BIG DATA AND *BRADY* DISCLOSURES

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Data makes the world go round. Now more than ever, routine police work depends on the collection and analysis of digital information. Law enforcement agencies possess vast sums of intel on who we are, where we go, and what we do. The proliferation of digital technology has transformed federal criminal procedure—from how police investigate crimes to how prosecutors prove them at trial. Courts and commentators have written much about the first part, but less so about the second. Together, they represent two sides of the same problem: constitutional doctrine lagging behind new technology, leading to suboptimal constraints on law enforcement conduct.

This Note explores the effects of digital technology on the nature and scope of federal prosecutors' disclosure obligations under Brady v. Maryland. *As police pass along more data to prosecutors—usually terabytes at a time—prosecutors face the difficult task of sifting through mountains of evidence to determine what is exculpatory or otherwise favorable to the defense. Often, prosecutors turn over their entire case file, knowing full well that defense counsel will fare no better. This state of affairs puts our adversarial system on shaky ground. This Note urges district courts to exercise greater oversight of the discovery process, requiring prosecutors to take reasonable precautions so exculpatory evidence comes to light.*

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Introduction

We live in the information age. Every time someone texts a friend, sells a stock, or robs a bank, they leave behind a digital trail of ones and zeros. This data sits in various storage facilities, and then gets sold to third parties or subpoenaed by law enforcement. Nobody has any choice over the matter. So "seismic shifts in digital technology" trigger much anxiety among criminals and non-criminals alike.[1] We worry for good reason. Our cellphones and computers are repositories of sensitive information. Any cursory inspection will yield "a wealth of detail about [our] familial, political, professional, religious, and sexual associations,"[2] which "form[s] a revealing montage of [our] life."[3] Sensible people wish to keep this information to themselves. This is doubly true for those with something to hide.

Law enforcement agencies seek access to these treasure troves of information. More data means more productive investigations, and thus more criminals behind bars. But the Supreme Court has repeatedly acknowledged problems posed by "the accumulation of vast amounts of personal information in computerized data banks or other massive government files."[4] Here is where the Bill of Rights comes into play. On the front end, the Fourth Amendment proscribes "unreasonable" intrusions upon constitutionally protected expectations of privacy.[5] On the back end, the Due Process Clause requires the Government to turn over the fruits of its investigation, to the extent they are exculpatory or otherwise helpful for the defense.[6] This Note deals with the latter. My concern is not privacy but the opposite—not what defendants hope to suppress but what prosecutors fail to disclose. I am referring to the vast quantity of information that law enforcement has at its disposal, and its effects on federal criminal adjudication.[7]

Police run on intelligence. They generate information themselves and obtain information generated by others. The New York Police Department, for instance, touts its "transformative technological

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1 Carpenter v. United States, 585 U.S. 296, 313 (2018).

2 United States v. Jones, 565 U.S. 400, 415 (2012) (Sotomayor, J., concurring).

3 Riley v. California, 573 U.S. 373, 396 (2014).

4 Whalen v. Roe, 429 U.S. 589, 605 (1977); *see also* U.S. Dep't of Just. v. Reps. Comm. for Freedom of Press, 489 U.S. 749, 763 (1989) ("[B]oth the common law and the literal understanding of privacy encompasses the individual's control of information concerning his or her person.").

5 Katz v. United States, 389 U.S. 347, 360 (1967) (Harlan, J., concurring).

6 Brady v. Maryland, 373 U.S. 83, 87 (1963).

7 This Note focuses on the work of federal prosecutors. But due process doctrine—whether under the Fifth or Fourteenth Amendment—makes no distinction between local, state, or federal actors.

change."[8] Built by Microsoft, the NYPD's "Domain Awareness System" collects large sums of data—on where we live, what we drive, what firearms we own, and whether, when, and why we have been arrested.[9] The NYPD has also installed tens of thousands of surveillance cameras, many outfitted with facial recognition software[10] and microphones,[11] to detect who we are and track where we go. Police outsource this surveillance work, too. Subpoenas grant access to near infinite amounts of information held by cellular companies, social media platforms, internet providers, and more. Police also purchase data in the marketplace,[12] and draw from shared databases run by other government agencies.[13]

Police and prosecutors work hand in hand. "Big data" investigations[14] open the door for prosecutors to mix and match different types of evidence. Few federal cases today hinge on the credibility of the testifying cop or cooperator.[15] Social media posts may corroborate

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[8] N.Y.C. Police Dep't, *Technology*, https://www.nyc.gov/site/nypd/about/about-nypd/equipment-tech/technology.page [https://perma.cc/BVJ7-59DQ].

[9] N.Y.C. Police Dep't, Domain Awareness System: Impact and Use Policy 3 (2021), https://www.nyc.gov/assets/nypd/downloads/pdf/public_information/post-final/domain-awareness-system-das-nypd-impact-and-use-policy_4.9.21_final.pdf [https://perma.cc/P2JB-JXBT] (explaining that the Domain Awareness System allows police officers to access "real-time 911 information, past history of call locations, crime complaint reports, arrest reports, summonses, [and] NYPD arrest and warrant history").

[10] *See* Sidney Fussell, *The All-Seeing Eyes of New York's 15,000 Surveillance Cameras*, Wired (June 3, 2021), https://www.wired.com/story/all-seeing-eyes-new-york-15000-surveillance-cameras [https://perma.cc/TN2T-7N7M] (reporting that 15,280 cameras feed NYPD's facial recognition software).

[11] *See* N.Y.C. Police Dep't, ShotSpotter: Impact and Use Policy 3 (2021) https://www.nyc.gov/assets/nypd/downloads/pdf/public_information/post-final/shotspotter-nypd-impact-and-use-policy_4.9.21_final.pdf [https://perma.cc/TP9X-QLCT] (describing how the NYPD's gunshot detection system operates via microphones placed in public locations).

[12] *See* Letter from J. Russell George, Treas. Inspector Gen. for Tax Admin., to Ron Wyden and Elizabeth Warren, U.S. Senate (Feb. 28, 2021), https://s.wsj.net/public/resources/documents/Response.pdf [https://perma.cc/H8HQ-6LFC] (discussing the IRS's purchase and use cellphone location data from commercial databases); Byron Tau & Michelle Hackman, *Federal Agencies Use Cellphone Location Data for Immigration Enforcement*, Wall St. J. (Feb. 7, 2020), https://www.wsj.com/articles/federal-agencies-use-cellphone-location-data-for-immigration-enforcement [https://perma.cc/QZS5-4ERP] (discussing U.S. Immigration and Customs Enforcement's use of commercial cellphone location data to track unlawfully present noncitizens).

[13] *See* Fed. Bureau Investigation, CJIS Division 2022 Year in Review 4–5, 8–9 (2022), https://le.fbi.gov/file-repository/2022-cjis-year-in-review-010323.pdf [https://perma.cc/MA6H-G9FJ] (discussing the National Data Exchange and the National Crime Information Center).

[14] By "big data," I mean the collection and analysis of large volumes of digital information. *See* Neil M. Richards, *The Dangers of Surveillance*, 126 Harv. L. Rev. 1934, 1939 (2013) ("Big Data is notable not just because of the amount of personal information that can be processed, but because of the ways data in one area can be linked to other areas and analyzed to produce new inferences and findings.").

[15] *See, e.g.*, United States v. Johnson, 529 F.3d 493, 494 (2d Cir. 2008) (upholding conviction "because the evidence of guilt was overwhelming, and the [DEA agent's] improper testimony . . . had no effect on the jury's verdict").

the cooperator's testimony of his prior dealings with the defendant. Emails might explain why numbers on the balance sheet do not add up. Surveillance video can match the ghost gun from an armed robbery to the one seized from the defendant's home. It is not enough for defense counsel to discredit one source of evidence because the prosecution may have proved the underlying facts through multiple. Thus, digital technology has opened new avenues for prosecutors to build and prove their case.

While bad news for most, some defendants stand to gain. More information means more evidence. And evidence can cut both ways. Cellular location data may contradict eyewitness testimony that the defendant visited the stash house at a specific time. The victim's text message that he did not catch a close look at the perpetrator might discredit his positive identification at trial. The cooperator's recorded jail calls perhaps reveal that he exaggerated his story to reach a deal with prosecutors. Such exculpatory and impeachment evidence are useful only to the extent that defense counsel can put them to use. That evidence usually comes into first contact with the Government's investigatory apparatus. Under the Due Process Clause, it is incumbent on the prosecution to turn it over.

"[T]he unique strength of our system of criminal justice" is that we pit the two sides against each other.[16] We trust each to present their strongest case, so neutral decisionmakers will have a complete picture of the issues at stake. "Partisan advocacy," we think, "best promote[s] the ultimate objective that the guilty be convicted and the innocent go free."[17] But partisan advocacy presumes some modicum of fair play. The Due Process Clause sets the baseline. In *Brady v. Maryland*, the Supreme Court held that "suppression by the prosecution of evidence favorable to an accused . . . violates due process where the evidence is material either to guilt or to punishment, irrespective of the[ir] good faith or bad faith . . . ."[18]

This Note advances two principal claims—one descriptive, one normative. First the diagnosis: Technological innovations put *Brady* on shaky ground. Then my prescription: District judges may—and should—compel prosecutors to take reasonable steps beyond the constitutional minimum, so the defense may meaningfully review favorable evidence within the Government's possession.

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[16] United States v. Cronic, 466 U.S. 648, 655 (1984); *see also* Polk Ctny. v. Dodson, 454 U.S. 312, 318 (1981) ("The system assumes that adversarial testing will ultimately advance the public interest in truth and fairness.").

[17] Herring v. New York, 422 U.S. 853, 862 (1975).

[18] 373 U.S. 83, 87 (1963).

I will proceed as follows. Part I spells out what prosecutors must do under *Brady* and surveys the ways in which federal courts have chipped away at those obligations. Part II focuses on the phenomenon of big data investigations, and its distortions on defendants' access to favorable evidence. Part III invites district courts to fill gaps in *Brady* doctrine—to compel prosecutors to perform modest investigative steps to obtain, identify, and disclose exculpatory materials. Federal Rule of Criminal Procedure 16 and inherent judicial powers confer authority for this undertaking. There is no need to wait for Congress to enact new legislation or the Supreme Court to revisit past cases. All that is needed is the exercise of discretion. To be clear, the problems at hand beget no simple solutions. But greater judicial oversight over discovery will go a long way to ensure that defendants receive their fair shake.

I
Brady as Doctrine

The *Brady* inquiry boils down to three steps. To obtain retrial, the defendant must demonstrate that (1) the challenged evidence is "favorable" to their defense, (2) the prosecution "suppressed" it, and (3) suppression resulted in "prejudice."[19] Though federal courts uniformly accept this framework on appellate review, the precise metes and bounds of the prosecution's affirmative pretrial obligations remain unsettled. Digital evidence or not, prosecutors are often uncertain as to what due process demands of them. This Part lays the groundwork.

A. Step One: Favorable Evidence

Brady did not purport to create "broad discovery" obligations.[20] Its mandate only reaches evidence "favorable" to the defendant—that which is "material either to guilt or to punishment."[21] The same goes for impeachment evidence probative of witness discredibility under *Giglio*.[22] The prosecution's obligations generally extend to witnesses'

[19] Strickler v. Greene, 527 U.S. 263, 281–82 (1999). The defendant bears the burden of proof with respect to each element. *See* United States v. King, 628 F.3d 693, 701 (4th Cir. 2011).

[20] United States v. Agurs, 427 U.S. 97, 109 (1976); *see* United States v. LeRoy, 687 F.2d 610, 619 (2d Cir. 1982) ("The rationale underlying *Brady* is not to supply a defendant with all the evidence in the Government's possession which might conceivably assist the preparation of his defense . . . .").

[21] *Brady*, 373 U.S. at 87; *see also* United States v. Alvarez, 86 F.3d 901, 905 (9th Cir. 1996) ("It is not the role of the prosecutor to decide that facially exculpatory evidence need not be turned over because the prosecutor thinks the information is false.").

[22] Giglio v. United States, 405 U.S. 150, 154 (1972).

criminal history, proffer agreement, and guilty plea allocution.[23] Prior inconsistent statements also cast doubt on their truthfulness. Consider the Fifth Circuit's decision in *Campos*.[24] A cooperator testified that he told the defendant "the drugs were in the car."[25] Yet during proffer meetings, his precise words were: "the *merchandise* was in my car."[26] This evidence was favorable because defense counsel "could have impeached [the cooperator's] testimony by showing that he purposely embellished his original story to curry favor with the government."[27] *Brady* obliges prosecutors to keep close track of cooperators' stories over time, and to disclose inconsistencies to the defense.

In *Gray*, Judge Posner differentiated "patent" and "latent" exculpatory evidence.[28] The former refers to evidence which is facially exculpatory, such as a confession by another suspect.[29] The latter "is evidence that requires processing or supplementation to be recognized as exculpatory."[30] *Brady* only requires disclosure of the former: Prosecutors need not turn over facially nonexculpatory evidence that appears exculpatory only upon inferential reasoning.[31]

The Seventh Circuit's decision in *Harris* illustrates the distinction between patent and latent evidence.[32] The prosecution's case-in-chief rested entirely on the victim's positive identification—that someone who fit Harris's profile shot him at a gas station.[33] Ballistics testing later revealed that the bullets fired at the gas station matched those fired at a local restaurant, which was robbed three weeks later.[34] Some other suspect confessed to that later robbery, but prosecutors kept quiet.[35]

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23 United States v. Kojayan, 8 F.3d 1315, 1323 (9th Cir. 1993).

