In his classic criminal procedure article from 1964, *Herbert Packer* highlighted the persistent tension between two central values of criminal procedure — fairness and efficiency. He constructed two models of the criminal process to illustrate this tension: the Crime Control Model, which values speed, finality, and minimizing costs; and the Due Process Model, which emphasizes procedural fairness as its primary concern. *Packer* explained that these models and the different values they represent “compete for attention in the operation of the criminal process.” *Packer* emphasized that his framework reflected the political and legal landscape of the United States in the mid-twentieth century and disclaimed any broader geographic or temporal relevance.

While *Packer* was modest in describing the reach of his model, in fact, the tension he identified between fairness and efficiency (or crime control and due process) can be observed today in a range of criminal justice systems across the world — from adversarial to inquisitorial to mixed. As this chapter explains, the global spread of plea bargaining and other forms of abbreviated and consensual proceedings has magnified this tension. Likewise, technological developments, from digital evidence to electronic case management systems and online consensual proceedings, are increasingly influencing the balance between efficiency and fairness in the criminal process. Legal systems around the world must use and regulate these technologies carefully to ensure that they do not compromise fairness in the quest for greater efficiency.

1 Amy Abboud Ware Centennial Professor in Criminal Law, SMU Dedman School of Law. I thank Thomas Weigend for being a wonderful mentor, co-author, and friend and for inspiring us to think critically about efficiency, fairness, and accuracy in criminal procedure.
3 *Id.* at 7.
I. Values of the Criminal Process

At the outset, it is important to define what we mean by efficiency and fairness and why the criminal process cherishes these values. Efficiency allows a criminal justice system to dispose of cases quickly and at a low cost. We prize efficiency not simply because it saves resources, but because it can help ensure that the aims of criminal law — retribution, deterrence, and rehabilitation — are achieved. If a state uses its resources wisely, it can prosecute more cases with the same resources and thus enforce the criminal law more effectively. For this to occur, however, it is important that efficiency does not come at the expense of accuracy, or the criminal justice system will not be able to accomplish its broader goals. It would do little good for a criminal justice system to resolve cases more speedily and cheaply if it does so with a high rate of errors. As Thomas Weigend has argued, “Knowing exactly what has happened, who the culprit is, and why he committed the offense, is a necessary prerequisite for any attempt to reestablish social peace through justice.”

Yet it is difficult to achieve both efficiency and accuracy in contemporary criminal justice systems. Modern societies increasingly use criminal sanctions to deal with social problems, bringing more cases into the system. At the same time, they often fail to allocate additional resources to prosecute these cases. Given this political reality, even a very efficient system will find it difficult to resolve cases accurately and to promote the goals of criminal law.

Making matters more complicated, modern liberal societies do not care solely about enforcing the criminal law effectively. Rather, they have demonstrated a level of commitment to procedural fairness. This is so in part because fair procedure can help produce reliable factfinding and reduce the risk of wrongful convictions. It does so by insisting on additional checks on the results of the investigation and adjudication of criminal charges at each stage of the process. These checks increase the odds that er-

5 See Packer, supra note 2, at 10.
6 See id.
7 See id. at 13-22 (discussing the Due Process model); see also U.S. Constitution, amendments V, XIV (containing a “Due Process Clause,” which provides that neither the federal nor state governments shall deprive persons “of life, liberty or property without due process of law”); European Convention on Human Rights art. 6 (providing a range of fair trial rights).
rors in human perception and judgment would be detected and corrected.\(^8\) While procedural safeguards may slow down the process, they increase its integrity. For example, formal judicial review of plea bargaining takes additional time, but helps ensure that guilty pleas are based on a solid factual basis and that innocent people are not pressured into pleading guilty.\(^9\) Likewise, placing limits on the interrogation tactics may force officers to spend more time investigating a case, but it also helps prevent coerced — and thus sometimes false — confessions.\(^10\) In many ways, therefore, a procedurally fair criminal process also facilitates the search for the truth in criminal cases, even if it might at times be less efficient.

But the production of reliable evidence is not the only reason for supporting fair trial principles, as fairness can come into conflict with the search for the truth (as it does, for example, when courts exclude reliable evidence that was obtained in violation of the law).\(^11\) Rather, fair trial principles are also cherished because they help vindicate fundamental individual rights such as the right to privacy and the right to liberty. Even when these individual rights at times conflict with efficiency or the pursuit of truth, therefore, modern criminal justice systems have tolerated some reduction in efficiency and accuracy because of the deeper commitment to individual rights and liberties, which are seen as indispensable to human flourishing in modern liberal societies.\(^12\)

### II. Fairness, Efficiency, and Truthseeking in Contemporary Criminal Procedure: The Case of Plea Bargaining

A main question for the present and future of criminal procedure is whether the liberal tolerance for procedural fairness is waning and efficiency becoming a more dominant value. Professor Kudlich suggests that the most recent trend in criminal justice in Germany has been toward a

\(^8\) See Packer, supra note 2, at 14.


