

07-591 (2009)
MELLENDEZ-DIAZ v. MASSACHUSETTS
129 S.Ct.

SUPREME COURT OF THE UNITED STATES

LUIS E. MELLENDEZ-DIAZ, PETITIONER v.
MASSACHUSETTS

certiorari to the appeals court of massachusetts

No. 07-591

Argued November 10, 2008

Decided June 25, 2009

At petitioner's state-court drug trial, the prosecution introduced certificates of state laboratory analysts stating that material seized by police and connected to petitioner was cocaine of a certain quantity. As required by Massachusetts law, the certificates were sworn to before a notary public and were submitted as prima facie evidence of what they asserted. Petitioner objected, asserting that *Crawford v. Washington*, 541 U. S. 36, required the analysts to testify in person. The trial court disagreed, the certificates were admitted, and petitioner was convicted. The Massachusetts Appeals Court affirmed, rejecting petitioner's claim that the certificates' admission violated the Sixth Amendment.

Held: The admission of the certificates violated petitioner's Sixth Amendment right to confront the witnesses against him. Pp. 3-23.

(a) Under *Crawford*, a witness's testimony against a defendant is inadmissible unless the witness appears at trial or, if the witness is unavailable, the defendant had a prior opportunity for cross-examination. 541 U. S., at 54. The certificates here are affidavits, which fall within the "core class of testimonial statements" covered by the Confrontation Clause, *id.*, at 51. They asserted that the substance found in petitioner's possession was, as the prosecution claimed, cocaine of a certain weight—the precise testimony the analysts would be expected to provide if called at trial. Not only were the certificates made, as *Crawford* required for testimonial statements, "under circumstances which would lead an objective witness reasonably to believe that the statement would be available for use at a later trial," *id.*, at 52, but under the relevant Massachusetts law their sole purpose was to provide prima facie evidence of the substance's composition, quality, and net weight. Petitioner was entitled to "be confronted with" the persons giving this testimony at trial. *Id.*, at 54. Pp. 3-5.

(b) The arguments advanced to avoid this rather straightforward application of *Crawford* are rejected. Respondent's claim that the analysts are not subject to confrontation because they are not "accusatory" witnesses finds no support in the Sixth Amendment's text or in this Court's case law. The affiants' testimonial statements were not "nearly contemporaneous" with their observations, nor, if they had been, would that fact alter the statements' testimonial character. There is no support for the proposition that witnesses who testify regarding facts other than those observed at the crime scene are exempt from confrontation. The absence of interrogation is irrelevant; a witness who volunteers his testimony is no less a witness for Sixth Amendment purposes. The affidavits do not qualify as traditional official or business records. The argument that the analysts should not be subject to confrontation because their statements result from neutral scientific testing is little more than an invitation to return to the since-overruled decision in *Ohio v. Roberts*, 448 U. S. 56, which held that evidence with "particularized guarantees of trustworthiness" was admissible without confrontation. Petitioner's power to subpoena the analysts is no substitute for the right of confrontation. Finally, the requirements of the Confrontation Clause may not be relaxed because they make the prosecution's task burdensome. In any event, the practice in many States already accords with today's decision, and the serious disruption predicted by respondent and the dissent has not materialized. Pp. 5-23.

69 Mass. App. 1114, 870 N. E. 2d 676, reversed and remanded.

Scalia, J., delivered the opinion of the Court, in which Stevens, Souter, Thomas, and Ginsburg, JJ., joined. Thomas, J., filed a concurring opinion. Kennedy, J., filed a dissenting opinion, in which Roberts, C. J., and Breyer and Alito, JJ., joined.

Justice Scalia delivered the opinion of the Court.

The Massachusetts courts in this case admitted into evidence affidavits reporting the results of forensic analysis which showed that material seized by the police and connected to the defendant was cocaine. The question presented is whether those affidavits are "testimonial," rendering the affiants "witnesses" subject to the defendant's right of confrontation under the Sixth Amendment.

I

In 2001, Boston police officers received a tip that a

Kmart employee, Thomas Wright, was engaging in suspicious activity. The informant reported that Wright repeatedly received phone calls at work, after each of which he would be picked up in front of the store by a blue sedan, and would return to the store a short time later. The police set up surveillance in the Kmart parking lot and witnessed this precise sequence of events. When Wright got out of the car upon his return, one of the officers detained and searched him, finding four clear white plastic bags containing a substance resembling cocaine. The officer then signaled other officers on the scene to arrest the two men in the car—one of whom was petitioner Luis Melendez-Diaz. The officers placed all three men in a police cruiser.

During the short drive to the police station, the officers observed their passengers fidgeting and making furtive movements in the back of the car. After depositing the men at the station, they searched the police cruiser and found a plastic bag containing 19 smaller plastic bags hidden in the partition between the front and back seats. They submitted the seized evidence to a state laboratory required by law to conduct chemical analysis upon police request. Mass. Gen. Laws, ch. 111, §12 (West 2006).

