEORY 371, 382 (2005) (finding that government website use is a significant contributor to overall satisfaction with e-government).

145. See Alex Kozinski, *What I Ate for Breakfast and Other Mysteries of Judicial Decision Making*, 26 LOY. L.A. L. REV. 993, 997 (1993) (recognizing various influences on judicial reasoning, including the fact that judges “all view reality from [their] own peculiar perspective; [they] all have biases, interests, leanings, [and] instincts,” and addressing several constraints on judicial discretion).

extent that relevant community members perceive this shift, distrust of the judiciary might wane further.

Because technology allows for anonymization or pseudo-anonymization of court proceedings, OCR systems can also assuage individuals' fears of judicial reprisal. If an individual fails to reach a resolution with the court while negotiating remotely and subsequently comes to the courthouse for some other reason, the system can be configured so as not to reveal to the judge any deal that was proposed or requested earlier but that was not reached online. In other words, OCR systems can be deployed in a way that only *adds* opportunities for case resolution, leaving parties at worst in the same situation they would have been in had they not attempted to resolve the issue through an OCR system.

Certain disadvantaged groups face additional barriers to accessing our courts. Language barriers and disabilities can make going to court and resolving an outstanding issue even more complicated and confusing than it already is for the rest of the population. Language barriers disproportionately affect certain minority groups, particularly Hispanic and Asian individuals.¹⁴⁶ However, OCR systems can provide a scalable solution for individuals who do not speak English by providing translations on screen, rather than requiring a human translator in each in-person proceeding. Importantly, the former approach is likely to be significantly less costly and probably more time efficient for all parties, at least in the long run.¹⁴⁷ An OCR system does not promise to lower the barriers to justice for individuals who are illiterate in the near term.¹⁴⁸ However, it is possible that it may help such individuals indirectly; as more people use OCR systems, fewer individuals will be attending court in person, and courts should thereby have more time and resources to interact in person with those who remain.

The inability to “pay” is also a serious barrier to accessing justice in the United States. Even when litigants can otherwise access and navigate the judicial system and make their cases persuasively, individuals from lower socioeconomic classes will be less able to afford any fines or fees relative to their wealthier counterparts. Consequently, these citizens may

146. Renee Stepler & Anna Brown, *Language Spoken at Home and English-Speaking Ability, by Age, Race, and Ethnicity: 2013*, PEW RES. CTR. (Mar. 11, 2015), http://www.pewhispanic.org/2015/05/12/statistical-portrait-of-hispanics-in-the-united-states-1980-2013/ph_2015-03_statistical-portrait-of-hispanics-in-the-united-states-2013_current-07/ (reporting that 38.8 percent of Hispanic persons and 38.3 percent of Asian persons speak English “less than very well”).

147. See, e.g., *Federal Court Interpreters*, U.S. CTS., <http://www.uscourts.gov/services-forms/federal-court-interpreters> (last visited Jan. 24, 2016) (noting that fees for court interpreters range from about \$202 to \$418 per day, depending on the interpreter's certification level).

148. We note, however, that OCR systems need not rely on written exchanges. As dictation software improves, OCR systems may evolve to be voice-activated and controlled, and available in many languages.

conclude, not unreasonably, that they cannot use the courts to resolve any dispute for which the court is likely to impose a monetary penalty.¹⁴⁹

The Supreme Court has held that it is impermissible for a court to “impos[e] a fine as a sentence and then automatically conver[t] it into a jail term solely because the defendant is indigent and cannot forthwith pay the fine in full.”¹⁵⁰ While the option for a reduced fine or payment plan exists, it rests with the discretion of the judge,¹⁵¹ and it does not appear to be well understood by the public.¹⁵² In fact, although there is case law promoting the reduction in fines for those unable to pay, individuals may never know about their eligibility for reduced fines or a payment plan unless they are comfortable asking for a reduction. An indigent person may simply refuse to enter a courthouse and spend hours standing in a queue on some unknown chance that a judge might allow a payment plan or reduce the amount of the fine. On the other hand, he may well be willing to spend a much smaller amount of time—with no risk of arrest—to request a solution to this dilemma using an OCR system.

Warrants present a special problem of access to justice and also impose significant social costs not normally reckoned on court budgets or even in the backlog of unresolved cases. We have already identified many barriers that may prevent an individual from going to court to resolve a ticket or citation; these barriers become even more disabling once a warrant is issued. When access barriers inhibit someone from resolving an outstanding matter, the court may issue a warrant, either for failing to pay a fine or for failing to appear in court.¹⁵³ Because barriers are more pronounced for people from lower socioeconomic classes, it is these communities that suffer particularly from the tidal wave of warrants. And it is a tidal wave—warrants affect tens of millions of people nationally, and for litigants wanting to honestly and forthrightly address their problems but who lack the ability to hire an attorney, the only realistic option available,

149. Brown, *supra* note 84.

150. Bearden v. Georgia, 461 U.S. 660, 667 (1983) (adopted by Michigan in *People v. Jackson*, 769 N.W.2d 630 (Mich. 2009)).

151. ABILITY TO PAY WORKGROUP, TOOLS AND GUIDANCE FOR DETERMINING AND ADDRESSING AN OBLIGOR’S ABILITY TO PAY 1 (2015), <http://courts.mi.gov/Administration/CAO/Resources/Documents/Publications/Reports/AbilityToPay.pdf> (“The ultimate determination of the ability to pay rests with the judge.”).

152. One early OCR system user explained to a judge: “I was nervous about coming to court because I never seemed to have that much money ahead, and was unsure if I would be required to pay in full when I appeared” Matterhorn Online Case Resolution User Comment No. 55fce8b6032fb155bc5652ad (Oct. 11, 2014) (on file with authors).