\(^10\) Turner, in Gless/Richter (eds.): Do Exclusionary Rules Ensure a Fair Trial? A Comparative Perspective on Evidentiary Rules, 2019, at 93, 100, 102.


greater emphasis on cost savings and speed, even at the expense of procedural fairness. This is also the case in the United States, where over 90% of criminal cases are resolved through plea bargaining, without the formality and adversarial testing of a criminal trial. Judging by the spread of forms of plea bargaining across the globe, a similar trend toward efficiency can be observed in many other jurisdictions. In a recent study of the criminal procedures of ninety countries, the organization Fair Trials found that sixty-six authorized some type of “trial waiver” practice. In 1990, only 19 of those countries had such practices.

The problem is that the speed and cost savings that result from negotiated trial waivers may come at the cost of accuracy and fairness. Negotiated criminal cases are often resolved after only perfunctory investigations and thin judicial review of the “bargain” and the associated guilty plea. This increases the risk that innocent defendants may be convicted, and it also frequently results in charges and sentences that do not adequately reflect the crime committed.

Some defenders of the practice argue that while plea bargaining may compromise accuracy in particular cases, it provides a net gain for truth-seeking in the criminal justice system. The argument is that, by freeing

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13 Kudlich, in this volume.
14 Gramlich, Pew Res. Ctr., June 11, 2019, at https://www.pewresearch.org/fact-tank/2019/06/11/only-2-of-federal-criminal-defendants-go-to-trial-and-most-who-do-are-found-guilty/, access 16.07.2019 (noting that only 2% of federal defendants went to trial, while 3% or less of state defendants went to trial; 90% of federal defendants pleaded guilty, and 8% had their cases dismissed).
16 Id. at 4.
17 Id.
18 See, e.g., id. at 9, 16, 39, 42, 54 (noting concerns that trial waiver procedures compromise factfinding and that judicial scrutiny of the facts in a number of trial waiver systems is not sufficiently rigorous); Turner, supra note 11, at 45-47; Weigend, in Jackson et al. (eds.): Crime, Procedure and Evidence in a Comparative and International Context, 2008, at 39, 53, 55-56.
19 National Registry of Exonerations, Exoneration Detail List, 2017; Peay/Player, 81 Mod. L. Rev. 2018, at 929, 938 (noting that in England and Wales, 26.7% of those who applied for review of their conviction by the Criminal Case Review Commission over the previous three years had entered a guilty plea); Altenhain et al., Die Praxis der Absprachen, 2013, at 134 (finding that more than half of German defense attorneys surveyed in a 2012 study believed that at least one of their clients had falsely admitted guilt in exchange for a lenient sentence).
20 Turner, supra note 11, at 45.
up resources to solve more cases, even at the cost of some inaccuracies in individual cases, plea bargaining ultimately delivers greater benefits for truthseeking at the systemic level.\textsuperscript{22} But this type of utilitarian analysis stands in tension with the right to a fair trial in individual cases. And while it is very difficult to assess empirically the aggregate benefit to the system, the costs to accuracy in individual cases have been documented and range from wrongful convictions to unduly lenient charges and sentences.\textsuperscript{23} It remains to be seen whether stricter regulation of plea bargaining — as scholars have advocated and some systems have introduced — can soften the tension between, on the one hand, efficiency, and on the other, accuracy and fairness.\textsuperscript{24}

\textbf{III. Efficiency, Fairness, Truthseeking, and the Future of Criminal Procedure: The Effects of New Technology}

How is criminal procedure likely to balance efficiency, truth-seeking, and fairness in the future? Beyond the spread of plea bargaining, rapid advances in technology are also bound to influence the answer to this question. In many ways, technological advances — especially new surveillance mechanisms and big data mining techniques — will expedite the investigation and disposition of cases and do so with greater accuracy. On the other hand, technology such as encryption and the dark web will also permit people to evade law enforcement scrutiny.\textsuperscript{25} Whether technological advances will move us to an Orwellian state of near-total surveillance or whether privacy-enhancing technologies and thoughtful regulation would prevent this from occurring remains a subject of debate, which is too complex to address adequately in this chapter. Instead, this part will focus on a narrower question, examining how advances in digital technology might influence fairness and efficiency in the prosecution and adjudication of criminal cases.