24 United States v. Campos, No. 92–4573, 1994 WL 144866 (5th Cir. Apr. 14, 1994).

25 *Id.* at *2.

26 *Id.* at *12.

27 *Id.* at *14.

28 United States v. Gray, 648 F.3d 562 (7th Cir. 2011).

29 *Id.* at 567.

30 *Id.*

31 *See id.* ("To charge prosecutors with knowledge of exculpatory evidence buried in the computer databases of institutions that collect and store vast amounts of digitized data would be an unreasonable extension of the *Brady* rule."); United States v. Comosona, 848 F.2d 1110, 1115 (10th Cir. 1988) ("If a statement does not contain any expressly exculpatory material, the Government need not produce that statement to the defense. To hold otherwise would impose an insuperable burden on the Government to determine what facially non-exculpatory evidence might possibly be favorable to the accused by inferential reasoning."); Villasana v. Wilhoit, 368 F.3d 976, 979 (8th Cir. 2004) (affirming dismissal of § 1983 action because the undisclosed documents, "[o]n their face . . . , had neither exculpatory nor impeachment value").

32 Harris v. Kuba, 486 F.3d 1010 (7th Cir. 2007).

33 *Id.* at 1012.

34 *Id.* at 1013.

35 *Id.*

The Court nevertheless rejected Harris's *Brady* claim. Evidence that someone else had committed a crime somewhere else did not "directly bear on Harris's guilt."[36]

If the evidence does not exculpate or impeach on its face, prosecutors need not disclose. End of story. They are not obliged to "explore multiple potential inferences to discern whether evidence that is not favorable to a defendant could become favorable" in light of possible defense theories.[37] In a similar vein, prosecutors need not disclose nonexculpatory evidence which may prompt defense counsel to pursue certain leads.[38] The onus of "gather[ing] information or conduct[ing] an investigation on the defendant's behalf" lies squarely with defense counsel.[39]

B. Step Two: Suppression

Brady becomes messier at step two of the inquiry. Nondisclosure runs afoul of the Due Process Clause only if the prosecution "suppresses" evidence favorable to the defense.[40] This framing raises three questions. Do prosecutors have an affirmative duty to seek out favorable evidence, beyond what lies in their case file? Must they disclose evidence which defense counsel may independently obtain? Lastly, can they "suppress" evidence that never came across their desk, because some other agency failed to share it with them?[41] Courts offer varying answers.

1. Affirmative Duty to Search?

Prosecutors must disclose favorable evidence within their "custody, possession, or control" if necessary to avoid prejudice.[42] *Brady* proscribes both inadvertent and willful nondisclosures.[43] Good faith is

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[36] *Id.* at 1016.

[37] *Id.*

[38] *See* United States v. Mullins, 22 F.3d 1365, 1372 (6th Cir. 1994) (explaining that *Brady* does not cover "information relevant to neither guilt nor credibility but which might be of use to the defendant in acquiring exculpatory or impeachment evidence that the defendant had thought was unavailable").

[39] United States v. Tadros, 310 F.3d 999, 1005 (7th Cir. 2002).

[40] *See* Carvajal v. Dominguez, 542 F.3d 561, 566 (7th Cir. 2008) ("[T]he evidence must have been suppressed by the government, either willfully or inadvertently."); United States v. Pelullo, 399 F.3d 197, 204 (3d Cir. 2005) ("Without such suppression, there can be no *Brady* violation, notwithstanding the putative materiality of the subject documents.").

[41] *See* Rachel E. Barkow, *Organizational Guidelines for the Prosecutor's Office*, 31 Cardozo L. Rev. 2089, 2093 (2010) ("[P]rosecutors may simply not know that exculpatory evidence exists because the police never passed along the information.").

[42] Lavallee v. Coplan, 374 F.3d 41, 43 (1st Cir. 2004).

[43] *See* United States v. Agurs, 427 U.S. 97, 110 (1976) ("If the suppression of evidence results in constitutional error, it is because of the character of the evidence, not the character of the prosecutor.").

no defense. That "the prosecution did not recognize the importance of the undisclosed evidence, or would not have withheld the evidence had it been requested" makes no difference in the analysis.[44] At bottom, "[i]t is the prosecutor's duty to examine documents to determine whether they contain *Brady* material[s]," regardless of how much time and resources that examination might entail.[45]

Most jurisdictions do not require the prosecution to "discover information not in its possession or of which it was not aware."[46] Therefore, prosecutors need not serve "as a private investigator and valet for the defendant, gathering evidence and delivering it to opposing counsel."[47] Defendants must resort to self-help to obtain favorable materials which the prosecution team does not possess or know about.

Some jurisdictions impose on prosecutors an affirmative duty to search among files produced in the course of other agencies' unrelated investigations. In *Auten*, the Fifth Circuit held that the prosecution violated *Brady* by failing to inquire into a cooperator's criminal history.[48] To excuse failure to take basic steps to obtain "readily available" impeachment evidence "would [invite and place] a premium on conduct unworthy of representatives of the United States Government."[49]

Some district courts have followed suit, requiring the prosecution to take basic steps to obtain evidence favorable to the defense. Consider *Burnside*, where the prosecution relied on the testimony of cooperating witnesses to prove that defendants trafficked narcotics.[50] Prosecutors suspected that these cooperators attended proffer meetings and court proceedings while high on drugs.[51] But there was no direct evidence of such. The Court found that the prosecution's failure to dig deeper violated *Brady*. Those who "are in the best position to know and learn the true facts" cannot "merely look the other way" when suspicious

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44 McDowell v. Dixon, 858 F.2d 945, 949 (4th Cir. 1988).

45 United States v. Van Brocklin, 115 F.3d 587, 594 (8th Cir. 1997).

46 United States v. Heppner, 519 F.3d 744, 750 (8th Cir. 2008); *see also* United States v. Canniff, 521 F.2d 565, 573 (2d Cir. 1975) ("Clearly the government cannot be required to produce that which it does not control and never possessed or inspected."); Sanchez v. United States, 50 F.3d 1448, 1453 (9th Cir. 1995); United States v. Bender, 304 F.3d 161, 164 (1st Cir. 2002).

47 United States v. Tadros, 310 F.3d 999, 1005 (7th Cir. 2002).

48 United States v. Auten, 632 F.2d 478, 481 (5th Cir. 1980).

49 *Id.*; *see also* United States v. Brooks, 966 F.2d 1500, 1503 (D.C. Cir. 1992) ("[A]n inaccurate conviction based on government failure to turn over an easily turned rock is essentially as offensive as one based on government non-disclosure."); United States v. Joseph, 996 F.2d 36, 40 (3d Cir. 1993) (disallowing "the prosecution to avoid its *Brady* obligations by failing to take the minimal steps necessary to acquire the requested information").

50 United States v. Burnside, 824 F. Supp. 1215, 1219 (N.D. Ill. 1993).

51 *Id.* at 1224–25.

conduct catches their eye.[52] "[F]undamental fairness and due process are easily dashed"[53] if the prosecution may sidestep *Brady* by "keeping itself in ignorance."[54]

2. *Defense Diligence*

Prosecutorial nondisclosure does not amount to suppression "if the defendant either knew, or should have known, of the essential facts permitting him to take advantage of any exculpatory evidence."[55] The scope of this exception varies by circuit. Some demand defendants prove that they "did not possess the evidence and could not obtain it with reasonable diligence."[56] This approach places the onus on defense counsel to inspect public records and interview available witnesses. Failure to do so may invalidate an otherwise viable *Brady* claim. In *Stokes*, the defendant's ex-girlfriend testified that he called her from jail to persuade her "not to talk to law enforcement and to think about taking a trip."[57] He insisted that jail phone records would reveal her fabrication.[58] The Seventh Circuit held that the prosecution's refusal to honor his records request did not violate *Brady*: Those "records were equally available to Mr. Stokes had he issued a subpoena for them."[59] Regardless of how exculpatory that evidence may be, or how convenient it was for prosecutors to turn it over, "the defendants must bear the responsibility for their failure to diligently seek its discovery."[60]

Most circuits take the opposite view. Defense counsel need not "scavenge, guess, search, or seek" out favorable evidence to preserve their *Brady* claim.[61] Their duties extend only to rudimentary "self-help."[62] So they cannot sabotage their client's defense by "turn[ing] a willfully blind eye to available evidence" in hopes of obtaining retrial.[63] Beyond that, however, *Brady* "imposes no duty upon a defendant, who

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52 *Id.* at 1254.

53 *Id.*

54 *Id.* at 1255 (citations omitted).

55 Leka v. Portuondo, 257 F.3d 89, 100 (2d Cir. 2001) (citations omitted).

56 United States v. Rigal, 740 F. App'x 171, 174 (11th Cir. 2018); *see also* Jardine v. Dittmann, 658 F.3d 772, 776 (7th Cir. 2011) ("Suppression, for *Brady* purposes, happens only when prosecutors and police fail to disclose evidence not otherwise available to a reasonably diligent defendant."); Kutzner v. Cockrell, 303 F.3d 333, 336 (5th Cir. 2002) ("When evidence is equally available to both the defense and the prosecution, the defendant must bear the responsibility of failing to conduct a diligent investigation.").

57 United States v. Stokes, 64 F. App'x 585, 588 (7th Cir. 2003).

58 *Id.* at 589.

59 *Id.* at 594 (citation omitted).

60 *Id.* (citations omitted).

61 *See* United States v. Blankenship, 19 F.4th 685, 694 (4th Cir. 2021).

62 *Id.* at 694–95.

63 *Id.* at 694.

was reasonably unaware of exculpatory information, to take affirmative steps to seek out and uncover such information in the possession of the prosecution."[64] The Supreme Court has made clear that the prosecution must disclose "evidence [that] is so clearly supportive of a claim of innocence that it gives [them] notice of a duty to produce," even absent defense counsel request.[65] Since prosecutors are presumed to have "discharged their official duties," the defense need not check their work.[66] What matters is whether prosecutors have disclosed materially favorable evidence within their actual or constructive knowledge. The adequacy of defense investigation does not bear on the analysis.[67]

Even in circuits that require defendants to exercise "reasonable diligence," there remains one caveat: "[D]efense counsel's knowledge of, and access to, evidence may be effectively nullified when a prosecutor misleads the defense into believing the evidence will not be favorable to the defendant."[68] Prosecutors may not—in bad faith—steer defense counsel away from worthwhile investigative leads. The Ninth Circuit applied this narrow exception in *Shaffer*.[69] The prosecution's case-in-chief hinged on testimony from an informant inside Shaffer's cocaine trafficking operation.[70] After conviction, Shaffer argued that the prosecution did not adequately disclose the informant's role in the investigation nor the compensation he received.[71] Though prosecutors apprised the defense of audio tapes summarizing the scope of the informant's involvement, the court held that mere disclosure was not enough.[72] Critically, prosecutors claimed—falsely and intentionally—"that these tapes would be of no value to Shaffer's defense."[73] When prosecutors say that certain avenues will not yield favorable evidence, the

64 Lewis v. Conn. Comm'r of Corr., 790 F.3d 109, 121 (2d Cir. 2015).

65 United States v. Agurs, 427 U.S. 97, 107 (1976).

66 Banks v. Dretke, 540 U.S. 668, 696 (2004) (quoting Bracy v. Gramley, 520 U.S. 899, 909 (1997)).

67 *See* Dennis v. Sec'y, Pa. Dep't of Corr., 834 F.3d 263, 290 (3d Cir. 2016) ("*Brady*'s mandate and its progeny are entirely focused on prosecutorial disclosure, not defense counsel's diligence.").

68 United States v. Pelullo, 399 F.3d 197, 213 (3d Cir. 2005) (citations omitted); *see also* Hughes v. Hopper, 629 F.2d 1036, 1039 (5th Cir. 1980) ("[D]efense counsel's knowledge of the substance has been effectively nullified . . . when the prosecution misleads the defense into believing the evidence will not be favorable to the defendant." (citations omitted)).

69 United States v. Shaffer, 789 F.2d 682, 690–91 (9th Cir. 1986).

70 *Id.* at 684.

71 *Id.* at 685.

72 *Id.* at 690 ("[W]hile the government did apprise Shaffer's counsel of tapes that detailed Durand's involvement, such disclosure was inadequate . . . .").

73 *See id.* (explaining that "[t]his later statement by the government negates any disclosure made in the earlier statement" (citing *Hughes*, 629 F.2d at 1039)).

defense may take them at their word.[74] *Brady* proscribes prosecutorial nondisclosure *and* misconduct. The bare fact of disclosure is no shield if prosecutors take affirmative steps to prevent defendants from relying on it. While proof of bad faith is unnecessary, prosecutorial wrongdoing invariably constitutes suppression.

3. Constructive Knowledge

The bulk of criminal investigations falls on law enforcement shoulders. Police interrogate suspects, interview witnesses, test forensics, handle informants, and more. Law enforcement agencies wield "the expertise, the manpower, the technical resources, and, perhaps most importantly, the informational networks that no U.S. Attorney's Office possesses, and without which few cases could be brought."[75] In most cases, prosecutors "will not even know that a crime has been committed until an agency informs [them]."[76] They must rely on alphabet agencies across federal, state, and local governments—each with specialized expertise in certain types of investigations. The Drug Enforcement Administration tackles narcotics. The Bureau of Alcohol, Tobacco, Firearms, and Explosives tracks down illicit weapons. The Securities and Exchange Commission enforces federal securities laws. The FBI's Joint Terrorism Task Force mobilizes law enforcement and intelligence agencies to thwart national security threats. Beat cops patrol the streets, pull over motorists, and stop and frisk pedestrians. All this barely scratches the surface. The extent to which prosecutors are responsible for information gathered by these agencies depends on the nature of their cooperation.