153. See, e.g., MICH. COMP. LAWS § 257.321a(1) (explaining that “[a] person who fails to answer a citation, or a notice to appear in court for a violation . . . is guilty of a misdemeanor punishable by imprisonment for not more than 93 days or a fine of not more than \$100.00, or both”); *Bearden*, 461 U.S. at 667 (explaining that refusal to pay a fine or restitution, or failure to take bona fide efforts to pay the fine or restitution, could justify imprisonment).

as we noted above, is to self-surrender at court and run the risk of incarceration.¹⁵⁴

We described this paradigmatic limitation of in-person process—fear of arrest when going to court to resolve the warrant, a Catch-22 really—near the beginning of Part II. But failure-to-pay or failure-to-appear warrants bring other burdens and constraints that change and in some ways transform the lives of affected citizens. In addition to limiting access to courts, these individuals often avoid any location where police or public officials might have reason to “run” their names—i.e., search for an active warrant.¹⁵⁵ Having such a warrant makes it less likely that a citizen will call the police to report crimes, vote, or otherwise engage in civic activities.¹⁵⁶ While not all of this avoidance behavior concerns access to justice *per se*, some of it certainly does, such as the inability of individuals with outstanding warrants to seek remedies in court for legal wrongs of any sort without putting themselves in jeopardy.¹⁵⁷ In effect, millions of poor, minority citizens live without the protection of the law because they cannot pay an outstanding fine and because they cannot easily access the courts to identify a workable solution; thus, the protection of the “laws” can hardly be said to be equal.

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Technological innovation in the form of OCR systems can bring greater court accessibility to a wide array of people, particularly those who

154. See Greiner et al., *supra* note 83, at 11–12 (relating a story of litigant who—perceiving a risk of arrest and imprisonment—refused to come to court to answer a summons to appear for a debt collection hearing). Courts can imprison litigants deemed able to pay their fine and fees, and it appears from media reports that these determinations are sometimes inaccurate, causing some who in truth cannot afford to pay to nevertheless end up in jail. See, e.g., Ed White, *Proposed Rule Would Strengthen Ban on Pay-or-Jail Sentences*, CBS DETROIT (Jan. 1, 2016), <http://detroit.cbslocal.com/2016/01/01/proposed-rule-would-strengthen-ban-on-pay-or-jail-sentences/>.

155. Sarah Brayne, *Surveillance and System Avoidance: Criminal Justice Contact and Institutional Attachment*, 79 AM. SOC. REV. 367, 385 (2014) (finding that individuals who have interacted with the criminal justice system in some way are less likely to access institutions that keep formal records, including banks, hospitals, and schools).

156. See, e.g., Meagan Cahill, *Focusing on the Individual in Warrant Clearing Efforts*, 11 CRIMINOL. & PUB. POL'Y 473, 476 (2012) (stating that warrants cause fear of immediate arrest that adversely affects individuals); Balko, *supra* note 110 (describing an example of a not-at-fault party in a car accident being scared of police involvement because of an outstanding minor warrant); Barry H. Weinberg & Lyn Utrecht, *Problems in America's Polling Places: How They Can Be Stopped*, 11 TEMP. POL. & CIV. RTS. L. REV. 401, 431 (2002) (describing law enforcement officials' interference with voting and noting that “officers stood outside polling places with lists of outstanding warrants looking for suspects”).

157. E.g., *Sanchez v. City of Picayune*, 656 So.2d 92, 95 (Miss. 1995) (noting that the defendant had been reluctant to appear in court because of an outstanding warrant against him); *Linderman v. Lacker*, No. 15-cv-02675, 2015 WL 5026061, at *5 (C.D. Cal. Aug. 10, 2015) (“Carrie was reluctant to call the police because she had an outstanding arrest warrant for an unpaid ticket.”).

have historically had less access to the courts. However, in implementing such a system, courts and policymakers must take care not to exclude people for whom Internet access is less available.¹⁵⁸ In 2013, the U.S. Department of Commerce reported that 80 percent of Whites in the United States had home computers, but that for Blacks that number was only 62 percent.¹⁵⁹ Individuals with disabilities owned home computers at even lower rates (53 percent), as did individuals with a lower income (52 percent of households with less than \$25,000 annual income).¹⁶⁰ These racial and economic disparities raise significant concerns. However, the main disparity seems to be in home computer ownership rates and not actually in Internet access.¹⁶¹

Furthermore, technological barriers to accessing an OCR system (if a court makes one available) appear to be shrinking rapidly. Recent evidence indicates that the digital divide is narrowing, with the “largest gains occurring for those groups that started with the least.”¹⁶² In the long run, this evidence suggests that we may be able to expect “convergence toward uniformly high levels of access and adoption, [but] there is still a substantial distance to go, particularly in our poorest neighborhoods and most rural communities.”¹⁶³ Nonetheless, OCR systems are the future, and as we look forward to that future, access to the Internet will asymptotically approach full saturation.¹⁶⁴

Data on phone ownership trends support the proposition that the digital divide is becoming narrower with regard to mobile phones. A survey by the Federal Reserve in 2014 verified that mobile phones are in widespread use, as 87 percent of the U.S. adult population owns a mobile

158. This is primarily an equity issue. As OCR systems provide an additional avenue to access courts rather than replacing in-person process, the primary concern is making access much better for the already haves without doing much to help the have-nots. See generally KENTARO TOYAMA, GEEK HERESY: RESCUING SOCIAL CHANGE FROM THE CULT OF TECHNOLOGY 49 (2015) (explaining that even if a particular technology is made available to everyone, the haves may be better positioned to make the most of it, increasing inequality).

159. NAT'L TELECOMM. & INFO. ADMIN. & ECON. & STATISTICS ADMIN., U.S. DEP'T OF COMMERCE, EXPLORING THE DIGITAL NATION 26 (2013).

160. *Id.*

161. COUNCIL OF ECON. ADVISERS, MAPPING THE DIGITAL DIVIDE 6 (2015) (noting that, “[a]ffordability aside, almost all Americans have the option of purchasing an Internet connection with an advertised download speed of [10 Mbps]—fast enough to stream a high-definition movie”). Once public access to the Internet, access to the Internet via smart phones or other wireless devices, and derivative access to the Internet through friends and family members are taken into account, these disparities, and even the numbers of individuals with no access, are likely small.

162. *Id.* at 1.