Melendez-Diaz was charged with distributing cocaine and with trafficking in cocaine in an amount between 14 and 28 grams. Ch. 94C, §§32A, 32E(b)(1). At trial, the prosecution placed into evidence the bags seized from Wright and from the police cruiser. It also submitted three "certificates of analysis" showing the results of the forensic analysis performed on the seized substances. The certificates reported the weight of the seized bags and stated that the bags "[h]a[ve] been examined with the following results: The substance was found to contain: Cocaine." App. to Pet. for Cert. 24a, 26a, 28a. The certificates were sworn to before a notary public by analysts at the State Laboratory Institute of the Massachusetts Department of Public Health, as required under Massachusetts law. Mass. Gen. Laws, ch. 111, §13.

Petitioner objected to the admission of the certificates, asserting that our Confrontation Clause decision in *Crawford v. Washington*, 541 U. S. 36 (2004), required the analysts to testify in person. The objection was overruled, and the certificates were admitted pursuant to state law as "prima facie evidence of the composition, quality, and the net weight of the narcotic . . . analyzed." Mass. Gen. Laws, ch. 111, §13.

The jury found Melendez-Diaz guilty. He appealed, contending, among other things, that admission of the certificates violated his Sixth Amendment right to be confronted with the witnesses against him. The Appeals Court of Massachusetts rejected the claim, affirmance order, 69 Mass. App. 1114, 870 N. E. 2d 676, 2007 WL 2189152, *4, n. 3 (July 31, 2007), relying on the Massachusetts Supreme Judicial Court's decision in *Commonwealth v. Verde*, 444 Mass. 279, 283-285, 827 N. E. 2d 701, 705-706 (2005), which held that the authors

of certificates of forensic analysis are not subject to confrontation under the Sixth Amendment. The Supreme Judicial Court denied review. 449 Mass. 1113, 874 N. E. 2d 407 (2007). We granted certiorari. 552 U. S. ____ (2008).

II

The Sixth Amendment to the United States Constitution, made applicable to the States via the Fourteenth Amendment, *Pointer v. Texas*, 380 U. S. 400, 403 (1965), provides that "[i]n all criminal prosecutions, the accused shall enjoy the right . . . to be confronted with the witnesses against him." In *Crawford*, after reviewing the Clause's historical underpinnings, we held that it guarantees a defendant's right to confront those "who 'bear testimony' " against him. 541 U. S., at 51. A witness's testimony against a defendant is thus inadmissible unless the witness appears at trial or, if the witness is unavailable, the defendant had a prior opportunity for cross-examination. *Id.*, at 54.

Our opinion described the class of testimonial statements covered by the Confrontation Clause as follows:

"Various formulations of this core class of testimonial statements exist: ex parte in-court testimony or its functional equivalent—that is, material such as affidavits, custodial examinations, prior testimony that the defendant was unable to cross-examine, or similar pretrial statements that declarants would reasonably expect to be used prosecutorially; extrajudicial statements . . . contained in formalized testimonial materials, such as affidavits, depositions, prior testimony, or confessions; statements that were made under circumstances which would lead an objective witness reasonably to believe that the statement would be available for use at a later trial." *Id.*, at 51-52 (internal quotation marks and citations omitted).

There is little doubt that the documents at issue in this case fall within the "core class of testimonial statements" thus described. Our description of that category mentions affidavits twice. See also *White v. Illinois*, 502 U. S. 346, 365 (1992) (Thomas, J., concurring in part and concurring in judgment) ("[T]he Confrontation Clause is implicated by extrajudicial statements only insofar as they are contained in formalized testimonial materials, such as affidavits, depositions, prior testimony, or confessions"). The documents at issue here, while denominated by Massachusetts law "certificates," are quite plainly affidavits: "declaration[s] of facts written down and sworn to by the declarant before an officer authorized to administer oaths." *Black's Law Dictionary* 62 (8th ed. 2004). They are incontrovertibly a "solemn declaration or affirmation made for the purpose of establishing or proving some fact." *Crawford*, *supra*, at 51 (quoting 2 N. Webster, *An American Dictionary of the English*

Language (1828)). The fact in question is that the substance found in the possession of Melendez-Diaz and his codefendants was, as the prosecution claimed, cocaine-the precise testimony the analysts would be expected to provide if called at trial. The "certificates" are functionally identical to live, in-court testimony, doing "precisely what a witness does on direct examination." *Davis v. Washington*, 547 U. S. 813, 830 (2006) (emphasis deleted).

Here, moreover, not only were the affidavits "made under circumstances which would lead an objective witness reasonably to believe that the statement would be available for use at a later trial," *Crawford*, supra, at 52, but under Massachusetts law the sole purpose of the affidavits was to provide "prima facie evidence of the composition, quality, and the net weight" of the analyzed substance, Mass. Gen. Laws, ch. 111, §13. We can safely assume that the analysts were aware of the affidavits' evidentiary purpose, since that purpose-as stated in the relevant state-law provision-was reprinted on the affidavits themselves. See App. to Pet. for Cert. 25a, 27a, 29a.