At a minimum, prosecutors must disclose materially favorable evidence within their knowledge or their possession.[77] But their obligations extend beyond their case file, even to evidence they never knew existed.[78] Prosecutors "ha[ve] a duty to learn of [and disclose] any favorable evidence known to the others acting on the government's

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[74] *Cf.* Banks v. Dretke, 540 U.S. 668, 695 (2004) ("Our decisions lend no support to the notion that defendants must scavenge for hints of undisclosed *Brady* material when the prosecution represents that all such material has been disclosed.").

[75] Daniel Richman, *Prosecutors and Their Agents, Agents and Their Prosecutors*, 103 COLUM. L. REV. 749, 767–68 (2003).

[76] *Id.* at 768.

[77] *See* Ogden v. Wolff, 522 F.2d 816, 820 (8th Cir. 1975) ("It is well established that a prosecutor has a duty to disclose to the accused all favorable evidence within his control or knowledge that is material to the defense." (citation omitted)); United States v. Tavera, 719 F.3d 705, 708 (6th Cir. 2013) ("Failure to do so results in a trial that is fundamentally unfair.").

[78] *See* United States v. Risha, 445 F.3d 298, 303 (3d Cir. 2006) ("[T]he government's duty to disclose under *Brady* reaches beyond evidence in the prosecutor's actual possession.").

behalf in the case"[79]—to the entire "prosecution team."[80] In *McCormick*, the Tenth Circuit expanded the prosecution team to include the sexual assault nurse examiner who "acted at the request of law enforcement in the pre-arrest investigation" into allegations of child sexual abuse.[81] Since the nurse falsely testified about her professional credentials and qualifications, the Court "impute[d] [her] own knowledge of her lack of current certification to the prosecutor as the party who is ultimately accountable for the nondisclosure of evidence."[82] Prosecutors are on the hook for team members who knew about *Brady* material but kept it to themselves.[83]

To be sure, the "prosecution team" does not encompass everyone who had a hand in the investigation. "Exactly who constitutes a member of the prosecution team is done after a 'case-by-case analysis of the extent of interaction and cooperation'" between the prosecution and other agencies.[84] The crux of the "inquiry is what the person *did*, not who the person *is*."[85] Generally, knowledge of favorable evidence by agencies with "no involvement in the investigation" may not be imputed to the prosecution.[86] Such was the case in *Locascio*.[87] Prosecutors demanded that gangster-turned-cooperator Salvatore Gravano confess his entire criminal history.[88] As the key witness against John Gotti,[89] Gravano "testified . . . that he had only committed the crimes referred to in his plea bargain."[90] After trial, it came to light that FBI agents working on unrelated matters discovered that Gravano's confessions

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79 Kyles v. Whitley, 514 U.S. 419, 437 (1995); *see also* United States v. Gray, 648 F.3d 562, 566 (7th Cir. 2011) ("Otherwise investigators assisting in a prosecution could conceal from the prosecutors exculpatory evidence that the investigation had revealed and then the evidence would never be revealed to the defense.").

80 United States v. Hunter, 32 F.4th 22, 35–36 (2d Cir. 2022) (citations omitted); *see also* Avila v. Quarterman, 560 F.3d 299, 307 (5th Cir. 2009) ("It is well settled that if a member of the prosecution team has knowledge of *Brady* material, such knowledge is imputed to the prosecutors." (citations omitted)).

81 McCormick v. Parker, 821 F.3d 1240, 1247–48 (10th Cir. 2016) (citations omitted).

82 *Id.* at 1246–49 (citations and internal quotation marks omitted).

83 *See* United States v. Avellino, 136 F.3d 249, 255 (2d Cir. 1998) ("An individual prosecutor is presumed . . . to have knowledge of all information gathered in connection with his office's investigation of the case . . . ." (citations omitted)).

84 United States v. Cutno, 431 F. App'x 275, 278 (5th Cir. 2011) (quoting *Avila*, 560 F.3d at 308); *see also* United States v. Stewart, 433 F.3d 273, 298 (2d Cir. 2006) (requiring "examin[ation of] the specific circumstances of the person alleged to be an 'arm of the prosecutor'" (quoting United States v. Morell, 524 F.2d 550, 555 (2d Cir. 1975))).

85 *Stewart*, 433 F.3d at 298 (citations omitted).

86 United States v. Morris, 80 F.3d 1151, 1169 (7th Cir. 1996) (citation omitted).

87 United States v. Locascio, 6 F.3d 924, 949–50 (2d Cir. 1993).

88 *Id.* at 948.

89 *Id.* at 930.

90 *Id.*

were incomplete, yet failed to inform the prosecution of his omissions.[91] The Second Circuit held that those agents were "uninvolved in the investigation or trial" and thus refused to "infer the prosecutors' knowledge simply because some other government agents knew about" the existence of impeachment material.[92]

Cases like *Locascio* sit on one end of the spectrum, where undisclosed evidence lies in the hands of "uninvolved government agencies."[93] On the other end lie cases where government agents "perform investigative duties and make strategic decisions about the case's prosecution."[94] Most cases fall somewhere in between: The agency keeps an arm's length distance but passes along incriminating evidence to support the prosecution's investigation. These cases beget no clear rules. The dominant approach measures their "degree of cooperation" according to whether the agency: "(1) participated in the prosecution's witness interviews, (2) was involved in presenting the case to the grand jury, (3) reviewed documents gathered by or shared documents with the prosecution, (4) played a role in the development of prosecutorial strategy, or (5) accompanied the prosecution to court proceedings."[95]

Alexandre illustrates the indeterminacy of this all-things-considered approach.[96] Prosecutors alleged that the defendant ran his cryptocurrency platform as a Ponzi scheme.[97] In March 2022, the FBI and the Commodities Future Trading Commission independently launched investigations.[98] Upon realization that they shared the same target, the two agencies started to collaborate.[99] The CFTC granted the FBI open access to its files.[100] Both agreed to sync the timing of the defendant's arrest, the search of his office, and the freeze of his assets.[101]

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91 *Id.*

92 *Id.* at 948–49 (citations omitted).

93 Sutton v. Carpenter, 617 F. App'x 434, 441 (6th Cir. 2015) (citation omitted). Cooperating witnesses generally do not count as members of the prosecution team either. *See* United States v. Garcia, 509 F. App'x 40, 43 (2d Cir. 2013) ("[T]his Court has never held that the 'prosecution team' includes cooperating witnesses."); United States v. Graham, 484 F.3d 413, 417–18 (6th Cir. 2007) ("[C]ooperating witnesses . . . stand in a very different position in relation to the prosecution than do police officers and other governmental agents.").

94 Colemon v. City of Cincinnati, No. 21–5968, 2023 WL 5095804, at *5 (6th Cir. Aug. 9, 2023) (citation omitted).

95 *See, e.g.*, United States v. Alexandre, No. 22–326, 2022 WL 16798756 (S.D.N.Y. Nov. 8, 2022); United States v. Middendorf, No. 18–36, 2018 WL 3956494, at *4 (S.D.N.Y. Aug. 17, 2018) (citation omitted).

96 United States v. Alexandre, No. 22–326, 2023 WL 416405 (S.D.N.Y. Jan. 26, 2023).

97 *Id.* at *2.

98 *Id.*

99 *Id.*

100 *Id.* at *2.

101 *Id.* (citations omitted).

The Court nevertheless held that the CFTC fell outside the prosecution team.[102] Its "access grant[]" to the FBI was "hardly uncommon" and merited less weight because "the information sharing largely flowed only in one direction."[103] Furthermore, the CFTC neither conducted any joint witness interviews nor participated in any grand jury or court proceedings.[104] Since the agencies maintained significant independence, the CFTC's knowledge of potentially favorable evidence could not be attributed to the prosecution.

Courts have emphasized that "[a] prosecutor has no duty to undertake a fishing expedition in other jurisdictions in an effort to find potentially impeaching evidence."[105] The United States Government encompasses millions of individuals spread across countless departments and agencies. Practically speaking, prosecutors cannot muster enough resources to search the "whole-of-government" for potentially favorable evidence.[106] This colossal burden "would clearly be an unworkable encumbrance on the system of justice."[107] On the other hand, it makes no difference for wrongfully convicted defendants whether the U.S. Attorney's Office or the CFTC withheld proof of their innocence. Since the indictment pits the defendant against the United States, one might assume that everyone on the left side of the "v" must come forward. By extending *Brady* to cover members of the "prosecution team" but no further, courts have drawn the line to exempt from mandatory disclosure nontrivial amounts of exculpatory information.

C. Step Three: Prejudice

Most defendants lose at step three. Nondisclosure engenders "prejudice" only if the evidence is "material" to either guilt or punishment.[108] In *Bagley*, the Supreme Court clarified that "evidence

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102 *Id.* at *6 ("The facts do not indicate that [] the CFTC . . . conducted a joint investigation with the Government such that [it] could be properly considered part of the prosecution team.").

103 *Id.* at *6 (citations omitted).

104 *Id.* at *8.

105 United States v. Meros, 866 F.2d 1304, 1309 (11th Cir. 1989).

106 United States v. Hunter, 32 F.4th 22, 37 (2d Cir. 2022).

107 *Id.*; *see also* United States v. Avellino, 136 F.3d 249, 255 (2d Cir. 1998) ("[T]he imposition of an unlimited duty on a prosecutor to inquire of other offices not working with the prosecutor's office on the case in question would inappropriately require us to adopt 'a monolithic view of government' that would 'condemn the prosecution of criminal cases to a state of paralysis.'" (quoting United States v. Gambino, 835 F. Supp. 74, 95 (E.D.N.Y. 1993), *aff'd*, 59 F.3d 353 (2d Cir. 1995)); United States v. Meregildo, 920 F. Supp. 2d 434, 440 (S.D.N.Y. 2013) ("The constructive knowledge of the prosecutor is not limitless. It does not encompass every agency and individual within the federal government." (citations omitted)).

108 Brady v. Maryland, 373 U.S. 83, 87 (1963).

is material only if there is a reasonable probability that, had the evidence been disclosed to the defense, the result of the proceeding would have been different."[109] The probability is "reasonable" if "sufficient to undermine confidence in the outcome."[110] The defense "need not demonstrate that after discounting the inculpatory evidence in light of the undisclosed evidence, there would not have been enough left to convict."[111] Their burden of proving "materiality" is much lighter.

However, the judge must evaluate the undisclosed evidence "in the context of the entire record"—in light of the weight of the prosecution's case.[112] If incriminating evidence was overwhelming, defendants cannot prove that a different outcome would have been within reach.[113] The "reasonable probability" standard comes to bite in legions of cases where prosecutors undoubtedly suppressed favorable evidence.[114]

II
Brady in the Digital Age

This Part steers our focus to the ubiquity of big data investigations. Federal courts are now grappling with new and weighty questions. Do prosecutors have to parse terabytes of data to find evidence favorable for the other side? If they opt for an "open file" policy, must they do more to help the defense make sense of the disclosed materials? Courts find no clear answers. What *is* clear, though, is that "courts have no license to abdicate their duty to enforce constitutional guarantees based on the

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109 United States v. Bagley, 473 U.S. 667, 682 (1985). For undisclosed *Giglio* materials related to "witness's credibility," courts ask if "a reasonable probability" existed that "(1) . . . the new evidence would have changed the way in which jurors viewed the witness's testimony, and (2) . . . this change would have resulted in a different verdict." Smith v. Chappell, 664 F. App'x 621, 623 (9th Cir. 2016) (quoting Gonzalez v. Wong, 667 F.3d 965, 982 (9th Cir. 2011)).

110 *Bagley*, 473 U.S. at 682.

111 Kyles v. Whitley, 514 U.S. 419, 434–35 (1995).

112 United States v. Agurs, 427 U.S. 97, 112–13 (1976) (citation omitted) ("If there is no reasonable doubt about guilt . . . there is no justification for a new trial. On the other hand, if the verdict is already of questionable validity, additional evidence of relatively minor importance might be sufficient to create a reasonable doubt.").

113 *See* Smith v. Sec'y, Dep't of Corr., 572 F.3d 1327, 1347 (11th Cir. 2009) ("[T]he stronger the evidence of guilt to begin with, the more favorable to the defense the undisclosed evidence will have to be to create a reasonable probability that a jury would have acquitted had the evidence been disclosed." (citations omitted)).

114 *See Agurs*, 427 U.S. at 109–10 ("The mere possibility that an item of undisclosed information might have helped the defense, or might have affected the outcome of the trial, does not establish 'materiality' in the constitutional sense."); *see, e.g.*, Strickler v. Greene, 527 U.S. 263, 289–96 (1999) (affirming denial of habeas corpus petition because petitioner did not show "a reasonable probability that his conviction or sentence would have been different had these materials been disclosed").

complexities of new technology," "[d]ifficult though the task may be."[115] This Part examines how federal courts have performed on this score.