163. *Id.*

164. See *Internet Usage Statistics: World Internet Users and 2015 Population Stats*, INTERNET WORLD STATS (Nov. 30, 2015), <http://www.internetworldstats.com/stats.htm> (reporting an 800-percent growth in Internet usage rates between 2000 and 2015).

phone.¹⁶⁵ Of these mobile phone owners, 61 percent owned an Internet-enabled smartphone in 2013—up from 52 percent in 2012.¹⁶⁶ Even among adults making less than \$30,000 per year, 84 percent have a mobile phone.¹⁶⁷

While individuals with lower incomes are less likely to own mobile phones, there appears to be little variation in ownership rates across racial groups: 90 percent of Blacks and Whites own a mobile phone, while 92 percent of Hispanic individuals own one.¹⁶⁸ This rapid increase bodes well for the ability of our fellow citizens to access justice online *equally*. According to the Pew Research Center, “[i]n contrast to internet use and broadband adoption, blacks and whites are equally likely to own a cell phone of some kind, and also have identical rates of smartphone ownership.”¹⁶⁹ In fact, Blacks in the United States with household incomes of less than \$30,000 are actually much more likely to own a smartphone than their White counterparts.¹⁷⁰

We do not mean to suggest that adoption of cell phone technology is uniform across every population group, particularly disadvantaged ones. Internet use, familiarity, and literacy might vary dramatically, even if equal numbers of every group own a web-enabled smart phone. But these numbers do mean that making justice available online will significantly reduce the barriers to access for a large and growing part of the population. Considering that, historically, computers have been the prime method of accessing the Internet, the total size of the population with access to courts through an OCR system will eventually be even higher than cell phone adoption rates alone would suggest.¹⁷¹

165. BD. OF GOVERNORS OF FED. RESERVE SYS., CONSUMERS AND MOBILE FINANCIAL SERVICES 2014, at 1 (2014).

166. *Id.* at 4. The figures derived from the Federal Reserve Board’s survey are nearly identical to the 91 percent mobile phone ownership rate and 56 percent smartphone ownership rate reported by the Pew Research Center. Aaron Smith, *Smartphone Ownership 2013*, PEW RES. CTR. (June 5, 2013), <http://www.pewinternet.org/2013/06/05/smartphone-ownership-2013/>. By January of 2014, smartphone adoption had risen to 64 percent of American adults. *Cell Phone and Smartphone Ownership Demographics*, PEW RES. CTR., <http://www.pewinternet.org/data-trend/mobile/cell-phone-and-smartphone-ownership-demographics/> (last visited Jan. 24, 2016) [hereinafter *Cell Phone Ownership Demographics*].

167. *Mobile Technology Fact Sheet*, PEW RES. CTR., <http://www.pewinternet.org/fact-sheets/mobile-technology-fact-sheet/> (last visited Jan. 24, 2016).

168. *Cell Phone Ownership Demographics*, *supra* note 166.

169. Aaron Smith, *African Americans and Technology Use: A Demographic Portrait*, PEW RES. CTR. (Jan. 6, 2014), <http://www.pewinternet.org/2014/01/06/african-americans-and-technology-use/>.

170. *Id.*

171. Andrew Perrin & Maeve Duggan, *Americans’ Internet Access: 2000–2015*, PEW RES. CTR. (June 26, 2015), <http://www.pewinternet.org/2015/06/26/americans-internet-access-2000-2015/> (reporting that in 2015, 84 percent of adults in the U.S. had access to the Internet and that, while low income individuals have access at lower rates, “class-related gaps have shrunk

We hasten to add that many other important institutions that historically relied on single face-to-face interactions have adopted comparable types of technology and have embraced remote dealings, generally with salubrious consequences for all.¹⁷² For example, as we noted at the outset of this piece, in recent years, technology-based remote access to financial institutions has expanded considerably.¹⁷³ Some parallels can be drawn from remote access to financial institutions to envision the possible uses of mobile devices for resolving legal issues. For example, people could potentially communicate with court officials and request leniency in much the same way that they are currently checking their bank account balances, transferring funds, and depositing checks via mobile devices over the Internet. The ability to make financial transactions remotely is certainly not a perfect proxy for resolving outstanding legal disputes through an OCR system. But examining smartphone use among underbanked individuals can shed some predictive insight into how able socioeconomically disadvantaged individuals will be to access OCR systems.

In 2013, “[m]obile phones [we]re prevalent among unbanked . . . consumers—69 percent of the unbanked ha[d] access to a mobile phone, approximately half of which [we]re smartphones The share of consumers who are unbanked [wa]s 11 percent.”¹⁷⁴ Additionally, in 2014, “[t]he use of mobile financial services [wa]s particularly prevalent among the 17 percent of the population that [wa]s underbanked (people with bank accounts but who also use check cashers, payday lenders, auto title loans, pawn shops, or payroll cards).”¹⁷⁵ If being unbanked is a decent proxy for low socioeconomic status, perhaps as many as half of these people will have no difficulty accessing justice online through OCR systems. The other half, while being unable to access through their personal smartphones,¹⁷⁶ and possibly without home computers, would be able to

dramatically in 15 years as the most pronounced growth has come among those in lower-income households and those with lower levels of educational attainment”).

172. *But see generally* TOYAMA, *supra* note 158.

173. *See* Bank Notes, *supra* note 11, at 6.

174. *See* BD. OF GOVERNORS OF FED. RESERVE SYS., *supra* note 165, at 23.

175. *Press Release*, *supra* note 9.

176. The growth in access to mobile phones seems to have mostly leveled off, but an increasing share of those phones are smartphones—61 percent of mobile phones were smartphones in 2013, compared to just 52 percent a year earlier. BD. OF GOVERNORS OF FED. RESERVE SYS., *supra* note 165, at 4. In addition, the federal government has dedicated resources to insuring that low-income individuals have mobile phones, including smartphones. These programs give phones—nicknamed “Obama phones”—and plans to individuals at no cost. Eligibility is based primarily on membership in a government benefits program, including Medicaid or Food Stamps, and varies by state. *E.g.*, *How to Qualify for Assurance Wireless, a Lifeline Assistance Program*, ASSURANCE WIRELESS, <http://www.assurancewireless.com/Public/HowToQualify.aspx> (last visited Jan. 24, 2016). As long as programs like these continue to receive funding, access to justice via mobile phone will continue to expand. In conjunction with the introduction of OCR systems, the investment in mobile phones for low-income individuals will also work to

turn either to public Internet access at places like libraries or to friends or family members with access. Otherwise they would, unfortunately, be relegated to the status quo—standard, old-fashioned courtroom procedures.