In short, under our decision in *Crawford* the analysts' affidavits were testimonial statements, and the analysts were "witnesses" for purposes of the Sixth Amendment . Absent a showing that the analysts were unavailable to testify at trial and that petitioner had a prior opportunity to cross-examine them, petitioner was entitled to " 'be confronted with' " the analysts at trial. *Crawford*, supra, at 54.1

III

Respondent and the dissent advance a potpourri of analytic arguments in an effort to avoid this rather straightforward application of our holding in *Crawford*. Before addressing them, however, we must assure the reader of the falsity of the dissent's opening alarm that we are "sweep[ing] away an accepted rule governing the admission of scientific evidence" that has been "established for at least 90 years" and "extends across at least 35 States and six Federal Courts of Appeals." Post, at 1 (opinion of Kennedy, J.).

The vast majority of the state-court cases the dissent cites in support of this claim come not from the last 90 years, but from the last 30, and not surprisingly nearly all of them rely on our decision in *Ohio v. Roberts*, 448 U. S. 56 (1980) , or its since-rejected theory that unconfrosted testimony was admissible as long as it bore indicia of reliability, *id.*, at 66. See post, at 30.2 As for the six Federal Courts of Appeals cases cited by the dissent, five of them postdated and expressly relied on *Roberts*. See post, at 21-22. The sixth predated *Roberts* but relied entirely on the same erroneous theory. See *Kay v. United States*, 255 F. 2d 476, 480-481 (CA4 1958) (rejecting confrontation clause challenge "where there is reasonable necessity for [the evidence] and where . . . the evidence

has those qualities of reliability and trustworthiness").

A review of cases that predate the *Roberts* era yields a mixed picture. As the dissent notes, three state supreme court decisions from the early 20th century denied confrontation with respect to certificates of analysis regarding a substance's alcohol content. See post, at 21 (citing cases from Massachusetts, Connecticut, and Virginia). But other state courts in the same era reached the opposite conclusion. See *Torres v. State*, 18 S. W. 2d 179, 180 (Tex. Crim. App. 1929); *Volrich v. State*, No. 278, 1925 WL 2473 (Ohio App., Nov. 2, 1925). At least this much is entirely clear: In faithfully applying *Crawford* to the facts of this case, we are not overruling 90 years of settled jurisprudence. It is the dissent that seeks to overturn precedent by resurrecting *Roberts* a mere five years after it was rejected in *Crawford*.

We turn now to the various legal arguments raised by respondent and the dissent.

A

Respondent first argues that the analysts are not subject to confrontation because they are not "accusatory" witnesses, in that they do not directly accuse petitioner of wrongdoing; rather, their testimony is inculpatory only when taken together with other evidence linking petitioner to the contraband. See Brief for Respondent 10. This finds no support in the text of the Sixth Amendment or in our case law.

The Sixth Amendment guarantees a defendant the right "to be confronted with the witnesses against him." (Emphasis added.) To the extent the analysts were witnesses (a question resolved above), they certainly provided testimony against petitioner, proving one fact necessary for his conviction-that the substance he possessed was cocaine. The contrast between the text of the Confrontation Clause and the text of the adjacent Compulsory Process Clause confirms this analysis. While the Confrontation Clause guarantees a defendant the right to be confronted with the witnesses "against him," the Compulsory Process Clause guarantees a defendant the right to call witnesses "in his favor." U. S. Const., Amdt. 6. The text of the Amendment contemplates two classes of witnesses-those against the defendant and those in his favor. The prosecution must produce the former;³ the defendant may call the latter. Contrary to respondent's assertion, there is not a third category of witnesses, helpful to the prosecution, but somehow immune from confrontation.

It is often, indeed perhaps usually, the case that an adverse witness's testimony, taken alone, will not suffice to convict. Yet respondent fails to cite a single case in which such testimony was admitted absent a defendant's opportunity to cross-examine.⁴ Unsurprisingly, since such a holding would be contrary to longstanding case law. In *Kirby v. United States*, 174 U. S. 47 (1899) , the

Court considered Kirby's conviction for receiving stolen property, the evidence for which consisted, in part, of the records of conviction of three individuals who were found guilty of stealing the relevant property. *Id.*, at 53. Though this evidence proved only that the property was stolen, and not that Kirby received it, the Court nevertheless ruled that admission of the records violated Kirby's rights under the Confrontation Clause. *Id.*, at 55. See also *King v. Turner*, 1 Mood. 347, 168 Eng. Rep. 1298 (1832) (confession by one defendant to having stolen certain goods could not be used as evidence against another defendant accused of receiving the stolen property).