A. Big Data Investigations

Law enforcement agencies enjoy unprecedented access to information. With advanced digital technology comes mass data collection. Police have eyes and ears everywhere. Surveillance cameras[116] and aerial drones[117] watch over every city block. Police body cameras record thousands of hours of footage every day.[118] Thermal imaging devices detect infrared energy and allow police (and their cameras) to see in darkness.[119] Automatic license plate readers mounted on police vehicles, road signs, and bridges feed data back to "regional sharing systems" that track our movements on public roads.[120] Some agencies keep this data for hours; some forever.[121]

The information generated by law enforcement pales in comparison to what we volunteer to private businesses. Our credit card and brokerage companies know how much money we have, where we shop, what stocks we trade. Our cellular providers know, at all times, who we call and where we are.[122] Above all, tech companies like Google keep tabs on everything we do online.[123] The Government's investigatory powers unlock the vaults that store this information.

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115 Jeffrey S. Sutton, *Courts, Rights, and New Technology: Judging in an Ever-Changing World*, 8 N.Y.U. J.L. & Liberty 260, 274 (2014).

116 *See* Fussell, *supra* note 10 (discussing "the locations of more than 15,000 cameras used by the New York Police Department . . . .").

117 *See Prying Eyes: Government Drone Data Across New York State*, N.Y.C.L. Union (Oct. 21, 2022), https://www.nyclu.org/en/campaigns/prying-eyes-government-drone-data-across-new-york-state [https://perma.cc/ZMS4-YRFE].

118 *See* U.S. Dep't of Just., Off. of Just. Programs, *Research on Body-Worn Cameras and Law Enforcement*, Nat'l Inst. of Just. (Jan. 7, 2022), https://nij.ojp.gov/topics/articles/research-body-worn-cameras-and-law-enforcement [https://perma.cc/7NY2-3HFQ] (describing the widespread adoption of body-worn cameras and assessing their effectiveness).

119 *See* Brad Harvey, *Thermal Imaging Applications Overview for Law Enforcement*, Police1 (July 25, 2007, 7:32 AM), https://www.police1.com/police-products/police-technology/thermal-imaging/articles/thermal-imaging-applications-overview-for-law-enforcement-ssC7sU4JA9onHojm [https://perma.cc/HH8D-XEKA] ("Because the thermal imager requires no light," such technology can "identify people who may be hiding" and "overcome the normal challenges of low-light situations.").

120 Catherine Crump, You Are Being Tracked: How License Plate Readers Are Being Used to Record Americans' Movements 2 (2013), https://www.aclu.org/files/assets/071613-aclu-alprreport-opt-v05.pdf [https://perma.cc/DAW9-AX88].

121 *Id.* at 20.

122 *See* Carpenter v. United States, 585 U.S. 296, 301 (2018) ("[I]n recent years phone companies have also collected location information from the transmission of text messages and routine data connections.").

123 *See* (for yourself) at *Your data in Search*, Google, https://myaccount.google.com/yourdata/search [https://perma.cc/5FXB-P3DW].

In the federal system, law enforcement may obtain "the contents of any wire or electronic communication" with a warrant based upon probable cause.[124] Further, law enforcement may subpoena non-content "metadata" like phone numbers upon "reasonable grounds to believe" that the requested information is "relevant and material to an ongoing criminal investigation."[125] All this information is one court order away.

Surveillance is only half the equation. At the initial collection stage, police have no reason to believe that any particular person committed wrongdoing.[126] Data sits idle in storage facilities. The investigation kicks off after police suspect that an individual has (or will be) engaged in criminal activity. This "analysis" stage is where collected information gets put to use. Some investigative techniques are straightforward. For an armed robbery, police might identify the getaway car's license plate or vehicle identification number or seek out surveillance footage that might shed light on the perpetrator's identity.

Police tactics have become more sophisticated. Consider, for instance, the investigation at issue in *Carpenter*.[127] After police arrested four men for robbery, a suspect-turned-cooperator pointed the finger at fifteen other accomplices involved in nine other heists. The cooperator divulged the defendant's name and phone number, but nothing more. But that was enough for prosecutors to obtain cellphone location records from the defendant's wireless carriers. With this metadata in hand, police were able to pinpoint the defendant's exact location across 129 days, then place him "right where the . . . robbery was at the exact time of the robbery."[128]

White collar investigations have become more sophisticated too. Evidence which used to be "reams of paper"[129] is now terabytes of data. On the civil side, the SEC relies on "quantitative algorithms and statistical models that identify the risks, the outliers and the inliers"

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124 18 U.S.C.A. § 2703(b)(1); *see* Fed. R. Crim. P. 41(d)(1), ("A magistrate judge . . . must issue the warrant if there is probable cause"), 41(e)(2)(B) ("A warrant . . . may authorize the seizure of electronic storage media or the seizure or copying of electronically stored information.").

125 18 U.S.C.A. §§ 2703(c)–(d). If the government subpoenas at least seven days of historical cellphone tracking records, it must demonstrate probable cause. *See* Carpenter, 585 U.S. at 316 ("Having found that the acquisition of . . . [cell-site location information] was a search, we also conclude that the Government must generally obtain a warrant supported by probable cause before acquiring such records.").

126 *See* Christopher Slobogin, *Policing as Administration*, 165 U. Pa. L. Rev. 91, 107 (2016) ("[A]ll of these surveillance techniques are suspicionless; their whole point is to obtain and store information about a large population, presumably mostly innocent, for later analysis.").

127 *Carpenter*, 585 U.S. at 301.

128 *Id.* at 303 (ellipsis in original, citations omitted).

129 Ellen Yaroshefsky, *Cooperation with Federal Prosecutors: Experiences of Truth Telling and Embellishment*, 68 Fordham L. Rev. 917, 934 (1999).

within tens of millions of company filings, whistleblower reports, and financial documents stored in its "centralized data warehouse."[130] Through "digital forensic analysis and data visualization," evidence of securities fraud "that once took 14 [to] 17 months to analyze can now be done in minutes and placed on a CD to give to a prosecutor or a jury."[131] Just like that.

These tools are particularly important because white collar criminals have become more sophisticated than ever. Consider, for example, the criminal conduct in *Khalupsky*.[132] Ukrainian hackers stole draft press releases from business newswires.[133] Through the use of "computers, phones, and a software program enabling easy access to the server hosting the stolen releases," the defendants amassed enormous profits by trading stocks with nonpublic information.[134] In these cases, the site of criminal activity is not the streets but the cloud. Any investigation will invariably yield mountains of data.[135]

But *Brady* materials might be buried underneath, and neither side will know where to look. Suppose an eyewitness testifies that she clearly saw the defendant's face as he fled the scene. But when police interviewed her immediately after the crime, her demeanor indicated doubt. Unless the officer memorialized that in the police report, the only way that anyone would come across this *Giglio* material is to review the body camera footage. Now suppose that the police's data mining software (say, Palantir[136]) swept up Instagram selfies of an eyewitness throwing up gang signs. If police had dug deeper, they would have realized that the eyewitness belonged to a gang that rivaled the defendant's and thus

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130 Charles S. Clark, *IRS and SEC Detect Fraud Patterns in Heaps of Data*, Gov't Exec. (Oct. 16, 2012), https://www.govexec.com/technology/2012/10/irs-and-sec-detect-fraud-patterns-heaps-data/58816 [https://perma.cc/NDX2-YJ27]; *see also* David Freeman Engstrom, Daniel E. Ho, Catherine M. Sharkey & Mariano-Florentino Cuéllar, Government by Algorithm: Artificial Intelligence in Federal Administrative Agencies 25 (2020), https://law.stanford.edu/wp-content/uploads/2020/02/ACUS-AI-Report.pdf [https://perma.cc/L2L4-VHGV] ("The SEC's suite of algorithmic tools provides a glimpse of a potential revolution in regulatory enforcement.").

131 Clark, *supra* note 130.

132 United States v. Khalupsky, 5 F.4th 279 (2d Cir. 2021).

133 *Id.* at 285.

134 *Id.* at 286.

135 *See* Andrew Guthrie Ferguson, *Big Data Prosecution and* Brady, 67 UCLA L. Rev. 180, 245 (2020) ("The digital equivalent of the traditional casefile will now include years' worth of data from all types of sources. These sorts of changes do not impact the responsibilities of a prosecutor, but they significantly expand the scope and depth of how prosecutors must think about *Brady*.").

136 *See* Mark Harris, *How Peter Thiel's Secretive Data Company Pushed into Policing*, Wired (Aug. 9, 2017, 9:40 AM), https://www.wired.com/story/how-peter-thiels-secretive-data-company-pushed-into-policing [https://perma.cc/J3RW-P48V].

had motive to falsely implicate the defendant.[137] Or suppose instead that the eyewitness testified that she saw the fleeing culprit, and that person's description matched the defendant: Six feet two inches, white male, brown hair, wearing distinctively red sneakers. But the defendant insists on mistaken identity. Meanwhile, the NYPD's data storage facility contains surveillance footage of someone who matched the eyewitness's description—down to the red sneakers—walking around town while the defendant was in custody.[138] In these hypotheticals, *Brady* materials reside in law enforcement files, unbeknownst to either side.

To avoid liability, prosecutors might decline to execute lawful search warrants or subpoenas to avoid possession of evidence which they cannot possibly review. The upshot is that both the prosecution and defense lose out on evidence favorable to their case.

B. The Open File Problem

In big data investigations, prosecutors cannot possibly review each of the hundreds of thousands of documents in their case file.[139] They lack time and resources to find the needle in the digital haystack. But *Brady* doctrine provides no exceptions for good faith or impracticability.[140] All materially favorable evidence in their "custody, possession, or control" must be disclosed.[141] Lack of awareness is no excuse: "If evidence highly probative of innocence is in his file, he should be presumed to recognize its significance even if he has actually overlooked it."[142] Some courts extend this presumption to "*all* information gathered in connection with the government's investigation," regardless of whether anyone on the prosecution team actually laid eyes on the undisclosed materials.[143]

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137 *See* Amado v. Gonzalez, 758 F.3d 1119 (9th Cir. 2014) (vacating conviction because prosecutors did not disclose the witness's probation report from unrelated robbery, which detailed his prior involvement in rival gang).

138 *See* United States v. Bates, 677 F. Supp. 3d 1200 (D. Nev. 2023) (granting motion for new trial because prosecution failed to disclose police bodycam footage which tended to prove that alternative suspect matched the shooter's physical description).

139 *See, e.g.*, United States v. Skilling, 554 F.3d 529, 576 (5th Cir. 2009) ("several hundred million pages of documents"); United States v. Mmahat, 106 F.3d 89, 94 (5th Cir. 1997) (500,000 pages of documents); United States v. Hsia, 24 F. Supp. 2d 14, 29 (D.D.C. 1998) (600,000 documents); United States v. Causey, 356 F. Supp. 2d 681, 694 (S.D. Tx. 2005) (300,000 pages of "hot documents").

140 *See* Gantt v. Roe, 389 F.3d 908, 912 (9th Cir. 2004) ("*Brady* has no good faith or inadvertence defense.").

141 Lavallee v. Coplan, 374 F.3d 41, 43 (1st Cir. 2004).

142 United States v. Agurs, 427 U.S. 97, 110 (1976).

143 United States v. Payne, 63 F.3d 1200, 1208 (2d Cir. 1995) (emphasis added). Many prosecutorial offices have adopted software granting direct access to law enforcement data. So "possession" is uncontestable. *See* Ferguson, *supra* note 135, at 243 ("In centralizing data into a single searchable and accessible system, the move toward intelligence-driven

While prosecutors have no "constitutional duty routinely to deliver [their] entire file to defense counsel,"[144] many regard that approach as the only way to comply with *Brady*.[145] Unless they can comb through each document for favorable evidence, they might opt to turn over the entire case file. This "open file" policy leaves both sides worse off. Prosecutors must reveal their hand, disclosing evidence that need not be disclosed. The onus then shifts to defense counsel to find favorable evidence within the sea of documents. The fact of the open file means that prosecutors have already given up. So the likelihood that defense counsel—many even more strapped for time and resources—will find anything meaningful is slim to none.

Most federal courts have mechanically applied *Brady* doctrine in open file cases to relieve prosecutors of any further obligation to search within that file for favorable evidence. Nor do they have to take the extra step to organize the files in an accessible format. Nor flag "hot documents" worthy of attention.[146] Courts are justifiably concerned about the adversarial unfairness of requiring prosecutors to do defense counsel's job. In *Parks*, the Seventh Circuit held that prosecutors were not obliged to transcribe sixty-five hours of recorded conversations between the defendants and their confederates.[147] It sufficed that the prosecution provided "free and open access" to these tapes, with plenty of time—thirteen months—for defense counsel to review.[148]

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prosecution also simplifies the question of whether a prosecutor has [real or constructive] possession of exculpatory or impeaching information. They do.").

144 *Agurs*, 427 U.S. at 111; *see also* Moore v. Illinois, 408 U.S. 786, 795 (1972) ("We know of no constitutional requirement that the prosecution make a complete and detailed accounting to the defense of all police investigatory work on a case.").

145 Prosecutors might gamble that their case file contains no materially favorable evidence. If they guess correctly, then the gamble was worth the risk. But prosecutors have no way to assess (ex ante) whether their wager will be correct. If *Brady* materials in fact exist, the gamble creates an untenable risk of wrongful conviction. *See* United States v. Starusko, 729 F.2d 256, 265 (3d Cir. 1984) ("Only if the defendant is the beneficiary of fortuitous happenstance by discovering the materials through extrajudicial means . . . are his rights vindicated. The 'game' will go on, but justice will suffer."), *abrogated on other grounds by* Dennis v. Sec'y, Pa. Dep't of Corr., 834 F.3d 263, 289–93 (3d Cir. 2016) (en banc).