Interestingly, at least one survey reports that Blacks and women are especially likely to use local government websites,¹⁷⁷ suggesting perhaps a higher take-up rate of court-oriented online access tools for these groups. On the other hand, this same report also identifies the existence of a significant digital divide between citizens in rural and urban areas.¹⁷⁸ Because rural areas are more spread out, many citizens in these areas will face higher-than-average travel distances to the courthouse and will have limited public transit options. Physical distance to a courthouse is a barrier that OCR systems are ideally suited to overcome, as we note above. However, the relative lack of rural Internet access will constitute a significant limitation on the access benefits OCR systems can deliver to individuals in rural areas.

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In this Part, we examined barriers to access and demonstrated that these obstacles are pronounced and important for large numbers of Americans who face minor infractions or outstanding warrants. These access barriers include lack of understanding of the law and court procedures, fear of arrest and reprisal, physical distance, temporal mismatch, and the inability to express oneself in court or anxiety about doing so. These access burdens tend to fall disproportionately on those of low socioeconomic status, including certain racial minorities,¹⁷⁹ and are particularly galling because—although the initial stakes of minor cases are often quite low (sometimes less than \$100) and the applicable law and procedure relatively straightforward—failure to resolve these issues in a timely manner can result in oppressive individual consequences and serious social and community costs.

In the face of these challenges, we argued that OCR systems, which are particularly well suited to the resolution of minor cases, have the potential to improve our justice system by dramatically reducing many access barriers. Moreover, because poor individuals are less able to absorb the costs of surmounting access barriers and generally have access to fewer resources with which to reduce these costs,¹⁸⁰ OCR systems are likely to

equalize the ability of all citizens to participate in judicial process and benefit from the use of our courts.

177. Lee Rainie & Elena Larsen, *The Rise of the E-Citizen: How People Use Government Agencies' Web Sites*, PEW RES. CTR. (Apr. 3, 2002), <http://www.pewinternet.org/2002/04/03/the-rise-of-the-e-citizen-how-people-use-government-agencies-web-sites/>.

178. *Id.*

179. Cappelletti & Garth, *supra* note 47, at 197–98.

180. BARR, *supra* note 101, at 1; *cf.* Mary Spector, *Debts, Defaults and Details: Exploring the Impact of Debt Collection Litigation on Consumers and Courts*, 6 VA. L. & BUS. REV. 257, 289 (2012) (“[T]enants from geographic areas with the highest concentration of poverty exhibited the

disproportionately benefit the poor and disenfranchised. We also stressed that individuals who are unable to access the Internet are no worse off when courts implement OCR systems. Online resolution systems supplement, rather than replace, courts, making even traditional in-person processes more efficient and effective and potentially lowering access barriers even for those individuals who either opt not to use OCR technology or who are unable to do so.

III. OCR SYSTEMS AND JUDICIAL DECISION MAKING

Online case resolution systems will not only lower access barriers for many of the most common categories of cases, but will also make the actual resolution of these minor cases more efficient and cost effective.¹⁸¹ In so doing, an OCR system is likely to improve decision making in all remaining cases—which will be more difficult or complex on average and will continue to be handled in a face-to-face setting in a courthouse. The reason, unremarkably, is that an effective OCR system is likely to increase a court's bandwidth,¹⁸² and as a consequence judges will be free to devote more of their time, experience, and expertise to these intricate matters—a much better use of judicial resources.

More remarkable, however, is the fact that decision making quality and the accuracy of the outcomes of cases that courts *do* resolve through OCR systems are unlikely to suffer. Speed need not equate with brash judgment. In fact, well-designed OCR systems can provide judges with better and more digestible information than traditional in-person proceedings. Moreover, while OCR software can synthesize and convey information likely to be useful to a judge, an OCR system can also filter out irrelevant information, especially when it might lead to undesirable biases.

One obvious potential concern with the notion of using an OCR system to resolve cases is the possibility that a computer algorithm might actually be *making* the decisions—i.e., that justice in these cases might be automated, with no judge whatsoever behind the wheel. While there are some who argue that such an approach might lead to more even-handed

highest rate of default in eviction cases, even when taking into account the merits of any available defenses.”).

181. We do not make the affirmative case in this Article that the use of OCR systems will improve the efficiency of minor case resolution from the *court's* perspective, but we believe this point to be almost self-evident, at least once courts overcome the expected initial growing pains of installing the system and training personnel. Fewer people and resources will be necessary to manage the much smaller numbers of people regularly appearing in the courthouse—less security, less wear and tear, etc.—and fewer clerks will be needed to deal with paper records, data entry, and so on. Cases will be resolved sooner, which will reduce costs and bring in revenue earlier. The typical benefits of information technology (e.g., better information transmission, fewer mistakes, and more complete records) will also redound to courts.

182. *But see supra* note 33 (discussing the fact that lower access barriers will lead to more cases, so bandwidth might increase by less than it otherwise would, and it could actually shrink).

and accurate outcomes,¹⁸³ this argument is orthogonal to the use of software to improve court efficiency and performance. After all, a judge, too, can doggedly follow a formula or employ some other routinized approach,¹⁸⁴ no machine needed. Physically announcing or recording a ruling on an issue does not require human thought, discretion, or expertise; ruling *wisely* does, however. Correspondingly, just because a computer program happens to play a role in a particular legal process does not mean that it will “decide” the outcome of a proceeding.¹⁸⁵

An effective OCR system, as we imagine it, will serve to efficiently connect courts with litigants and their cases. If designed and implemented well, OCR systems can actually empower judges. Judges would retain the full scope of their in-person, face-to-face judicial discretion and would receive all of the information they need to decide an issue accurately, but no more.¹⁸⁶

In practice, computer programmers will work closely with judges in designing OCR systems for courts and will be able to build into the systems any hard rules that judges or policymakers believe are necessary for wise adjudication or are required by law.¹⁸⁷ While extreme versions of such systems could, for example, reflexively deny or grant all requests made by every citizen contesting or seeking to negotiate the terms of an outstanding warrant or civil infraction, in reality successful OCR systems

183. See, e.g., William M. Grove et al., *Clinical Versus Mechanical Prediction: A Meta-Analysis*, 12 PSYCH. ASSESSMENT 19, 25 (2000) (finding that “mechanical prediction is typically as accurate as or more accurate than clinical prediction”).