B

Respondent and the dissent argue that the analysts should not be subject to confrontation because they are not "conventional" (or "typical" or "ordinary") witnesses of the sort whose *ex parte* testimony was most notoriously used at the trial of Sir Walter Raleigh. *Post*, at 15-16; Brief for Respondent 28. It is true, as the Court recognized in *Crawford*, that *ex parte* examinations of the sort used at Raleigh's trial have "long been thought a paradigmatic confrontation violation." 541 U. S., at 52. But the paradigmatic case identifies the core of the right to confrontation, not its limits. The right to confrontation was not invented in response to the use of the *ex parte* examinations in Raleigh's Case, 2 How. St. Tr. 1 (1603). That use provoked such an outcry precisely because it flouted the deeply rooted common-law tradition "of live testimony in court subject to adversarial testing." *Crawford*, *supra*, at 43 (citing 3 W. Blackstone, *Commentaries on the Laws of England* 373-374 (1768)). See also *Crawford*, *supra*, at 43-47.

In any case, the purported distinctions respondent and the dissent identify between this case and Sir Walter Raleigh's "conventional" accusers do not survive scrutiny. The dissent first contends that a "conventional witness recalls events observed in the past, while an analyst's report contains near-contemporaneous observations of the test." *Post*, at 16-17. It is doubtful that the analyst's reports in this case could be characterized as reporting "near-contemporaneous observations"; the affidavits were completed almost a week after the tests were performed. See App. to Pet. for Cert. 24a-29a (the tests were performed on November 28, 2001, and the affidavits sworn on December 4, 2001). But regardless, the dissent misunderstands the role that "near-contemporaneity" has played in our case law. The dissent notes that that factor was given "substantial weight" in *Davis*, *post*, at 17, but in fact that decision disproves the dissent's position. There the Court considered the admissibility of statements made to police officers responding to a report of a domestic disturbance. By the time officers arrived the assault had ended, but the victim's statements-written and oral-were sufficiently close in time to the alleged assault that the trial court admitted her affidavit as a "present sense impression."

Davis, 547 U. S., at 820 (internal quotation marks omitted). Though the witness's statements in *Davis* were "near-contemporaneous" to the events she reported, we nevertheless held that they could not be admitted absent an opportunity to confront the witness. *Id.*, at 830.

A second reason the dissent contends that the analysts are not "conventional witnesses" (and thus not subject to confrontation) is that they "observe[d] neither the crime nor any human action related to it." *Post*, at 17. The dissent provides no authority for this particular limitation of the type of witnesses subject to confrontation. Nor is it conceivable that all witnesses who fit this description would be outside the scope of the Confrontation Clause. For example, is a police officer's investigative report describing the crime scene admissible absent an opportunity to examine the officer? The dissent's novel exception from coverage of the Confrontation Clause would exempt all expert witnesses-a hardly "unconventional" class of witnesses.

A third respect in which the dissent asserts that the analysts are not "conventional" witnesses and thus not subject to confrontation is that their statements were not provided in response to interrogation. *Ibid.* See also Brief for Respondent 29. As we have explained, "[t]he Framers were no more willing to exempt from cross-examination volunteered testimony or answers to open-ended questions than they were to exempt answers to detailed interrogation." *Davis*, *supra*, at 822-823, n. 1. Respondent and the dissent cite no authority, and we are aware of none, holding that a person who volunteers his testimony is any less a "witness against" the defendant." Brief for Respondent 26, than one who is responding to interrogation. In any event, the analysts' affidavits in this case were presented in response to a police request. See Mass. Gen. Laws, ch. 111, §§12-13. If an affidavit submitted in response to a police officer's request to "write down what happened" suffices to trigger the Sixth Amendment's protection (as it apparently does, see *Davis*, 547 U. S., at 819-820; *id.*, at 840, n. 5 (Thomas, J., concurring in judgment in part and dissenting in part)), then the analysts' testimony should be subject to confrontation as well.

C

Respondent claims that there is a difference, for Confrontation Clause purposes, between testimony recounting historical events, which is "prone to distortion or manipulation," and the testimony at issue here, which is the "result of neutral, scientific testing." Brief for Respondent 29. Relatedly, respondent and the dissent argue that confrontation of forensic analysts would be of little value because "one would not reasonably expect a laboratory professional . . . to feel quite differently about the results of his scientific test by having to look at the defendant." *Id.*, at 31 (internal quotation marks omitted); see *post*, at 10-11.

This argument is little more than an invitation to return to our overruled decision in *Roberts*, 448 U. S. 56 , which held that evidence with "particularized guarantees of trustworthiness" was admissible notwithstanding the Confrontation Clause. *Id.*, at 66. What we said in *Crawford* in response to that argument remains true:

"To be sure, the Clause's ultimate goal is to ensure reliability of evidence, but it is a procedural rather than a substantive guarantee. It commands, not that evidence be reliable, but that reliability be assessed in a particular manner: by testing in the crucible of cross-examination. . . . Dispensing with confrontation because testimony is obviously reliable is akin to dispensing with jury trial because a defendant is obviously guilty. This is not what the Sixth Amendment prescribes." 541 U. S., at 61-62.