146 *See* Guidry v. Lumpkin, 2 F.4th 472, 487 (5th Cir. 2021) ("The prosecution has no duty under *Brady* to show defense counsel where to find exculpatory evidence in the open file."); United States v. Warshak, 631 F.3d 266, 297 (6th Cir. 2010) (rejecting the defendant's argument that "the government shrugged off its obligations under *Brady* by simply handing over millions of pages of evidence and forcing the defense to find any exculpatory information contained therein"); United States v. Pelullo, 399 F.3d 197, 212 (3d Cir. 2005) (stating that *Brady* "impose[s] no additional duty on the prosecution team members to ferret out any potentially defense-favorable information from materials that are so disclosed").

147 United States v. Parks, 100 F.3d 1300, 1308 (7th Cir. 1996) (vacating the district court's order to suppress the tapes).

148 *Id.* at 1307; *see also id.* at 1305 (noting that the defendants possess "multiple copies of the tapes in the same format in which the Government has them").

Though "stakes were high," the Court found no reason "to require the Government to conduct defendants' investigation for them."[149] Similarly, the district court in *Rubin/Chambers* rejected the defendant's motion to compel prosecutors to "bucket" the open file materials—to "re-produce in categorized batches documents that relate to transactions with certain characteristics."[150] Otherwise, prosecutors would be forced into "the untenable position of having to prepare both sides of the case at once."[151] The bottom line is that "[a]s a general rule, the government is under no duty to direct a defendant to exculpatory evidence within a larger mass of disclosed evidence."[152]

But federal courts have carved out some exceptions to this general rule. First, the prosecution may not "deliberately hid[e] what it knowingly identified as *Brady* needles in the evidentiary haystack."[153] This "bad faith" exception remains narrow. In most jurisdictions, the prosecution's knowledge of favorable evidence does not necessarily create an obligation to flag them for defense counsel. For instance, the Fifth Circuit has tapered this exception to situations where "the [G]overnment 'padded' an open file with pointless or superfluous information to frustrate a defendant's review of the file."[154] So long as prosecutors do not "hide" *Brady* materials in "hope that the defendant will never find it," they need not make those materials apparent for the defense.[155] Of course, direct evidence of bad faith rarely crops up.[156] The bare fact that the open file contains discrete but unflagged pieces of favorable evidence may circumstantially prove improper motivations. Disclosure of "voluminous file[s] that [are] unduly onerous to access"

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149 *Id.* at 1308.

150 United States v. Rubin/Chambers, Dunhill Ins. Servs., 825 F. Supp. 2d 451, 453 (S.D.N.Y. 2011).

151 *Id.* at 454 (citations and internal quotation marks omitted); *see also id.* at 455 (refusing to "requir[e] the Government to undertake the organizational and analytical burdens that Defendants would foist upon it to facilitate the preparation of their defense").

152 United States v. Skilling, 554 F.3d 529, 576 (5th Cir. 2009), *vacated in part on other grounds*, 561 U.S. 358 (2010); *see also* Rhoades v. Henry, 638 F.3d 1027, 1039 (9th Cir. 2011) ("[The defendant] points to no authority requiring the prosecution to single out a particular segment of a videotape, and we decline to impose one.").

153 *Rubin/Chambers*, 825 F. Supp. 2d at 455.

154 *Skilling*, 554 F.3d at 577; *see also* United States v. Stanford, 805 F.3d 557, 572 (5th Cir. 2015) (requiring "some showing that the government acted in bad faith or used the file to obscure exculpatory material"); United States v. Warshak, 631 F.3d 266, 298 (6th Cir. 2010) ("[T]here is no indication that the government deliberately concealed any exculpatory evidence in the information it turned over to the defense.").

155 *Skilling*, 554 F.3d at 577.

156 For an egregious case of bad faith, see United States v. Nejad, 487 F. Supp. 3d 206, 208 (S.D.N.Y. 2020) (discussing an email where prosecutors communicated plans to "bury" *Brady* material).

might also raise an eyebrow.[157] Conversely, the prosecution undertaking "additional steps" to make disclosed materials "electronic and searchable"—with indices to "hot documents . . . potentially relevant to [the] defense"—indicates good faith compliance with *Brady*.[158]

Some district courts have charted another path, requiring prosecutors to specifically identify known exculpatory information within its "voluminous production."[159] In *Hsia*, the Court concluded that the prosecution did not satisfy *Brady* by dumping 600,000 documents on the defense.[160] "[I]t is the government's responsibility in the first instance to determine whether information in its possession is *Brady* material," and "to the extent that [it] knows of any [such] documents or statements," it must "identify" those materials for defense counsel.[161] The Court in *Blankenship* agreed, observing that the prosecution, with "knowledge of the evidence and witnesses it intends to produce" at trial, remains "in a far better position" than the defendant to find favorable evidence.[162] Providing "a searchable, indexed, digital database" was not enough.[163] "To the extent the Government is aware of existing evidence of [the *Brady*] nature," it must not only produce but also "designate" certain materials as such.[164]

Let us take stock. Generally, the prosecution's *Brady* obligations fall away upon disclosure of the open file, subject to the bad faith exception. While some district courts require prosecutors to do more, those cases deal only with their obligations with respect to evidence they *know* to be favorable.[165] Requiring prosecutors to flag such evidence is neither radical nor disruptive to our adversarial system. But requiring them to take the extra step and seek out uncharted evidence is something else entirely. The "duty to flag" cases do not address the crux of the problem:

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157 *Skilling*, 554 F.3d at 577.

158 *Id.*

159 United States v. Saffarinia, 424 F. Supp. 3d 46, 90 (D.D.C. 2020) (involving an open file with 3.5 million pages of documents); *see also* United States v. Cutting, No. 14–139, 2017 WL 132403, at *9 (N.D. Cal. Jan. 12, 2017) (requiring "the government to identify the *Brady* material in the discovery that has been produced").

160 United States v. Hsia, 24 F. Supp. 2d 14, 29 (D.D.C. 1998), *rev'd in part on other grounds*, 176 F.3d 517 (D.C. Cir. 1999).

161 *Id.* at 29–30.

162 United States v. Blankenship, No. 14–244, 2015 WL 3687864, at *7 (S.D.W. Va. June 12, 2015) ("[T]he United States does not comply with the requirement of *Brady* by merely including all known *Brady* material within the four million plus pages of discovery.").

163 *Id.* at *4 (quoting from the prosecution's brief).

164 *Id.* at *7.

165 *See* United States v. Skilling, 554 F.3d 529, 577 (5th Cir. 2009) ("If there is something exculpatory still in the open file, we must assume . . . that the government does not know about it either."); United States v. Saffarinia, 424 F. Supp. 3d. 46, 58 (D.D.C. 2020) ("[T]he government must identify any *Brady* material within its voluminous production to [the defendant] to the extent that the government knows of any such information.").

When the case file is too voluminous for thorough review, prosecutors have no way of knowing whether overlooked *Brady* materials exist within. So long as they disclose everything, courts uniformly fall back on the general rule that they are not "obliged to sift fastidiously through the evidence . . . in an attempt to locate anything favorable to the defense."[166]

Open file policies leave the prosecution and defense in the same quagmire. Both sides possess identical materials, though neither has the time nor resources to seek out all relevant evidence therein. Yet these practical constraints place defendants at a unique disadvantage. Prosecutors do not need every shred of inculpatory evidence to satisfy their burden of proof. Yes, "a brick is not a wall."[167] But for the most part, their inability to thoroughly review each document is merely a missed opportunity. But the same is not true for defendants. Exculpatory evidence is rarely cumulative. When trying to establish reasonable doubt, every shred makes a difference. When technological developments get in the way of defense access to exculpatory materials, our system runs the risk that innocent people will be wrongfully convicted.[168]

III
Judicial Oversight as Due Process

Brady doctrine is lagging behind. While advancements in forensic technology are inevitable, distortions in federal criminal procedure are not. It may be tempting to throw up our hands and wait around for artificial intelligence or e-discovery to bail prosecutors out.[169] If new

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166 United States v. Warshak, 631 F.3d 266, 297 (6th Cir. 2010). The Department of Justice has insisted that the prosecution's obligations go no further than the open file itself. *See* Eric H. Holder, *In the Digital Age, Ensuring That the Department Does Justice*, 41 Geo. L.J. Ann. Rev. Crim. Proc. iii, viii (2012) ("As a general rule, prosecutors do not have the additional obligation to search for and attempt to locate potential *Brady* material within the [electronically stored information].").

167 Fed. R. Evid. 401 advisory committee's notes on proposed rules (quoting 1 McCormick on Evidence § 152, at 317).

168 I am referring to legal (not actual) "innocence," as measured by what can be proven beyond a reasonable doubt. *See* Poventud v. City of New York, 750 F.3d 121, 133 n.13 (2d Cir. 2014) (en banc) ("Of course, when a defendant is not proven guilty beyond a reasonable doubt, the only verdict 'worthy of confidence' is an acquittal, regardless of the defendant's actual guilt.").

169 *See* Ferguson, *supra* note 135, at 254 (discussing ways to "automat[e] a system of flags, searches, and networks [to] help the human prosecutor see the larger patterns and connections at play"). Some federal agencies have experimented with artificial intelligence. *See* Engstrom et al., *supra* note 130, at 22. The Intelligence Community remains at the forefront. *See* Avril D. Haines, Stacey A. Dixon & Lori Wade, The IC Data Strategy: 2023–25 3 (2023), https://www.dni.gov/files/ODNI/documents/IC-Data-Strategy-2023-2025.pdf [https://perma.cc/3M3C-Z2CB] (proposing ways to "[a]dopt and mature existing data

technology created the problem, surely newer technology will fix it. Maybe so. But whether that pans out is beyond our control—and the scope of this Note. Regardless of what happens in Silicon Valley, we can bring age-old legal tools to bear on the problem.

This Part proposes countermeasures that lie not in constitutional law but elsewhere. Federal Rule of Criminal Procedure 16(d) vests discretion in district judges to manage discovery. And judges have inherent authority to regulate professional conduct. Given appropriate circumstances, they should invoke these powers to afford defendants greater access to exculpatory and impeachment evidence. In keeping with stare decisis, they may do so without disrupting *Brady* doctrine, all while ensuring that it keeps pace with technological realities.

A. Ex Ante Obligations and Ex Post Remedies

Brady imposes an obligation on prosecutors *and* supplies remedies to defendants whose rights are violated. The scope of the prosecution's disclosure obligations dictates the remedies defendants may pursue. But the inverse is not so. Restricting the defendant's available remedies does not, in theory, diminish prosecutors' *Brady* obligations. They possess an independent, affirmative duty to disclose materially favorable evidence, irrespective of whether the defendant might later cry foul.[170] *Brady* thus provides two layers of checks: The Government disciplines itself by instructing its agents to conform to Fifth Amendment strictures, and then defendants invoke the judicial process when the Government falls short.

But in practice, prosecutors' ex ante obligations are only as strong as defendants' ability and willingness to pursue ex post remedies.[171] If prosecutors suppress exculpatory evidence in case after case and defendants (or courts) do nothing to resist, then *Brady* does not count for much. My sense is that most federal prosecutors take their disclosure obligations seriously.[172] This attitude reaches the highest

services, add new services and capabilities, and ensure data is AI-ready and consumable by both humans and machines"). Law enforcement would be wise to follow.

170 *See* United States v. Tavera, 719 F.3d 705, 712 (6th Cir. 2013) ("The *Brady* rule imposes an independent duty to act on the government, like the duty to notify the defendant of the charges against him."); United States v. Moore, 439 F.2d 1107, 1108 (6th Cir. 1971) ("*Brady* was never intended to create pretrial remedies.").

171 *See* Justin Murray, *Prejudice-Based Rights in Criminal Procedure*, 168 U. Pa. L. Rev. 277, 278 (2020) (arguing that the "outcome-centric prejudice-based" approach to constitutional remedies deprives defendants of their right to fair process, which they are entitled to regardless of whether that process will affect the ultimate outcome).

172 *Accord* Adam M. Gershowitz, *The Challenge of Convincing Ethical Prosecutors That Their Profession Has a* Brady *Problem*, 16 Ohio St. J. Crim. L. 307, 309 (2019) ("[T]he vast majority of prosecutors are ethical, over-worked public servants and that a large amount of

levels of the Department of Justice. The Justice Manual goes beyond the constitutional floor, requiring prosecutors to "take a broad view of materiality" and "err on the side of disclosure if admissibility is a close question."[173] Their disclosure obligations extend to all "relevant exculpatory or impeachment information that is significantly probative of the issues before the court," even though not strictly "material" under the doctrine.[174]

It would be naive to think that these precautions are remotely sufficient. The problem is systemic, lying at the intersection of law and psychology. So long as prosecutors must prospectively decide whether to disclose some piece of evidence, there will be fights over *Brady*. The distinction between material and immaterial rests on an "inevitably imprecise standard."[175] Unlike courts sitting in postconviction review, prosecutors lack the benefit of hindsight or "the context of the entire record."[176] Defense theories and credibility of witnesses become apparent only during trial.[177] So, prior to trial, prosecutors must partake in guesswork. The generic instruction that "prudent prosecutor[s] will resolve doubtful questions in favor of disclosure" offers no concrete guidance on how to differentiate between doubtful and doubtless questions.[178] As "the initial arbiter of materiality," prosecutors must

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prosecutorial misconduct is in fact accidental. [But that] does not mean that there are not widespread *Brady* violations . . . .").