\textsuperscript{22} Damaška, 49 Hastings L.J. 1997-1998, at 289; Turner, supra note 11, at 48.
\textsuperscript{23} See supra notes 18-19 and accompanying text.
\textsuperscript{24} Alschuler, 51 Duq. L. Rev. 2013, at 673, 705; Covey, 82 Tul. L. Rev. 2008, at 1237, 1245; Langer, 33 Am. J. Crim. L. 2006, at 223, 224-28; Turner/Weigend, in Ambos/Duff (eds.): Criminal Law and Justice, forthcoming 2019; Turner, supra note 11, at 48 (arguing that prohibiting sizeable plea discounts, strengthening judicial oversight, and enhancing transparency can reduce the tension); Weigend/Turner, 15 German L.J. 2014, at 81.
\textsuperscript{25} See, e.g., Gray, 72 SMU L. Rev. 2019, at 621, 621-27.
One important technological challenge for the future of criminal procedure is that digital evidence in criminal cases is growing exponentially. Individuals and businesses are routinely relying on electronic devices in their daily activities, leaving volumes of digital data for law enforcement to mine. Likewise, more and more crimes, from theft to drug trafficking to child pornography, are committed in cyberspace, creating digital records to be used in an eventual prosecution. Finally, law enforcement is itself proactively using advanced surveillance technology, generating additional digital evidence.

As criminal cases begin to feature terabytes of data on a regular basis, the tension between efficiency and fairness is likely to grow, at least in the short to medium term. Prosecutors and defense attorneys will find it increasingly difficult to sift through the evidence to ensure that they have analyzed all relevant items. While prosecutors tend to have more resources, including specialized investigators to categorize and analyze digital evidence, this is rarely the case for defense attorneys. As a result, digital evidence is likely to exacerbate the inequality of arms in criminal cases. In the United States, defense attorneys in complex federal cases have already expressed concerns that large volumes of digital files in different formats are dumped on them by the prosecution without clear organization or categorization. The massive amount of digital evidence means that defense attorneys may have to forego reviewing certain relevant evidence in the case — including potentially exculpatory evidence.

Over time, technology will likely be developed to help lawyers search and review digital evidence more efficiently. In civil cases featuring wealthy corporations, some law firms have already begun using so-called predictive coding technology, which reviews digital files more quickly and at a lesser cost than human readers. Notably, the efficiency does not come at the cost of inaccuracy — when such technology is used properly, with the assistance of trained lawyers, it can achieve accuracy that is the
same or better than human review of digital documents. But such technology is still rare even in civil cases, and it will be a while before it becomes a feature of criminal cases. Likewise, there is still no widely available technology for an automated search of video and audio files — such files, typically generated by wiretaps and video surveillance, still require laborious manual review. At least in the near future, therefore, the growth of digital evidence will continue to impose burdens on both the efficiency and the fairness of criminal adjudication, as it exacerbates the existing asymmetry of resources between defense attorneys and prosecutors.

Another way in which new technology may compromise fairness for efficiency in criminal procedure is with the introduction of online proceedings. England recently adopted an online guilty plea procedure for certain minor offenses, such as traffic violations and fare evasion. Under this procedure, defendants can enter a plea online from home without consulting an attorney or the clerk of the court. Such automated procedures save resources for the court, the prosecution, and the defendant, but they raise concerns that some defendants may not fully understand the nature and consequences of the guilty pleas they are entering or defenses they may be forfeiting. A number of defendants who have pleaded guilty online have already subsequently sought “to reopen the plea once they have realised or

34 Predictive coding uses artificial intelligence to find relevant documents more accurately than keyword searching. The process begins by human review of a sample set of documents. The computer then reviews the initial sample set of documents, identifies common features, and looks for similar documents in the remaining set. At that point, an attorney reviews the results of the computerized search and adjusts the search criteria as needed. Testing and improving results at each step of the process, predictive coding can produce an accuracy level similar to that of manual review of voluminous evidence, but at a lesser cost and faster speed. Id. (citing Imwinkelried/Blumoff, Tactics for Attorney Seeking Production, Pretrial Discovery Strategy & Tactics, 2017, § 9-13).

35 Id. at 254.


37 Id. at 254.

been advised that they have a defence or that the initial charge is based on inaccurate information.  