Respondent and the dissent may be right that there are other ways-and in some cases better ways-to challenge or verify the results of a forensic test.⁵ But the Constitution guarantees one way: confrontation. We do not have license to suspend the Confrontation Clause when a preferable trial strategy is available.

Nor is it evident that what respondent calls "neutral scientific testing" is as neutral or as reliable as respondent suggests. Forensic evidence is not uniquely immune from the risk of manipulation. According to a recent study conducted under the auspices of the National Academy of Sciences, "[t]he majority of [laboratories producing forensic evidence] are administered by law enforcement agencies, such as police departments, where the laboratory administrator reports to the head of the agency." National Research Council of the National Academies, *Strengthening Forensic Science in the United States: A Path Forward* 6-1 (Prepublication Copy Feb. 2009) (hereinafter *National Academy Report*). And "[b]ecause forensic scientists often are driven in their work by a need to answer a particular question related to the issues of a particular case, they sometimes face pressure to sacrifice appropriate methodology for the sake of expediency." *Id.*, at S-17. A forensic analyst responding to a request from a law enforcement official may feel pressure-or have an incentive-to alter the evidence in a manner favorable to the prosecution.

Confrontation is one means of assuring accurate forensic analysis. While it is true, as the dissent notes, that an honest analyst will not alter his testimony when forced to confront the defendant, post, at 10, the same cannot be said of the fraudulent analyst. See Brief for National Innocence Network as Amicus Curiae 15-17 (discussing cases of documented "drylabbing" where forensic analysts report results of tests that were never performed); *National Academy Report* 1-8 to 1-10 (discussing documented cases of fraud and error involving the use of forensic evidence). Like the eyewitness who has fabricated his account to the police, the analyst who provides false results may, under oath in open court, reconsider his false testimony. See *Coy v.*

Iowa, 487 U. S. 1012, 1019 (1988) . And, of course, the prospect of confrontation will deter fraudulent analysis in the first place.

Confrontation is designed to weed out not only the fraudulent analyst, but the incompetent one as well. Serious deficiencies have been found in the forensic evidence used in criminal trials. One commentator asserts that "[t]he legal community now concedes, with varying degrees of urgency, that our system produces erroneous convictions based on discredited forensics." Metzger, *Cheating the Constitution*, 59 *Vand. L. Rev.* 475, 491 (2006). One study of cases in which exonerating evidence resulted in the overturning of criminal convictions concluded that invalid forensic testimony contributed to the convictions in 60% of the cases. Garrett & Neufeld, *Invalid Forensic Science Testimony and Wrongful Convictions*, 95 *Va. L. Rev.* 1, 14 (2009). And the *National Academy Report* concluded:

"The forensic science system, encompassing both research and practice, has serious problems that can only be addressed by a national commitment to overhaul the current structure that supports the forensic science community in this country." *National Academy Report P-1* (emphasis in original).⁶

Like expert witnesses generally, an analyst's lack of proper training or deficiency in judgment may be disclosed in cross-examination.

This case is illustrative. The affidavits submitted by the analysts contained only the bare-bones statement that "[t]he substance was found to contain: Cocaine." App. to Pet. for Cert. 24a, 26a, 28a. At the time of trial, petitioner did not know what tests the analysts performed, whether those tests were routine, and whether interpreting their results required the exercise of judgment or the use of skills that the analysts may not have possessed. While we still do not know the precise tests used by the analysts, we are told that the laboratories use "methodology recommended by the Scientific Working Group for the Analysis of Seized Drugs," App. to Brief for Petitioner 1a-2a. At least some of that methodology requires the exercise of judgment and presents a risk of error that might be explored on cross-examination. See 2 P. Giannelli & E. Imwinkelried, *Scientific Evidence* §23.03[c], pp. 532-533, ch. 23A, p. 607 (4th ed. 2007) (identifying four "critical errors" that analysts may commit in interpreting the results of the commonly used gas chromatography/mass spectrometry analysis); Shellow, *The Application of Daubert to the Identification of Drugs*, 2 *Shepard's Expert & Scientific Evidence Quarterly* 593, 600 (1995) (noting that while spectrometers may be equipped with computerized matching systems, "forensic analysts in crime laboratories typically do not utilize this feature of the instrument, but rely exclusively on their subjective judgment").

The same is true of many of the other types of forensic evidence commonly used in criminal prosecutions. "[T]here is wide variability across forensic science disciplines with regard to techniques, methodologies, reliability, types and numbers of potential errors, research, general acceptability, and published material." National Academy Report S-5. See also *id.*, at 5-9, 5-12, 5-17, 5-21 (discussing problems of subjectivity, bias, and unreliability of common forensic tests such as latent fingerprint analysis, pattern/impression analysis, and toolmark and firearms analysis). Contrary to respondent's and the dissent's suggestion, there is little reason to believe that confrontation will be useless in testing analysts' honesty, proficiency, and methodology-the features that are commonly the focus in the cross-examination of experts.