173 U.S. Dep't of Just., Just. Manual § 9-5.001(B)(1) (2020) [hereinafter Just. Manual]; *see also* Memorandum from Deputy Att'y Gen. David W. Ogden, *Guidance for Prosecutors Regarding Criminal Discovery* (Jan. 4, 2010), https://www.justice.gov/archives/dag/memorandum-department-prosecutors [https://perma.cc/6X9J-GGGQ] ("The guidance is intended to establish a methodical approach to consideration of discovery obligations that prosecutors should follow in every case to avoid lapses that can result in consequences adverse to the Department's pursuit of justice."); Holder, *supra* note 166, at iii (explaining that the Department of Justice "honors its fundamental commitment to do justice by requiring federal prosecutors to go beyond what the Constitution requires").

174 Just. Manual, *supra* note 173, § 9-5.001(C). Putting policy to practice, the Office of Legal Education provides mandatory disclosure trainings for newly hired federal prosecutors. *Id.* § 9-5.001(E).

175 United States v. Agurs, 427 U.S. 97, 108 (1976).

176 United States v. Common, 818 F.3d 323, 331 (7th Cir. 2016); *see also Agurs*, 427 U.S. at 108 ("[T]here is a significant practical difference between the pretrial decision of the prosecutor and the post-trial decision of the judge.").

177 *See* United States v. Bagley, 473 U.S. 667, 698 (1985) (Marshall, J., dissenting) ("Evidence that is of doubtful worth in the eyes of the prosecutor could be of inestimable value to the defense, and might make the difference to the trier of fact."); *Agurs*, 427 U.S. at 108 ("[T]he significance of an item of evidence can seldom be predicted accurately until the entire record is complete."); United States v. Safavian, 233 F.R.D. 12, 16 (D.D.C. 2005) ("Most prosecutors are neither neutral (nor should they be) nor prescient, and any such judgment necessarily is speculative on so many matters that simply are unknown and unknowable before trial begins . . . .").

178 *Agurs*, 427 U.S. at 108.

draw the line somewhere.[179] And "[w]herever the law draws a line there will be cases very near each other on opposite sides."[180] Thus, the prospective nature of the materiality inquiry leaves prosecutors with little to work with.

The job of law enforcement is the "detection of crime and the arrest of criminals."[181] Critics cite investigative tunnel vision as the root cause of wrongful convictions.[182] But this fixation often sustains otherwise fruitless investigations, and nurtures uncorroborated hunches into certainty beyond reasonable doubt.[183] Police and prosecutors who undervalue evidence cannot build strong cases or persuade juries. At the other extreme, those who view every shred of proof as a smoking gun might not notice exculpatory evidence under their nose. Cognitive biases explain this latter phenomenon. Because "people weigh evidence that supports their prior beliefs more heavily than evidence that contradicts their beliefs,"[184] law enforcement tend to attribute greater weight to inculpatory rather than exculpatory evidence."[185]

In the course of a typical investigation, police and prosecutors amass vast sums of incriminating evidence. Perhaps cellphone metadata placed the suspect at the crime scene. Maybe his social media posts appear incriminating. Or his partner in crime agreed to testify. When prosecutors sit down to assemble *Brady* materials, their memory, "preferring information that tended to confirm the hypothesis presented," may become distorted.[186] Or perhaps contrary evidence seems marginally relevant at first glance and stands out as "material" only when examined in conjunction with others. Prosecutors might

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179 United States v. Lucas, 841 F.3d 796, 809 (9th Cir. 2016).

180 United States v. Wurzbach, 280 U.S. 396, 399 (1930) (Holmes, J.).

181 McDonald v. United States, 335 U.S. 451, 455–56 (1948).

182 *See, e.g.*, Keith A. Findley & Michael S. Scott, *The Multiple Dimensions of Tunnel Vision in Criminal Cases*, 2 Wis. L. Rev. 291, 292 (2006).

183 *See* Schneckloth v. Bustamonte, 412 U.S. 218, 225 (1973) ("Without [police] investigation, those who were innocent might be falsely accused, those who were guilty might wholly escape prosecution, and many crimes would go unsolved. In short, the security of all would be diminished.").

184 Alafair S. Burke, *Improving Prosecutorial Decision Making: Some Lessons of Cognitive Science*, 47 Wm. & Mary L. Rev. 1587, 1597 (2006).

185 *Id.* at 1597; *see also* United States v. Bagley, 473 U.S. 667, 702 (1985) (Marshall, J., dissenting) ("The prosecutor, convinced of the guilt of the defendant and of the truthfulness of his witnesses, may all too easily view as irrelevant or unpersuasive evidence that draws his own judgments into question.").

186 Burke, *supra* note 184, at 1596; *see also* Stephanos Bibas, *The Story of* Brady v. Maryland*: From Adversarial Gamesmanship Toward the Search for Innocence?*, *in* Criminal Procedure Stories 129, 139 (Carol S. Steiker ed., 2006) ("They may thus conclude that because a piece of evidence does not change their own minds about guilt, it would not change jurors' minds either and so is not *Brady* material.").

not connect these dots.[187] Combined with the prospective nature of the "materiality" inquiry, these cognitive biases lead honest prosecutors to discount the probative weight of *Brady* evidence.[188] Our system vests prosecutors with considerable discretion to decide whether certain materials warrant disclosure. By exercising modest oversight, district judges can check prosecutors' work and deter prosecutors from cutting corners. If, as Judge Kozinski suggested, "[t]here is an epidemic of *Brady* violations abroad in the land," then "[o]nly judges can put a stop to it."[189]

B. Federal Rule of Criminal Procedure 16

The Supreme Court has made clear that the Due Process Clause does not guarantee the "general constitutional right to discovery in a criminal case."[190] *Brady* merely sets forth "a rule of fairness and minimum prosecutorial obligation."[191] But Congress and federal courts may call on prosecutors to go above the constitutional floor. The Jencks Act requires them to disclose "any statement" within their possession that "relates to the subject matter as to which the witness has testified" on direct.[192] The Federal Rules of Criminal Procedure go even further. Rule 16 requires the prosecution to disclose the defendant's prior criminal history and certain statements made by the defendant to the Government.[193] Importantly, the Rule gives access to "books, papers, documents, data, photographs, [or] tangible objects" in the Government's "possession, custody, or control," to the extent that requested items are "material to preparing the defense."[194] Rule 16(a)(1)(E) sweeps in everything which falls under *Brady*, and more.

Under Rule 16(d)(1), the district court may "deny, restrict, or defer discovery or inspection, or grant other appropriate relief" anytime upon

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187 *See* United States v. Keogh, 391 F.2d 138, 147 (2d Cir. 1968) (Friendly, J.) (explaining that "under our adversary system," whether evidence might aid the defense "is not exactly in the forefront of [the prosecutor's] mind").

188 *See* Daniel J. Capra, *Access to Exculpatory Evidence: Avoiding the* Agurs *Problems of Prosecutorial Discretion and Retrospective Review*, 53 FORDHAM L. REV. 391, 424 (1984) ("[A]ssuming that the prosecutor acts in good faith and with integrity, the fact is that he reviews his file from an advocate's point of view. Good faith and integrity do not and cannot guarantee an objective review of the file by the prosecutor.").

189 United States v. Olsen, 737 F.3d 625, 626 (9th Cir. 2013) (Kozinski, C.J., dissenting from denial of reh'g en banc).

190 Weatherford v. Bursey, 429 U.S. 545, 559 (1977); *see also* United States v. Ruiz, 536 U.S. 622, 629 (2002) ("[T]he Constitution does not require the prosecutor to share all useful information with the defendant.").

191 United States v. Maniktala, 934 F.2d 25, 28 (2d Cir. 1991) (internal quotation marks omitted).

192 18 U.S.C. § 3500(b).

193 *See* FED. R. CRIM. P. 16(a)(1)(A), (B).

194 *Id.* 16(a)(1)(E).

"good cause."[195] This language exudes deference to the district court.[196] If prosecutors fail to satisfy their discovery obligations, the court "has broad discretion in fashioning a remedy."[197] The court may consider: (1) the reasons for nondisclosure, including whether the prosecution acted in bad faith, (2) the extent of prejudice to the defense, and (3) the feasibility of curing that prejudice with the "preferred sanction" of continuance, rather than exclusion.[198] Of course, these factors are merely instructive, and "not intended to dictate the bounds of the court's discretion."[199] At bottom, the district court must issue a remedy "just under the circumstances" by balancing the defense's interest in more information against the prosecution's interest in disclosing only as much as the law requires.[200]

In cases where prosecutors know about *Brady* material, Rule 16 does little work because the Due Process Clause independently imposes an obligation to disclose. Yet "*Brady*, though not a discovery rule, affects discovery through its interplay with Rule 16."[201] That Rule builds upon *Brady* in various ways. First, Rule 16 encompasses a broader conception of "materiality."[202] The Due Process Clause kicks in only if nondisclosure would engender prejudice. Whereas Rule 16 sets a "low threshold" for materiality, sweeping in evidence which would be helpful to the defense.[203] That Rule seeks to provide the defendant "the widest possible opportunity to inspect and receive such materials in the possession of the government as may aid him in presenting his side of the case."[204]

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195 *Id.* 16(d)(1).

196 *See* United States v. Ladeaux, 61 F.4th 582, 586 (8th Cir. 2023) (discussing "the district court's broad discovery discretion").

197 United States v. Lee, 834 F.3d 145, 158 (2d Cir. 2016) (quoting United States v. Salameh, 152 F.3d 88, 130 (2d Cir. 1998)).

198 United States v. Jumaev, 20 F.4th 518, 547 (10th Cir. 2021) (citations omitted).

199 *Id.*

200 Fed. R. Crim. P. 16(d)(2)(D); *see also* United States v. Day, 524 F.3d 1361, 1372 (D.C. Cir. 2008) ("Trial courts have the discretion to weigh various options in deciding how to address a party's violation of a discovery rule.").

201 United States v. Maniktala, 934 F.2d 25, 28 (2d Cir. 1991).

202 *See* United States v. Garrison, 839 F. App'x 968, 980 (6th Cir. 2020) (finding that while undisclosed evidence "may not have been material to the outcome of the trial, as would be required to establish a *Brady* violation, it was material to preparing a defense"); *see also* United States v. Conder, 423 F.2d 904, 911 (6th Cir. 1970) ("[T]he disclosure required by Rule 16 is much broader than that required by the due process standards of *Brady*.").

203 United States v. Hernandez-Meza, 720 F.3d 760, 768 (9th Cir. 2013); *see also* United States v. Lloyd, 992 F.2d 348, 351 (D.C. Cir. 1993) (noting that the defense does not shoulder a "heavy burden").

204 United States v. Poindexter, 727 F. Supp. 1470, 1473 (D.D.C. 1989). While Rule 16 appears to hinge on defense "request," district courts may require "automatic production of all discoverable material and information in the possession of the government without a

The Ninth Circuit's decision in *Budziak* illustrates Rule 16's broad scope.[205] Facing charges of distribution and possession of child pornography, the defendant requested the "technical specifications" of the FBI's computer software used to identify fifty-two illicit files from his LimeWire account.[206] The Ninth Circuit found that the district court abused its discretion by denying the defendant's motion to compel discovery. The defendant's request targeted "potentially help[ful]" information, which might have yielded evidence that "the FBI . . . only downloaded fragments of child pornography files from his 'incomplete' folder"—files which, under his theory, he did not intend to distribute.[207] Since the distribution charge "predicated largely on computer software functioning in the manner described by the government, and the government [was] the only party with access to that software," any information which might undermine its reliability fell within the ambit of Rule 16.[208] Though prosecutors insisted that "discovery would be fruitless," "defendants should not have to rely solely on the government's word that further discovery is unnecessary."[209]

Also, Rule 16 can make a difference in cases where agencies outside the "prosecution team" possess relevant evidence. Rule 16(a) speaks of "the government" and "government agents"—not "the prosecution team" or "prosecutors."[210] Rather than rely on mushy balancing tests to measure "the degree of cooperation" between government agencies, federal courts should give Rule 16(a) the fair reading it deserves. Exercising discretion, district judges may require prosecutors to inquire whether other governmental entities possess exculpatory or impeachment evidence.[211] Prosecutors need not check off every agency

motion or request." United States v. Jones, 620 F. Supp. 2d 163, 178 (D. Mass. 2009) (discussing Local Rule 116.1).

205 697 F.3d 1105 (9th Cir. 2012).

206 *Id.* at 1107, 1112.

207 *Id.*

208 *Id.* at 1113.

209 *Id.*

210 Federal Rule of Criminal Procedure 1(b) does not define "the government." It defines "[a]ttorney for the government" as the Attorney General, United States Attorney, or their authorized assistants. But these officials merely *represent* "the government," which then must refer to an entity which extends beyond the prosecuting office. *See* United States v. Skaggs, 327 F.R.D. 165, 175 n.5 (S.D. Ohio 2018) (noting that "the text of Rule 16 itself shows that 'government possession' is a more expansive concept than just possession by the prosecution").

211 *See* United States v. Safavian, 233 F.R.D. 12, 14 (D.D.C. 2005) (explaining that "'the government' includes any and all agencies and departments of the Executive Branch of the government and their subdivisions, not just the Justice Department, the FBI, the [Office of Inspector General], and other law enforcement agencies").

in the Federal Register.[212] Due diligence will suffice. As investigations mature, prosecutors develop a good sense of which agencies might yield material evidence. For insider trading cases, prosecutors might be wise to check with the SEC. For narcotics cases, they might turn to the DEA or ATF.