184. E.g., U.S. SENTENCING GUIDELINES MANUAL (2015) (providing formulaic instructions and tables for use by judges and probation officers in federal criminal sentencing proceedings).

185. Computer programs do not simply exist—someone must write them. Thus, in a real sense, it is the designer who decides how decisions are made. Computer programs are simply tools for humans, and they can be constructed to allow for human input at any point in the process, assuming that humans, *ex ante*, wish it. Moreover, judicial decision making already is (and forever will be) influenced by algorithms in the narrowest of senses. Judges, for example, must conduct legal research, and to do this, they use services like Westlaw and LexisNexis. These services identify and deliver content to judges (or their clerks), and this content affects judicial choices. But how precisely do these research search algorithms work? Might it be true that Westlaw and LexisNexis are “influencing” outcomes by how they locate, organize, and present case law, academic research, and other resources to judges?

186. See Peters et al., *supra* note 31, at 137 (concluding that the negative effects of too much information can be ameliorated by providing only salient, available, and non-cognitively-burdensome information and by limiting choice sets).

187. Well-designed systems would truly be an extension of the court, and so the content and feel of the online website and all messaging coming from the court, for instance, would be entirely determined by the court and its decision makers and would be in compliance with all legal requirements. Cf. Ronald Leighton et al., *Panel Three: Implementation—What Methods, if Any, Can Be Employed to Promote the Existing Rules’ Attempts to Protect Private Identifier Information from Internet Access?*, 79 FORDHAM L. REV. 45, 48–49 (2010) (describing the iterative process of developing privacy and security controls for the United States court system’s online records and information database, PACER, including feedback from judges, court clerks, and experts).

would be carefully tailored to the substance and procedure of the relevant law, to the practices of the court, and even to an individual judge's idiosyncratic way of exercising discretion in the particular categories of cases at issue. Indeed, OCR systems could (and most likely would) be entirely configurable to the specific preferences of each judge.¹⁸⁸ Judges have wide latitude in how they conduct business in their chambers and courtrooms, and so to mimic these conditions, a fully configurable OCR system would impose few if any constraints on decision making.¹⁸⁹

To see how all of this might work, imagine that a judge uses the following approach in deciding whether to reduce a traffic infraction to one with a smaller penalty in response to a request for review: If an individual has two previous tickets of a particular type within the last two years, the judge will categorically refuse to negotiate. If the individual has a single ticket, the judge will look more closely at the case. He will ask the litigant open-ended questions about her driving behavior and will examine her driving record more closely. If the individual has a clean record, the judge will offer a standard reduction in penalty, almost every time. When this process occurs in a courtroom, the judge usually has only the litigant's driving record in front of him to guide his decision. The judge will resolve the case in a minute or two, notwithstanding the fact that the litigant may have waited most of a day and had to take time off of work, pay for parking, and possibly stand in line.¹⁹⁰

It is straightforward for an OCR system to replicate this entire process, absent the one-minute face-to-face meeting. In theory, the system can easily cross-reference historical driving record data to determine whether the individual has had tickets in the past. If the judge wants a "no exceptions" process, the system can identify petitioning litigants with two or more tickets within the last two years and either automatically reject the requests or flag them for "likely rejection," based on the judge's

188. See Matthew Littlefield, *Understanding Out-of-the-Box v. Configured v. Customized Software*, LNS RESEARCH (Jan. 30, 2015, 2:43 PM), <http://blog.lnsresearch.com/blog/bid/204226/Understanding-Out-of-the-Box-vs-Configured-vs-Customized-Software> (explaining the distinction between the terms configurable and customizable, and defining configurable as "[a]ny functionality that can be created using built-in workflow tools shipped by the vendor. To be considered configurable, functionality should be forward-compatible with future releases.").

189. To the extent that this latitude is an unattractive feature of judicial decision making, preferences built into OCR systems by judges would naturally be more transparent than decision-making norms or values in judges' heads because the former are explicitly verifiable. Moreover, consistency in the day-to-day OCR workflow of judges might influence the consistency of outcomes across judges.

190. See, e.g., Kaitlin Parker, *Visitors to the Compton Courthouse Traffic Court Face Long Lines, High Fees*, INTERSECTIONS S. L.A. (Apr. 20, 2011), http://intersectionssouthla.org/story/visitors_to_the_compton_courthouse_traffic_court_face_long_lines_high_fees/ ("[The bailiff] clarified the purpose of traffic arraignment court to the group. 'All you're gonna do is tell the judge guilty or not guilty. The judge is not here to hear your case.'").

rule.¹⁹¹ Today, this has to be done manually, by hand, by someone.¹⁹² If the individual has a single ticket, the system would present the judge with more data about the case. This information might be a simple driving record—i.e., the driving record that is “pulled” manually in many courts today—or it might be a great deal more,¹⁹³ perhaps distilled and refined so that it is easier for the judge to process.¹⁹⁴ The judge would be able to ask the litigant free-form questions; alternatively, the system might be designed to request that the litigant answer a set of pre-programmed questions specific to known facts about the litigant, his case, or his driving record.¹⁹⁵ The litigant might even record a voice or video statement for the judge on his mobile phone. Finally, if the litigant has no previous tickets, the judge can have the system flag those cases as “likely to merit relief” to be quickly reviewed for something out of the ordinary or to automatically grant them.