D

Respondent argues that the analysts' affidavits are admissible without confrontation because they are "akin to the types of official and business records admissible at common law." Brief for Respondent 35. But the affidavits do not qualify as traditional official or business records, and even if they did, their authors would be subject to confrontation nonetheless.

Documents kept in the regular course of business may ordinarily be admitted at trial despite their hearsay status. See Fed. Rule Evid. 803(6). But that is not the case if the regularly conducted business activity is the production of evidence for use at trial. Our decision in *Palmer v. Hoffman*, 318 U. S. 109 (1943), made that distinction clear. There we held that an accident report provided by an employee of a railroad company did not qualify as a business record because, although kept in the regular course of the railroad's operations, it was "calculated for use essentially in the court, not in the business." *Id.*, at 114.7 The analysts' certificates-like police reports generated by law enforcement officials-do not qualify as business or public records for precisely the same reason. See Rule 803(8) (defining public records as "excluding, however, in criminal cases matters observed by police officers and other law enforcement personnel").

Respondent seeks to rebut this limitation by noting that at common law the results of a coroner's inquest were admissible without an opportunity for confrontation. But as we have previously noted, whatever the status of coroner's reports at common law in England, they were not accorded any special status in American practice. See *Crawford*, 541 U. S., at 47, n. 2; *Giles v. California*, 554 U. S. ___, ___ (2008) (slip op., at 20) (Breyer, J., dissenting); *Evidence-Official Records-Coroner's Inquest*, 65 U. Pa. L. Rev. 290 (1917).

The dissent identifies a single class of evidence which, though prepared for use at trial, was traditionally admissible: a clerk's certificate authenticating an official record-or a copy thereof-for use as evidence. See post, at

19. But a clerk's authority in that regard was narrowly circumscribed. He was permitted "to certify to the correctness of a copy of a record kept in his office," but had "no authority to furnish, as evidence for the trial of a lawsuit, his interpretation of what the record contains or shows, or to certify to its substance or effect." *State v. Wilson*, 141 La. 404, 409, 75 So. 95, 97 (1917). See also *State v. Champion*, 116 N. C. 987, 21 S. E. 700, 700-701 (1895); 5 J. Wigmore, *Evidence* §1678 (3d ed. 1940). The dissent suggests that the fact that this exception was " 'narrowly circumscribed' " makes no difference. See post, at 20. To the contrary, it makes all the difference in the world. It shows that even the line of cases establishing the one narrow exception the dissent has been able to identify simultaneously vindicates the general rule applicable to the present case. A clerk could by affidavit authenticate or provide a copy of an otherwise admissible record, but could not do what the analysts did here: create a record for the sole purpose of providing evidence against a defendant.⁸

Far more probative here are those cases in which the prosecution sought to admit into evidence a clerk's certificate attesting to the fact that the clerk had searched for a particular relevant record and failed to find it. Like the testimony of the analysts in this case, the clerk's statement would serve as substantive evidence against the defendant whose guilt depended on the nonexistence of the record for which the clerk searched. Although the clerk's certificate would qualify as an official record under respondent's definition-it was prepared by a public officer in the regular course of his official duties-and although the clerk was certainly not a "conventional witness" under the dissent's approach, the clerk was nonetheless subject to confrontation. See *People v. Bromwich*, 200 N. Y. 385, 388-389, 93 N. E. 933, 934 (1911); *People v. Goodrode*, 132 Mich. 542, 547, 94 N. W. 14, 16 (1903); *Wigmore*, *supra*, §1678.9

Respondent also misunderstands the relationship between the business-and-official-records hearsay exceptions and the Confrontation Clause. As we stated in *Crawford*: "Most of the hearsay exceptions covered statements that by their nature were not testimonial-for example, business records or statements in furtherance of a conspiracy." 541 U. S., at 56. Business and public records are generally admissible absent confrontation not because they qualify under an exception to the hearsay rules, but because-having been created for the administration of an entity's affairs and not for the purpose of establishing or proving some fact at trial-they are not testimonial. Whether or not they qualify as business or official records, the analysts' statements here-prepared specifically for use at petitioner's trial-were testimony against petitioner, and the analysts were subject to confrontation under the Sixth Amendment .