Rule 16's primary advantage is its flexibility. Rather than lay down one approach for all cases, that Rule gives district judges discretion to tailor relief to the unique demands of each case, with plenty of room to adapt in light of new technology. In deciding what remedy would be "just under the circumstances,"[213] district judges might consider whether prosecutors inquired with relevant agencies in good faith, whether reaching out to more would be worthwhile, whether mandatory disclosure of sensitive information may jeopardize national security or witness protection, whether potential resource disparities between the prosecution and defense warrant broader relief, and whether prosecutors have adequate technological capabilities to undertake the proposed course of action. To be sure, prosecutors need not produce evidence if it would be unduly cumbersome to find, or when defense counsel could readily access it themselves. But if "an apparently very easy examination" comes with a "non-trivial prospect that [it] might yield material exculpatory information," prosecutors should be "put to the effort."[214]

Electronic databases make this task less daunting. Over the past two decades, federal, state, and local law enforcement have collaborated to aggregate and distribute data relevant to ensuring law and order.[215] For instance, the FBI's National Crime Information Center compiles "more than 18 million active records and . . . millions of transactions each day with a millisecond response time"—information accessible to over 100,000 law enforcement agencies nationwide.[216] Police rely on this data for all sorts of cases, from cold murders to traffic stops. Indeed, "[e]lectronic databases form the nervous system of contemporary criminal justice operations."[217] Just as they empower law enforcement to

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212 *See* United States v. Bryan, 868 F.2d 1032, 1036 (9th Cir. 1989) (clarifying that "a federal prosecutor need not comb the files of every federal agency which might have documents regarding the defendant in order to fulfill his or her obligations" under Rule 16).

213 Fed. R. Crim. P. 16(d)(2)(D).

214 United States v. Brooks, 966 F.2d 1500, 1504 (D.C. Cir. 1992).

215 *See* Bureau of Justice Assistance, *Information Sharing Resources*, U.S. Dep't of Just. (June 10, 2021), https://ncirc.bja.ojp.gov/information-sharing-resources [https://perma.cc/LGG9-GC8T] (listing a dozen federally supervised law enforcement databases).

216 Fed. Bureau of Investigation, *National Crime Information Center*, https://le.fbi.gov/informational-tools/ncic [https://perma.cc/52FH-HNS8].

217 Herring v. United States, 555 U.S. 135, 155 (2009) (Ginsburg, J., dissenting) ("[L]aw enforcement has an increasing supply of information within its easy electronic reach.").

incriminate guilty individuals, they may be used to exculpate those who would otherwise be wrongfully convicted. In many cases, district judges should invoke Rule 16 to require prosecutors to ensure that exculpatory database evidence comes to light. Because now, with help from artificial intelligence, it may well be one keyword search away.[218] This futuristic "combination of AI technology and cloud storage capability puts important information in investigators' hands quickly."[219]

Lastly, in cases where evidence is identified but its materiality is disputed, Rule 16(a)(1)(E) provides formalized procedures for in camera review. District judges may mediate discovery disputes without jeopardizing the secrecy of the challenged evidence. Currently, prosecutors serve as "the sole judge of what evidence in [their] possession is subject to disclosure."[220] Confirmation bias may skew their perception of the exculpatory or impeachment value of evidence, leading them to disclose less than what *Brady* requires. In contrast, district judges sit further removed from the investigation, and thus more competent to decide whether disputed materials are exculpatory or sufficiently important as to warrant disclosure.[221]

Both prosecutors and defendants stand to gain from greater judicial oversight before trial. More pretrial protections mean fewer postconviction motions. It is more efficient to prevent improper nondisclosures before trial than to remedy them afterwards.[222] Jury

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218 Compiling and sorting through physical files used to be "all but impossible because technology could not automatically sift through huge volumes of standardized material." Erin Murphy, *Databases, Doctrine & Constitutional Criminal Procedure*, 37 Fordham Urb. L.J. 803, 807 (2010). But now machine learning tools can "harmonize data from diverse sources into a single, coherent format." Joshua Lee, *Revolutionizing Law Enforcement Data Analytics with Advanced AI*, Police1 (Sept. 13, 2023), https://www.police1.com/police-products/investigation/investigative-software/articles/revolutionizing-law-enforcement-data-analytics-with-advanced-ai-rRpAEaXQe7Cp7iS3 [https://perma.cc/NS3Y-994F].

219 *See* Nikki Davidson, *AI–Powered Task Forces Tackle Online Child Exploitation*, Gov't Tech. (Nov. 14, 2023), https://www.govtech.com/public-safety/ai-powered-task-forces-tackle-online-child-exploitation [https://perma.cc/6Y92-TMJD] (noting that "[f]rom an investigative intelligence standpoint, [AI tools are] incredibly valuable and incredibly efficient, versus the manual ways you'd have to go through all of that data").

220 United States v. Presser, 844 F.2d 1275, 1281 (6th Cir. 1988); *see also* United States v. Bland, 517 F.3d 930, 935 (7th Cir. 2008) ("The district court is under no general independent duty to review government files for potential *Brady* material."); United States v. Iverson, 648 F.2d 737, 739 (D.C. Cir. 1981) ("[T]he primary obligation for the disclosure of matters which are essentially in the prosecutorial domain lies with the government . . . .").

221 *See* Capra, *supra* note 188, at 397 ("A better way to ensure access to exculpatory evidence while it can still benefit defendant is to put the burden of determining the favorability of evidence on an independent, objective fact-finder: the trial court.").

222 *See* United States v. Starusko, 729 F.2d 256, 261 (3d Cir. 1984) ("[W]e affirm this court's longstanding policy and applaud the district court's effort to ensure prompt compliance with *Brady*."), *abrogated on other grounds by* Dennis v. Sec'y, Pa. Dep't of Corr., 834 F.3d 263, 289–93 (3d Cir. 2016) (en banc).

selection, trial, deliberations, and then sentencing eat up significant time and resources. Defendants requesting retrial essentially seek to undo weeks (sometimes months) of work. Consciously or not, judges might hesitate to start over. Once the jury has unanimously decided to convict, hindsight bias might lead judges to discount the import of undisclosed evidence.[223] So defendants are more likely to prevail prior to trial than after conviction. And even when defendants prevail under Rule 16, prosecutors generally do not face grave setbacks. Once the court finds that the disputed materials must be disclosed, Rule 16(d)(1) authorizes the issuance of protective orders to "deny, restrict, or defer discovery" upon showing of "good cause,"[224] including the prosecution's legitimate concerns over witness safety and the confidentiality of ongoing investigations.[225]

Courts frame *Brady* doctrine with an eye toward preventing wrongful convictions *and* preserving the finality of judgments.[226] But these values are in tension. Increasing opportunities for defendants to challenge their convictions necessarily diminish the "presumption of finality and legality [which] attaches to the conviction and sentence."[227] The Supreme Court struck a balance in *Bagley*, requiring retrial only if "there is a reasonable probability that, had the evidence been disclosed to the defense, the result of the proceeding would have been different."[228] In practice, this materiality requirement "narrow[s] the scope of defendants' rights not only in appellate and postconviction

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223 *See* Lisa Kern Griffin, *Criminal Adjudication, Error Correction, and Hindsight Blind Spots*, 73 Wash. & Lee L. Rev. 165, 172 (2016) ("Belief perseverance can then make judges doubt the significance of facts that conflict with the status quo of a conviction."); Stephanos Bibas, *The Psychology of Hindsight and After-the-Fact Review of Ineffective Assistance of Counsel*, 1 Utah L. Rev. 1, 3 (2004) ("[L]ooking back at a final result, courts might regard that outcome as inevitable.").

224 Fed. R. Crim P. 16(d)(1); *see also In re* Terrorist Bombings of U.S. Embassies, 552 F.3d 93, 122 (2d Cir. 2008) (explaining that Rule 16(d) grants district courts discretion to establish conditions "under which the defense may obtain access to discoverable information").

225 Prosecutors rightfully worry that premature disclosures may allow defendants to "kill, intimidate, or bribe government witnesses into staying silent or changing their stories." Bibas, *supra* note 186, at 146; *see, e.g.*, United States v. Mitchell, No. 10–297, 2013 WL 5755627, at *2 (E.D. La. Oct. 23, 2013) (declining to compel earlier disclosure of *Brady* materials where defendant allegedly belonged in a "criminal gang well-known for extreme witness intimidation tactics"); United States v. Coppa, 267 F.3d 132, 139 (2d Cir. 2001) (noting that "early disclosure of the identities of potential witnesses could undermine undercover operations and ongoing investigations . . .").

226 *See* Spicer v. Roxbury Corr. Inst., 194 F.3d 547, 555 (4th Cir. 1999) ("*Brady* does *not* create a full-scale, constitutionally-mandated discovery right for criminal defendants. Such a rule would impose an oppressively heavy burden on prosecutors and would drastically undermine the finality of judgments.").

227 Brecht v. Abrahamson, 507 U.S. 619, 633 (1993).

228 United States v. Bagley, 473 U.S. 667, 682 (1985).

proceedings, as intended, but also at the trial court level, where finality is not at stake and where judges and other actors must decide in the first instance what rights mean and how to enforce them."[229]

Pretrial adjudication of discovery disputes offers an escape hatch, empowering district courts to decide the materiality question before the case goes to the jury. Defendants may willingly forgo their appeal because in camera review ratchets down the standard of review. While appellate courts generally review *Brady* decisions de novo, they will only reverse upon "clear error" if the district court performed an in camera inspection before trial.[230] So Rule 16 procedures offer greater certainty as to whether their conviction will stand. Both sides may structure their affairs accordingly.

C. Model Rules and Inherent Powers

Federal prosecutors' disclosure obligations extend beyond the Due Process Clause and the Federal Rules of Criminal Procedure. The Department of Justice regulates their professional conduct.[231] Congress too. Under the McDade Amendment, federal prosecutors must observe applicable "State laws and rules, and local Federal court rules" in whichever jurisdiction they practice, "to the same extent and in the same manner as other attorneys in that State."[232] So state disciplinary bodies and federal courts may promulgate and enforce "rule[s] of professional ethics clearly covered by the McDade Act."[233] This coverage extends to Model Rule of Professional Conduct 3.8(d), which requires prosecutors to timely disclose "all evidence or information known to [them] that tends to negate the guilt of the accused or mitigates the offense."[234] This Rule covers more ground than *Brady*, reaching *all* exculpatory or impeachment evidence regardless of materiality.[235] While noncompliance does not, by itself, run afoul of

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229 Murray, *supra* note 171, at 280.

230 *See* United States v. Cessa, 861 F.3d 121, 128 (5th Cir. 2017) (discussing an "exception to our general rule of *de novo* review: Where a district court has reviewed potential Brady material *in camera* and ruled that the material was not discoverable, we review that decision only for clear error.").

231 *See* 5 C.F.R. § 2635.101 (setting forth "[b]asic obligation[s] of public service" for federal employees).

232 28 U.S.C. § 530B.

233 United States v. Colo. Sup. Ct., 189 F.3d 1281, 1284 (10th Cir. 1999).

234 Model Rules of Pro. Conduct r. 3.8(d) (Am. Bar Ass'n); *see also* Richard A. Rosen, *Disciplinary Sanctions Against Prosecutors for* Brady *Violations: A Paper Tiger*, 65 N.C. L. Rev. 693, 715 (1987) ("All of the states have based their disciplinary codes to some degree on . . . the Model Code . . . .").

235 *See* Kyles v. Whitley, 514 U.S. 419, 437 (1995) (noting that *Brady* "requires less of the prosecution than the ABA Standards for Criminal Justice, which call generally for

Brady, the McDade Amendment authorizes federal courts to take steps to deter and, in extreme cases, sanction nondisclosure.[236]

Additionally, federal courts possess "inherent power to preserve the integrity of the adversary process."[237] In criminal cases, "[i]t is within the sound discretion of the district judge to make any discovery order that is not barred by higher authority."[238] This discretion goes far, arguably displacing the President's authority to "take care that the Laws be faithfully executed."[239] In *United States v. Nixon*, the Supreme Court rejected the President's motion to quash the Special Prosecutor's subpoena of White House tapes.[240] "To ensure that justice is done," the Court explained, "it is imperative to the function of courts that compulsory process be available for the production of evidence needed either by the prosecution or by the defense."[241] Accordingly, district judges may supervise discovery and intervene to compel prosecutors to disclose evidence according to precise timetables.[242] This power falls within the "basic function of the courts."[243]

While Rule 16 "is entirely silent on the issue of the form that discovery must take,"[244] it "leaves intact a court's discretion to grant or deny the broader discovery requests of a criminal defendant."[245]

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prosecutorial disclosures of any evidence tending to exculpate or mitigate"); Cone v. Bell, 556 U.S. 449, 470 n.15 (2009) ("[T]he obligation to disclose evidence favorable to the defense may arise more broadly under a prosecutor's ethical or statutory obligations.").

236 *See* United States v. Garrison, 888 F.3d 1057, 1065 (9th Cir. 2018) (explaining that where "there was flagrant prosecutorial misconduct, dismissal with prejudice may be an appropriate remedy").

237 United States v. Prevezon Holdings Ltd., 839 F.3d 227, 241 (2d Cir. 2016); *see also* United States v. Nobles, 422 U.S. 225, 231 (1975) (recognizing inherent judicial authority to ensure that "the truth-finding process may be enhanced").