Either way, the litigant is much better off if her request can be made from home at 11 p.m., and the judge is certainly no worse off.¹⁹⁶ We assume that the heuristics judges use to decide cases vary a great deal from judge to judge, but a flexible OCR system can easily accommodate these differences, should they be considered socially valuable.¹⁹⁷ In addition, the data aggregation, processing, and refining capabilities are likely to increase

191. The system might also deem the litigant ineligible for OCR based on his driving record. In effect, a judge or court would program the platform to require that the litigant make an in-person appearance in light of his record.

192. If a judge is able to ignore cases that clearly will not qualify for a reduction, more time will be available for the judge to spend on cases that may be eligible for relief under the judge’s own guidelines.

193. In theory, with an OCR system, the sky is the limit when it comes to the information a judge might consider, assuming it is available and legitimate. For example, one could imagine age, miles driven per year, average number of passengers, make and year of the car, years with a license, previous accidents, and insurance coverage all being *relevant* to a judge’s decision, depending on what he is trying to accomplish. There may be good policy reasons to exclude some of these factors from influencing a judge’s thinking about a case, however.

194. See Peters et al., *supra* note 31, at 137 (suggesting that delivery of information in a streamlined way that limits choice sets can alleviate the effects of cognitive overload).

195. Importantly, this additional information (and any statement the litigant wished to make to the judge) could be collected in advance by the system based on the nature of the citation and the litigant’s driving record, so that the raw or processed content would be ready (along with the answers to automatically generated follow-up questions, should they be necessary and of interest to the judge) when the judge first examines the case.

196. In particular, OCR systems can always be designed so that an individual judge can declare all cases to be ineligible should that judge *prefer* face-to-face interactions in all types of cases. In other words, judges can use the configurability of the decision rules to opt out of an OCR system.

197. During the setup of the system, each judge would be able to specify his or her rules to the programmer, who could then set up filters and flagging routines. Implementing such variety sounds time consuming, but in practice, most rule types will be similar and relatively simple (e.g., solely relying on someone’s driving record)—at least in the short run—and so would require little work.

efficiency, and given the asynchronicity of the proceedings, judges will be able to more efficiently manage their time, perhaps resolving traffic issues early in the morning before a day-long civil trial, rather than sticking to a pre-set schedule, which might require interrupting a trial, despite the considerable inconvenience of doing so.

The arrival of a new age of court technology is a time for reflection, not just on how best to boost court efficiency in arriving at the same outcomes but on ways to enhance the decision-making processes of judges to improve the quality of those outcomes. Although it seems likely that judicial decisions will become more accurate as judges are free to devote more of their time and effort to their more difficult cases, designers, in collaboration with judges and policy makers, can also incorporate into OCR systems a set of practices and data collection and analysis tools capable of further augmenting judicial decision making.

To begin with, OCR systems will allow courts to collect better data and leverage that data to greater effect. In an OCR world, courts and citizens will be interacting through an online platform, which means that the *entire* interaction will become a set of data points. Courts can choose to analyze these new data to identify important decision-related patterns and outcomes—including content analysis of back-and-forth natural language communication.¹⁹⁸ While courts would be free to develop and follow their own decision and business rules, OCR systems may well facilitate transparency across courts, should courts desire it, potentially opening our collective eyes to what works and what fails in surrounding courthouses.¹⁹⁹ In addition, courthouses are not the only institutions with data that might inform judicial decision making and court practices. Other government agencies, such as state and local police departments, departments of correction, social welfare agencies, regulatory bodies, and licensure boards are custodians of treasure troves of potentially useful information.²⁰⁰

Judges can in theory access some of this information today, but in reality, it would require a great deal of effort to obtain even raw data in

198. See generally KLAUS KRIPPENDORFF, *CONTENT ANALYSIS: AN INTRODUCTION TO ITS METHODOLOGY* (3d ed. 2013).

199. See generally Marc L. Miller, *A Map of Sentencing and a Compass for Judges: Sentencing Information Systems, Transparency, and the Next Generation of Reform*, 105 COLUM. L. REV. 1351 (2005). It is easy to imagine OCR systems facilitating research on the effects of substantive penalties and procedures on recidivism or future antisocial behavior, but the benefits of extensive, shared data would not end there. Over time, the easy availability of data on decisions and subsequent outcomes could lead to substantial improvements in the quality of judicial decisions. Furthermore, research and analysis will become more reliable (and therefore more useful) as adoption and data sharing become more widespread and as a broader, more accurate view of judicial behavior emerges.

200. E.g., *Crime Statistics*, OAKLAND POLICE DEP'T, <http://www2.oaklandnet.com/Government/o/OPD/s/Statistics/index.htm> (last visited Jan. 25, 2016); *Prison Population Counts*, BUREAU OF JUST. STATS., <http://www.bjs.gov/index.cfm?ty=tp&tid=131> (last visited Jan. 25, 2016).

many instances. Making use of most raw, “potentially” useful information at present would be clunky and inefficient, to say the least. Unless they are properly distilled, data can be incredibly rich, but effectively indigestible, and in any event most court data rarely reach judicial eyes. Indeed, in at least most courts, it is even difficult for judges to know what other judges do in similar cases.²⁰¹ Judges today receive no reliable feedback on their decision-making performance,²⁰² and our adversarial system is premised on the parties providing all relevant arguments, evidence, and analysis to a judicial “umpire,” an assumption that is untenable in the minor case context, especially when litigants proceed *pro se*.²⁰³

Given their volume, minor cases usually take—and on average must only take—seconds to resolve. Accordingly, to be useful, relevant information must be made immediately available to a decision maker. An optimal system must also deliver information to a decision maker as an easy-to-absorb concoction. OCR systems have the capacity to aggregate, distill, and then inject potent information into the decision-making process. Accurate decisions require reliable, representative data and easy-to-digest ways of visualizing and understanding that data. Unlike decisions made by doctors, bankers, and engineers, who often rely on systematic data analysis, the exercise of judicial and prosecutorial discretion *at present* is more attuned to idiosyncratic and anecdotal information, often colored by first-hand experience or courthouse norms.²⁰⁴ Not surprisingly, court administrators, judges, and court experts all agree that courts should devise ways to use data more intensively to inform their practices.²⁰⁵

Online resolution systems might improve judicial decision making through better data practices and tools in at least two ways. First, because law enforcement officers issue citizens so many citations and charge them with so many misdemeanors, the resolution of routine, minor cases offers a data-rich environment in which simple comparisons to population averages might be very informative. For instance, although many judges have access to driving records, they may have no idea how a litigant’s record compares to other drivers in the county, state, etc. Instead, they must ad-

201. Miller, *supra* note 199, at 1366–70.

202. Chris Guthrie et al., *Blinking on the Bench: How Judges Decide Cases*, 93 CORNELL L. REV. 1, 32 (2007).

203. Marvin E. Frankel, *The Search for Truth: An Umpireal View*, 123 U. PA. L. REV. 1031, 1038 (1975) (“To begin with, we leave most of the investigatory work to paid partisans, which is scarcely a guarantee of thorough and detached exploration. Our courts wait passively for what the parties will present, almost never knowing—often not suspecting—what the parties have chosen not to present.”).