E

Respondent asserts that we should find no

Confrontation Clause violation in this case because petitioner had the ability to subpoena the analysts. But that power—whether pursuant to state law or the Compulsory Process Clause—is no substitute for the right of confrontation. Unlike the Confrontation Clause, those provisions are of no use to the defendant when the witness is unavailable or simply refuses to appear. See, e.g., *Davis*, 547 U. S., at 820 (“[The witness] was subpoenaed, but she did not appear at . . . trial”). Converting the prosecution’s duty under the Confrontation Clause into the defendant’s privilege under state law or the Compulsory Process Clause shifts the consequences of adverse-witness no-shows from the State to the accused. More fundamentally, the Confrontation Clause imposes a burden on the prosecution to present its witnesses, not on the defendant to bring those adverse witnesses into court. Its value to the defendant is not replaced by a system in which the prosecution presents its evidence via *ex parte* affidavits and waits for the defendant to subpoena the affiants if he chooses.

F

Finally, respondent asks us to relax the requirements of the Confrontation Clause to accommodate the “necessities of trial and the adversary process.” Brief for Respondent 59. It is not clear whence we would derive the authority to do so. The Confrontation Clause may make the prosecution of criminals more burdensome, but that is equally true of the right to trial by jury and the privilege against self-incrimination. The Confrontation Clause—like those other constitutional provisions—is binding, and we may not disregard it at our convenience.

We also doubt the accuracy of respondent’s and the dissent’s dire predictions. The dissent, respondent, and its amici highlight the substantial total number of controlled-substance analyses performed by state and federal laboratories in recent years. But only some of those tests are implicated in prosecutions, and only a small fraction of those cases actually proceed to trial. See Brief for Law Professors as Amici Curiae 7-8 (nearly 95% of convictions in state and federal courts are obtained via guilty plea).¹⁰

Perhaps the best indication that the sky will not fall after today’s decision is that it has not done so already. Many States have already adopted the constitutional rule we announce today,¹¹ while many others permit the defendant to assert (or forfeit by silence) his Confrontation Clause right after receiving notice of the prosecution’s intent to use a forensic analyst’s report, *id.*, at 13-15 (cataloging such state laws). Despite these widespread practices, there is no evidence that the criminal justice system has ground to a halt in the States that, one way or another, empower a defendant to insist upon the analyst’s appearance at trial. Indeed, in Massachusetts itself, a defendant may subpoena the analyst to appear at trial, see Brief for Respondent 57, and yet there is no indication that obstructionist

defendants are abusing the privilege.

The dissent finds this evidence “far less reassuring than promised.” *Post*, at 28. But its doubts rest on two flawed premises. First, the dissent believes that those state statutes “requiring the defendant to give early notice of his intent to confront the analyst,” are “burden-shifting statutes [that] may be invalidated by the Court’s reasoning.” *Post*, at 22, 28-29. That is not so. In their simplest form, notice-and-demand statutes require the prosecution to provide notice to the defendant of its intent to use an analyst’s report as evidence at trial, after which the defendant is given a period of time in which he may object to the admission of the evidence absent the analyst’s appearance live at trial. See, e.g., Ga. Code Ann. §35-3-154.1 (2006); Tex. Code Crim. Proc. Ann., Art. 38.41, §4 (Vernon 2005); Ohio Rev. Code Ann. §2925.51(C) (West 2006). Contrary to the dissent’s perception, these statutes shift no burden whatever. The defendant always has the burden of raising his Confrontation Clause objection; notice-and-demand statutes simply govern the time within which he must do so. States are free to adopt procedural rules governing objections. See *Wainwright v. Sykes*, 433 U. S. 72, 86-87 (1977). It is common to require a defendant to exercise his rights under the Compulsory Process Clause in advance of trial, announcing his intent to present certain witnesses. See Fed. Rules Crim. Proc. 12.1(a), (e), 16(b)(1)(C); Comment: Alibi Notice Rules: The Preclusion Sanction as Procedural Default, 51 U. Chi. L. Rev. 254, 254-255, 281-285 (1984) (discussing and cataloguing State notice-of-alibi rules); *Taylor v. Illinois*, 484 U. S. 400, 411 (1988); *Williams v. Florida*, 399 U. S. 78, 81-82 (1970). There is no conceivable reason why he cannot similarly be compelled to exercise his Confrontation Clause rights before trial. See *Hinojos-Mendoza v. People*, 169 P. 3d 662, 670 (Colo. 2007) (discussing and approving Colorado’s notice-and-demand provision). Today’s decision will not disrupt criminal prosecutions in the many large States whose practice is already in accord with the Confrontation Clause.¹²

Second, the dissent notes that several of the state-court cases that have already adopted this rule did so pursuant to our decision in *Crawford*, and not “independently . . . as a matter of state law.” *Post*, at 28. That may be so. But in assessing the likely practical effects of today’s ruling, it is irrelevant why those courts adopted this rule; it matters only that they did so. It is true that many of these decisions are recent, but if the dissent’s dire predictions were accurate, and given the large number of drug prosecutions at the state level, one would have expected immediate and dramatic results. The absence of such evidence is telling.