238 United States v. Campagnuolo, 592 F.2d 852, 857 n.2 (5th Cir. 1979) (explaining that discovery order may be broader in scope than what *Brady* requires); *see also* FED. R. CRIM. P. 16 advisory committee's note to 1974 amendment ("The rule is intended to prescribe the minimum amount of discovery to which the parties are entitled. It is not intended to limit the judge's discretion to order broader discovery in appropriate cases."); United States v. W.R. Grace, 526 F.3d 499, 516 (9th Cir. 2008) ("As to the disclosures not mandated by Rule 16, the court has inherent authority to enforce its specific discovery order . . . .").

239 U.S. CONST. art. II, § 3.

240 418 U.S. 683, 683 (1974).

241 *Id.* at 709.

242 *See* United States v. Starusko, 729 F.2d 256, 261 (3d Cir. 1984) ("The district court may dictate by court order when *Brady* material must be disclosed, and absent an abuse of discretion, the government must abide by that order."), *abrogated on other grounds by* Dennis v. Sec'y, Pa. Dep't of Corr., 834 F.3d 263, 289–93 (3d Cir. 2016) (en banc).

243 *Nixon*, 418 U.S. at 712.

244 United States v. Warshak, 631 F.3d 266, 296 (6th Cir. 2010) (noting that Rule 16 "contains no indication that documents must be organized or indexed").

245 United States v. Richards, 659 F.3d 527, 543 (6th Cir. 2011); *see also* United States v. Rubin/Chambers, Dunhill Ins. Servs., 825 F. Supp. 2d 451, 454 (S.D.N.Y. 2011) (recognizing circumstances when courts may exercise "discretionary authority to manage" discovery).

Invoking this discretion, the district court in *Spivak* required prosecutors to organize their open file disclosure to afford defense counsel a meaningful opportunity to review.[246] During a pump-and-dump fraud investigation, the FBI seized twenty devices from the defendant's office, including "a server, computers, hard drives, and USB thumb drives."[247] When the defendant requested copies of all electronic files stored inside, he received 421,000 files in a format that was "laborious and time-consuming" to review.[248] The Court found this disclosure inadequate, directing the prosecution to reprocess, consolidate, and transmit those files in one "reasonably usable" storage device.[249] That would not be unduly onerous, as "surely by now federal investigators have sufficient knowledge and experience with processing and producing large volumes of electronically stored information."[250]

In *Spivak* and numerous other cases, "courts have started to recognize that the Government needs to impose at least some minimal organization on voluminous discovery to comply with the spirit of its statutory and constitutional obligations."[251] Whether by requiring a "load-ready file format that could be easily searched," or "detailed indices" bucketing disclosed materials into various categories,[252] or "hot document" labels flagging matters which deserve closer attention, or all of the above, district courts can do more to ensure that defense counsel can meaningfully access open file disclosures.

Judicial authority to compel discovery flows from "the nature of their institution" as "Courts of justice."[253] With that comes "power to control admission to its bar and to discipline attorneys who appear before it."[254] Courts seek guidance from the ethical norms that govern the legal profession—many codified in the Model Rules of Professional Responsibility. In *Wheat*, the Supreme Court held that district courts wield "substantial latitude" to refuse criminal defendants' waivers of possible conflicts of interest, notwithstanding the Sixth Amendment presumption of choice of counsel.[255] Federal courts possess

246 *See* United States v. Spivak, 639 F. Supp. 3d 773, 777–80 (N.D. Ohio 2022).

247 *Id.* at 775.

248 *Id.* at 776.

249 *Id.* at 779.

250 *Id.*

251 United States v. Quinones, No. 13–83S, 2015 WL 6696484, at *2 (W.D.N.Y. Nov. 2, 2015).

252 United States v. Weaver, 992 F. Supp. 2d 152, 156 (E.D.N.Y. 2014) (internal quotation marks omitted).

253 Chambers v. NASCO, Inc., 501 U.S. 32, 43 (1991) (citations omitted).

254 *Id.*

255 Wheat v. United States, 486 U.S. 153, 163–64 (1988) ("Not only the interest of a criminal defendant but the institutional interest in the rendition of just verdicts in criminal cases may be jeopardized by unregulated multiple representation.").

"an independent interest in ensuring that criminal trials are conducted within the ethical standards of the profession and that legal proceedings appear fair to all who observe them."[256] The last word belongs to "the informed judgment of the trial court."[257]

District judges are rightfully wary to take on more work. My proposal does not call on them to micromanage run-of-the-mill discovery issues, nor devote long hours to learning the ins and outs of each case before trial. Our civil system sheds light on what criminal discovery can—and should—look like. As in civil cases, district courts should give first pass to the parties themselves.[258] Prosecutors and defense counsel will confer and jointly propose a discovery plan outlining what evidence will be disclosed, what format those disclosures will take, and which sources merit further investigation. Like civil litigants, both must try to resolve "any issues about disclosure, discovery, or preservation of electronically stored information, including the form or forms in which it should be produced."[259] The district (or magistrate) judge intervenes only if both parties reach stalemate, unable to agree "in good faith" on a proposed discovery plan.[260] In most cases, these repeat players will resolve discovery disputes through the give-and-take of informal bargaining,[261] as is frequently the case with plea negotiations and proffer agreements in which defendants waive their rights in exchange for potential leniency.[262]

Furthermore, district courts can manage the additional work of overseeing criminal discovery because most cases settle before *Brady*

256 *Id.* at 160 (citing MODEL CODE OF PRO. RESP. DR 5–105(C) (AM. BAR ASS'N 1980)).

257 *Id.* at 164.

258 FED. R. CIV. P. 26(f)(1); *see* Russell M. Gold, Carissa B. Hessick & F. Andrew Hessick, *Civilizing Criminal Settlements*, 97 B.U. L. REV. 1607, 1659 (2017) ("Civil procedures promote settlement by helping the parties form more accurate assessments of their positions and find common ground between them.").

259 FED. R. CIV. P. 26(f)(3)(C).

260 *Id.* 26(f)(2).

261 *See* Jenia I. Turner, *Managing Digital Discovery in Criminal Cases*, 109 J. CRIM. L. & CRIMINOLOGY 237, 241 (2019) (arguing that "the volume, complexity, and cost of digital discovery will incentivize the prosecution and the defense to cooperate more closely in cases with significant amounts of [electronically stored information]").

262 While strong-arm tactics raise concerns about prosecutorial abuse, defendants are worse off in a system where transaction costs are high. As prosecutors invest more resources in a case, their incentive to settle tends to diminish. Guilty defendants must either accept more punitive bargains or proceed to trial despite overwhelming incriminating evidence. *See* Stephanos Bibas, *Plea Bargaining Outside the Shadow of Trial*, 117 HARV. L. REV. 2463, 2494 (2004) ("Guilty defendants generally know that they are guilty, and are aware of the likely evidence against them, so they can predict the probable trial outcomes."); *see also* Brady v. United States, 397 U.S. 742, 755 (1970) ("Often the decision to plead guilty is heavily influenced by the defendant's appraisal of the prosecution's case against him and by the apparent likelihood of securing leniency should a guilty plea by offered and accepted.").

obligations kick in. Prosecutors need not turn over *Brady* materials as soon as practicable. So long as the defendant receives "*Brady* evidence in time for its effective use," he cannot complain that prosecutors "did not produce the evidence sooner."[263] In *Ruiz*, the Supreme Court held that the prosecution need not disclose impeachment evidence before the plea allocution.[264] Most lower courts have extended *Ruiz* to exculpatory evidence.[265] Given that district judges retain vast discretion to set production schedules "as a matter of sound case management,"[266] they can adjust timetables based on their predictions for how the case will proceed. If parties appear likely to settle, as when the prosecution's case is overwhelming or the defendant's sentencing exposure is low, district judges need not prematurely wade into tedious discovery disputes. But once it becomes apparent that the case will advance to trial, judges should step in to ensure that prosecutors seek out and turn over materials outlined in the discovery plan, so that the defendant might be armed with evidence probative of their innocence. Only then is a "fair trial in a fair tribunal" possible.[267]

Conclusion

One century ago, Learned Hand observed that our federal criminal procedure "has been always haunted by the ghost of the innocent man convicted."[268] This "ghost," he argued, "is an unreal dream."[269] But over time, federal courts have come to recognize that wrongful conviction is

263 United States v. Coppa, 267 F.3d 132, 144 (2d Cir. 2001); *see also* United States v. Lowery, 284 F. App'x 64, 69 (4th Cir. 2008) (noting that "the time necessary for effective use at trial may even include disclosure at trial itself").

264 United States v. Ruiz, 536 U.S. 622, 629 (2002). The defendant's inability to access *Brady* materials tends to weaken his bargaining position. This Note takes no position on whether prosecutors should be required, as a matter of due process, to turn over materials sooner.

265 *Compare* Alvarez v. City of Brownsville, 904 F.3d 382, 392 (5th Cir. 2018) (finding "no constitutional right to *Brady* material prior to a guilty plea"), *and* United States v. Mathur, 624 F.3d 498, 507 (1st Cir. 2010) ("[W]hen a defendant chooses to admit his guilt, *Brady* concerns subside."), *with* Parker v. Cnty. of Riverside, 78 F.4th 1109, 1113 (9th Cir. 2023) (allowing defendants to withdraw guilty plea if they can establish "a reasonable probability that but for the failure to disclose the *Brady* material, [they] would have refused to plead and would have gone to trial").

266 *See Coppa*, 267 F.3d at 146 (remanding case "to afford the District Court an opportunity to determine what disclosure order, if any, it deems appropriate . . ."); United States v. Cerna, 633 F. Supp. 2d 1053, 1057 (N.D. Cal. 2009) ("[A] district court may set a deadline before trial to disclose all non-*Jencks Brady* material.").

267 *In re* Murchison, 349 U.S. 133, 136 (1955).

268 United States v. Garsson, 291 F. 646, 649 (S.D.N.Y. 1923).

269 *Id.*

no bogeyman.[270] The Supreme Court has interpreted the Due Process Clause to target that danger. The "prime instrument for reducing the risk of convictions resting on factual error" is the prerequisite that criminal convictions follow proof beyond reasonable doubt.[271] Every prosecutor claims to embrace that burden. So too for their disclosure obligations. The concerns underlying *Brady* do not stem from "the archaic formalism and the watery sentiment that obstructs, delays, and defeats the prosecution of crime."[272] At base, *Brady* ensures that the innocent goes free, not that the guilty may evade just deserts. And even for defendants who are guilty as charged, *Brady* ensures that the sentencing judge will be adequately informed of their criminal conduct and personal circumstances, such that "a sentence sufficient, but not greater than necessary, to comply with the purposes" of sentencing may be imposed.[273]

Brady and its progeny delineate "what might loosely be called the area of constitutionally guaranteed access to evidence."[274] That area is shrinking day by day. Now that technology has become a "pervasive and insistent part of daily life," not even the cleverest criminal can hide their digital footprint.[275] Throughout an investigation, law enforcement officials amass oceans of information. *Brady* presumes that this "superior prosecutorial investigatory apparatus" will scoop up exculpatory and impeachment evidence along the way.[276] But this apparatus cannot sift through terabytes of data to determine what is what. Only scratching the surface, prosecutors have no clue whether (and how much) *Brady* material lies within their voluminous case file. Out of caution, many resort to an open file policy, shifting the onus to defense counsel to pore over mountains of data. With lesser resources and insights into police techniques, defense counsel is unlikely to fare any better.

Brady doctrine has yet to respond to technological realities. That is a feature, not a bug. Constitutional principles stand on their own.

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270 *See* California v. Trombetta, 467 U.S. 479, 485 (1984) (noting that various "constitutional privileges deliver[] exculpatory evidence into the hands of the accused, thereby protecting the innocent from erroneous conviction and ensuring the integrity of our criminal justice system").

271 *In re* Winship, 397 U.S. 358, 363–64 (1970) ("[A] society that values the good name and freedom of every individual should not condemn a man for commission of a crime when there is reasonable doubt about his guilt.").

272 *Id.*

273 18 U.S.C. § 3553(a) (articulating "the need" for retribution, deterrence, public safety, and rehabilitation).

274 United States v. Valenzuela-Bernal, 458 U.S. 858, 867 (1982).

275 Riley v. California, 573 U.S. 373, 385 (2014).

276 United States v. Tavera, 719 F.3d 705, 712 (6th Cir. 2013).

It is incumbent on courts to apply them to new circumstances.[277] By channeling *Brady* disputes through postconviction review, our all-or-nothing remedial system forces courts to choose between affording complete relief through retrial, or no relief at all. For the sake of judicial economy and fundamental fairness, district judges should adjudicate *Brady* issues before trial, so as to avoid postconviction grievances.

Indeed, *Brady* does not purport to constrain district judges' broad discretion in criminal cases to supervise discovery and regulate professional conduct. That flows from Rule 16 and their inherent authority. Greater judicial oversight over discovery will help ensure that prosecutors fully comply with their legal and ethical obligations. District courts already possess the tools to fulfill the due process promise that "a miscarriage of justice does not occur."[278] What remains is for judges to put those modest tools to good use.

[277] *See* Sutton, *supra* note 115, at 263 ("Even after the judge has figured out how a new technology works, there remains the job of applying the old law to it. That is no easy task.").

[278] United States v. Bagley, 473 U.S. 667, 675 (1985).