While new technology may compromise fairness for efficiency in the context of such online consensual proceedings, in other ways, advanced technology could help increase fairness in ordinary plea bargaining. For example, digital technology that allows better recording of plea offers and plea agreements can bring greater transparency to backroom negotiations. Such transparency — which permits better judicial review of plea deals and more effective defense representation — can in turn promote both fairness and accuracy in the process.

Plea deals today are typically negotiated out of the public eye — in the courtroom hallway, in the office, or on the phone. Victims and members of the public are excluded, and the defendant himself is often absent. At least in the United States, plea offers are still rarely reduced to writing, and even the final plea agreements are not always written or placed on the record. Plea hearings are recorded, but they tend to be brisk affairs that often fail to reveal the details of the plea agreement.

In Germany, the legislature and the Constitutional Court have placed more significant demands on the participants in negotiations to ensure some documentation and transparency of the key contents and outcomes of the negotiations. But even in Germany, empirical studies have found that the documentation requirement is not always strictly followed in practice.

The lack of transparency in plea bargaining frustrates the ability of the court, the defense, and ultimately, the public to assess whether plea deals are reasonable. It can provide cover for deals tarnished by incompetence, oversight, or partiality.

Developments in technology can help reverse this trend. The growing availability of digital platforms and the rapidly decreasing costs of digital storage mean that records of plea offers and plea agreements can be much

39 Id.
41 Id. (citing Bibas, The Machinery of Criminal Justice, 2012, at 34-35).
42 Id.
43 Id.
44 StPO § 243 (4), 273 (1a), 267 (3) 5th sent.; Judgment of the Federal Constitutional Court of March 19, 2013, BVerfG, 2 BvR 2628/10, BvR 2883/10, 2 BvR 2155/11, paras. 80-90, 115.
more easily maintained.\textsuperscript{46} Such platforms allow prosecutors to type a plea offer into a digital file and share it with the defense with the click of a button. They also keep the records of the offers in a database, allowing both prosecutors and defense attorneys to review “plea precedents” and assess the fairness of offers against that background.\textsuperscript{47} Databases permit prosecutor supervisors to monitor plea practices for consistency with the law and office policy, and the plea records they contain can facilitate more informed judicial review.\textsuperscript{48} Fair trial principles require that “the content of [any plea] bargain and the fairness of the manner in which it had been reached between the parties be subjected to sufficient judicial review.”\textsuperscript{49} Documentation of plea bargains enables adequate review by the court in the interests of fairness.\textsuperscript{50}

IV. Conclusion

As a growing number of countries around the world adopt alternatives to the traditional criminal trial in the name of efficiency, questions arise whether these new forms of adjudication unduly compromise fairness and accuracy. Criminal justice systems must address these concerns and regulate trial waiver mechanisms to ensure that they do not coerce innocent defendants to admit guilt and do not distort the facts in the case. New technology can help with these efforts, as it can bring greater transparency of the process and promote consistency and fair treatment in plea bargaining.

In certain respects, however, new technology may also heighten the tension between fairness and efficiency in criminal procedure. The introduction of online guilty plea proceedings may save resources of the judicial system, but it also increases the risk of uninformed and potentially inaccurate guilty pleas. Likewise, the growth of digital evidence is beginning to strain the capacities of prosecutors and defense attorneys as they struggle to review terabytes of digital files. The mounting challenges of processing vo-

\textsuperscript{46} For an example of a digital case management platform that permits prosecutors to enter plea offers into the case file, see TechShare.Prosecutor, at https://cuc.org/techshareprosecutor (access 16.07.2019).

\textsuperscript{47} Turner, supra note 40.

\textsuperscript{48} Id.

\textsuperscript{49} Natsvlishvili v. Georgia, ECtHR, No. 9043/05, Judgment of 29 Apr. 2014, § 92.

\textsuperscript{50} Id. § 94. The court explained that such a record would make it “possible to have the exact terms of the agreement, as well as of the preceding negotiations, set out for judicial review in a clear and incontrovertible manner.”
luminous digital evidence raises concerns about the accuracy and fairness of dispositions in such cases.

In short, technological developments will bring significant changes to the way in which criminal cases are processed, but the tension between the values of the Due Process Model and the Crime Control Model that Herbert Packer identified more than half a century ago is likely to remain. Courts, legislators, and the public must remain vigilant to ensure that technology does not sacrifice accuracy and fairness at the altar of efficiency and is instead used to advance all three central goals of criminal procedure.