204. *Cf.* Miller, *supra* note 199, at 1366–70.

205. See, e.g., *Statistics*, MICH. CTS., <http://courts.mi.gov/education/stats/pages/default.aspx> (last visited Jan. 24, 2016) (explaining that Michigan’s State Court Administrative Office is increasing its use of data to measure court activities); Jon B. Gould et al., *Overwhelming Evidence*, 95 JUDICATURE 61, 63 (2011) (“There is a need to produce a solid base of knowledge, practices, and professionals necessary for evidence-based management.”).

vert to some sort of norm—such as, two tickets in two years is a “bad” record. But how bad is it? When a litigant’s relative position is important to the judge’s decision-making calculus (i.e., whether this driver is above or below average), OCR systems can embed these comparisons into the decision-making interface.²⁰⁶

Second, these systems can be designed to give judges and other decision makers the benefit of predictive algorithms and other prediction-oriented methodologies.²⁰⁷ Patterns in data can reveal correlations between litigant characteristics and legally relevant outcomes, and judges could choose to use these relationships to inform their thinking. For example, particular driving records may be more likely to lead to an accident involving a fatality.²⁰⁸ Presenting this information to a judge in an easy-to-digest format—perhaps even simply giving the judge a litigant rating of “high,” “medium,” or “low” risk—would transform the way that most judges do their jobs today.²⁰⁹

With access to data assembled by government or industry as well as information collected from the platform itself, an OCR system can supply novel insights about litigant behavior. These lessons can be used to further refine and improve the technology. Data-driven insights can be integrated into the system in two principal ways. First, they can be applied at the initial system setup stage in the form of suggestions as to case-type coverage, resolution options, and decision rules that will be most helpful to the

206. One extension: judges are also tasked with evaluating an indigent litigant’s ability to pay a fine. However, in practice, judges are ill-equipped to evaluate an individual’s ability to pay and end up relying on proxies such as what the individual is wearing or whether she has had a manicure. See *ABILITY TO PAY WORKGROUP*, *supra* note 151, at 15–16. An online system could, if appropriately configured, allow for income verification through additional data collection and analysis (either by evaluating submitted documents or by linking to external financial data).

207. See, e.g., Richard A. Berk & Justin Bleich, *Statistical Procedures for Forecasting Criminal Behavior: A Comparative Assessment*, 12 *CRIMINOLOGY & PUB. POL’Y* 513, 519–27 (2013) (explaining a basic approach to forecasting recidivism based on prior arrests); Richard Berk & Jordan Hyatt, *Machine Learning Forecasts of Risk to Inform Sentencing Decisions*, 27 *FED. SENT’G REP.* 222 (2015); Jon Kleinberg et al., *Prediction Policy Problems*, 105 *AM. ECON. REV.* 491, 492–93 (2015) (explaining that prediction problems are better solved with machine learning techniques than by standard empirical methods).

208. See Lior Jacob Strahilevitz, “How’s My Driving?” *For Everyone (And Everything)*, 81 *N.Y.U. L. REV.* 1699, 1725 n.105 (2006) (suggesting that, if “How’s My Driving” scores correlate with accident rates, making these scores admissible at trial could increase court efficacy). *But see* Baojin Wang et al., *Safety in the Road Environment: A Driver Behavioural Response Perspective*, 29 *TRANSP.* 253, 255 (2006) (explaining that past accident rates can only have predictive value in a vacuum, without taking into account factors like unpredictability on the road and learning from experience).

209. See, e.g., CYNTHIA A. MAMALIAN, *STATE OF THE SCIENCE OF PRETRIAL RISK ASSESSMENT* 18 (2011) (reporting that, to help inform bail decisions, many agencies have developed objective classification criteria to rate a defendant’s perceived level of risk upon release and the likelihood of his appearing for court proceedings).

court and society.²¹⁰ This approach may also help nudge the judicial system towards greater standardization, consistency, and efficacy.²¹¹ Second, data analysis can furnish judges and prosecutors reviewing litigant requests with guidance as to what other information might be useful to collect. This iterative process might well lead to a better understanding of the application of laws and of litigant tendencies and to an increasingly fairer standard of justice.

Crucially, OCR systems can automatically do the work of sifting through a litigant's information and case history to marshal known trends to improve prosecutorial and judicial decision making. Because OCR technology does not suffer from the limitations of in-person process, it can make the application of evidence-based practices unobtrusive to the point of seamlessness.

Better information may also succeed at overcoming the notion among some that justice is just "what the judge ate for breakfast."²¹² An OCR system can help judges remain consistent, even over the course of the day, through the use of reminders, which may help anchor decisions and prevent a judge's thinking process from changing from moment to moment. Indeed, at least one study has shown that a judge's parole decisions are strongly correlated with how recently that judge had taken a break.²¹³ If judges' inclinations and whims fluctuate over time, presenting them with what they do on average may dampen these fluctuations.²¹⁴

Sometimes, however, judges may have access to too much information—such as a litigant's race or appearance—information that, despite being irrelevant to the question at hand, might nevertheless reduce a decision's accuracy and compromise procedural fairness in a given case.²¹⁵ The common perception of unfair or unequal treatment "is the single most important source of popular dissatisfaction with the American legal

210. Cf. Jennifer Welch, *Defending Against Deportation: Equipping Public Defenders to Represent Noncitizens Effectively*, 92 CAL. L. REV. 541, 577 (2004) (describing initial procedures that public defenders can and should follow to ascertain a client's citizenship status and better inform representation).

211. Standardization, consistency, and efficiency are important judicial values, as exemplified in the federal rules. See, e.g., FED. R. CIV. P. 1 (stating that the purposes of the Federal Rules of Civil Procedure are to secure "the just, speedy, and inexpensive determination of every action and proceeding"); FED. R. EVID. 102 (The "rules should be construed so as to administer every proceeding fairly, eliminate unjustifiable expense and delay . . .").

212. See Kozinski, *supra* note 145.

213. Shai Danziger et al., *Extraneous Factors in Judicial Decisions*, 108 PROC. NAT'L ACAD. SCI. 6889, 6892 (2011).

214. See Chris Guthrie et al., *Inside the Judicial Mind*, 86 CORNELL L. REV. 777, 800 (2001) (noting that, "[b]ecause courts usually evaluate events after the fact, they are vulnerable to the hindsight bias," which "is a threat to accurate determinations in many areas of law").

215. See Peters, *supra* note 31, at 3 (explaining that too much information can get in the way of effective decision making, even when there is no indication that this information would cause bias).

system.”²¹⁶ Perhaps unexpectedly, OCR systems have the potential to assist courts in overcoming discrimination—actual and perceived, whether explicit or implicit—in the operation and outcomes of court proceedings, at least in the context of minor cases, where there is little or no value in face-to-face interactions.

Judges ideally look only at the facts relevant to the laws that govern the cases before them. But it is difficult and cognitively exhausting for a judge in a courthouse to completely separate a case from the individuals standing before the bench.²¹⁷ In minor, relatively simple cases like traffic disputes, civil infractions, and low-level misdemeanors,²¹⁸ an OCR system may be able to provide a judge with all the information that he needs to resolve the case accurately, while obscuring information that is useless or that might introduce impermissible bias into the decision-making process.²¹⁹ If the system omits details like race and gender, judges will be unable to consider those factors in making their decisions.

Conversely, if individuals know that a judge cannot detect whether a litigant is a member of a minority group, it may promote their faith in the courts and in the idea that all people are equal in the eyes of the law. Some litigants may be concerned, of course, that even though the judge cannot see them, the judge (or a clerk) might still discern information like race, gender, or nationality from other information like names on files or forms. However, in many cases, it would not be difficult for the system to obscure names and identifying information from the judicial officer’s display.

It is important to stress that biases are often implicit; such tendencies can operate on a judge’s decision making even if the judge is struggling mightily to ignore the trait.²²⁰ Attempting to make oneself conscious of how implicit biases function—e.g., by attending cultural sensitivity training²²¹—may help judges identify when and how their decision making

216. Jason Sunshine & Tom R. Tyler, *The Role of Procedural Justice and Legitimacy in Shaping Public Support for Policing*, 37 LAW & SOC’Y REV. 513, 517 (2003).

217. To resolve most cases, judges usually do not need to know litigant demographics, but unfortunately, they do often need to interact with litigants face-to-face—to evaluate credibility, for instance.

218. At least initially, courts will almost surely use OCR systems to help resolve only (or predominantly) minor cases (from the judge’s perspective), and yet more concern about implicit biases may be warranted in these proceedings than in more serious court proceedings. See Greenwald & Krieger, *supra* note 32, at 962 (suggesting that, while implicit biases have less effect in decisions that require more deliberative effort, simply being “more deliberative” is not enough to overcome these biases).

219. For example, in the traffic ticket context, an OCR system could be designed to show the judge or prosecutor the litigant’s relevant driving history, but it need not display the litigant’s age, gender, race, or even name, assuming that none of these facts are legally operative.

220. See Greenwald & Krieger, *supra* note 32, at 951 (reporting that individuals often have biases that differ from endorsed beliefs and that these beliefs are thus particularly difficult to overcome).

221. See Kathleen E. Mahoney, *The Myth of Judicial Neutrality: The Role of Judicial Education in the Fair Administration of Justice*, 32 WILLAMETTE L. REV. 785, 813 (1996) (asserting that “no

might go wrong, but it remains extremely difficult to ensure that judges view all people as the same before the law.²²² For example, studies have shown that judges who were privy to inadmissible information (such as settlement offers, a victim's sexual history, or remedial measures) rendered different verdict preferences than judges who did not have access to that information and that judges who were told the cost of incarceration recommended shorter sentences than those who were not.²²³ Judges do not appear to be able to overcome the cognitive biases that afflict the rest of society's members.

CONCLUSION

Online case resolution systems are on the horizon, and they have the potential to transform how our courts operate. We should welcome them. If designed and implemented well, OCR systems are likely to dramatically reduce access barriers and improve decision making in our justice system. In the near term, these systems are likely to make the biggest splash in the context of minor cases—civil infractions, minor warrants, and low-level misdemeanors. This may seem like small beer, but these cases are extremely numerous and systemically important, especially for the poor. Importantly, OCR systems are likely to make our legal system fairer. Access barriers, even in minor cases, disproportionately affect the socioeconomically disadvantaged and minorities in particular. So, even as online resolution systems limit the extent of implicit biases in the judicial resolution of minor cases, the reduction of barriers to justice will work to the particular benefit of those most in need.

amount of cultural sensitivity training” will cure the “thick layer of racism and sexism that pervades the administration of justice”).

222. A task force in Illinois recently found that “African-American and Hispanic drivers paid disproportionately higher fines per traffic stop.” CITY OF URBANA TRAFFIC STOP DATA TASK FORCE, FINAL REPORT OF THE URBANA TRAFFIC STOP DATA TASK FORCE 6 (2015).

223. E.g., Guthrie, *supra* note 202; Jeffrey J. Rachlinski et al., *Altering Attention in Adjudication*, 60 UCLA L. REV. 1586, 1589 (2013); Andrew J. Wistrich et al., *Can Judges Ignore Inadmissible Information? The Difficulty of Deliberately Disregarding*, 153 U. PA. L. REV. 1251, 1329–31 (2005).