But it is not surprising. Defense attorneys and their clients will often stipulate to the nature of the substance in the ordinary drug case. It is unlikely that defense counsel will insist on live testimony whose effect will be

merely to highlight rather than cast doubt upon the forensic analysis. Nor will defense attorneys want to antagonize the judge or jury by wasting their time with the appearance of a witness whose testimony defense counsel does not intend to rebut in any fashion.¹³ The amicus brief filed by District Attorneys in Support of the Commonwealth in the Massachusetts Supreme Court case upon which the Appeals Court here relied said that "it is almost always the case that [analysts' certificates] are admitted without objection. Generally, defendants do not object to the admission of drug certificates most likely because there is no benefit to a defendant from such testimony." Brief for District Attorneys in Support of the Commonwealth in No. SJC-09320 (Mass.), p. 7 (footnote omitted). Given these strategic considerations, and in light of the experience in those States that already provide the same or similar protections to defendants, there is little reason to believe that our decision today will commence the parade of horrors respondent and the dissent predict.

* * *

This case involves little more than the application of our holding in *Crawford v. Washington*, 541 U. S. 36 . The Sixth Amendment does not permit the prosecution to prove its case via ex parte out-of-court affidavits, and the admission of such evidence against Melendez-Diaz was error.¹⁴ We therefore reverse the judgment of the Appeals Court of Massachusetts and remand the case for further proceedings not inconsistent with this opinion.

It is so ordered.

Footnotes

1 Contrary to the dissent's suggestion, post, at 3-4, 7 (opinion of Kennedy, J.), we do not hold, and it is not the case, that anyone whose testimony may be relevant in establishing the chain of custody, authenticity of the sample, or accuracy of the testing device, must appear in person as part of the prosecution's case. While the dissent is correct that "[i]t is the obligation of the prosecution to establish the chain of custody," post, at 7, this does not mean that everyone who laid hands on the evidence must be called. As stated in the dissent's own quotation, *ibid.*, from *United States v. Lott*, 854 F. 2d 244, 250 (CA7 1988), "gaps in the chain [of custody] normally go to the weight of the evidence rather than its admissibility." It is up to the prosecution to decide what steps in the chain of custody are so crucial as to require evidence; but what testimony is introduced must (if the defendant objects) be introduced live. Additionally, documents prepared in the regular course of equipment maintenance may well qualify as nontestimonial records. See *infra*, at 15-16, 18.

2 The exception is a single pre-Roberts case that relied on longstanding Massachusetts precedent. See *Commonwealth v. Harvard*, 356 Mass. 452, 462, 253 N. E. 2d 346, 352 (1969). Others are simply irrelevant, since

they involved medical reports created for treatment purposes, which would not be testimonial under our decision today. See, e.g., *Baber v. State*, 775 So. 2d 258, 258-259 (Fla. 2000); *State v. Garlick*, 313 Md. 209, 223-225, 545 A. 2d 27, 34-35 (1998).

3 The right to confrontation may, of course, be waived, including by failure to object to the offending evidence; and States may adopt procedural rules governing the exercise of such objections. See *infra*, at 21.

4 Respondent cites our decision in *Gray v. Maryland*, 523 U. S. 185 (1998) . That case did indeed distinguish between evidence that is "incriminating on its face" and evidence that "bec[omes] incriminating . . . only when linked with evidence introduced later at trial," *id.*, at 191 (internal quotation marks omitted). But it did so for the entirely different purpose of determining when a nontestifying codefendant's confession, redacted to remove all mention of the defendant, could be admitted into evidence with instruction for the jury not to consider the confession as evidence against the nonconfessor. The very premise of the case was that, without the limiting instruction even admission of a redacted confession containing evidence of the latter sort would have violated the defendant's Sixth Amendment rights. See *id.*, at 190-191.

5 Though surely not always. Some forensic analyses, such as autopsies and breathalyzer tests, cannot be repeated, and the specimens used for other analyses have often been lost or degraded.

6 Contrary to the dissent's suggestion, post, at 23, we do not "rel[y] in such great measure" on the deficiencies of crime-lab analysts shown by this report to resolve the constitutional question presented in this case. The analysts who swore the affidavits provided testimony against Melendez-Diaz, and they are therefore subject to confrontation; we would reach the same conclusion if all analysts always possessed the scientific acumen of Mme. Curie and the veracity of Mother Theresa. We discuss the report only to refute the suggestion that this category of evidence is uniquely reliable and that cross-examination of the analysts would be an empty formalism.

7 The early common-law cases likewise involve records prepared for the administration of an entity's affairs, and not for use in litigation. See, e.g., *King v. Rhodes*, 1 Leach 24, 168 Eng. Rep. 115 (1742) (admitting into evidence ship's muster-book); *King v. Martin*, 2 Camp. 100, 101, 170 Eng. Rep. 1094, 1095 (1809) (vestry book); *King v. Aickles*, 1 Leach 390, 391-392, 168 Eng. Rep. 297, 298 (1785) (prison logbook).

8 The dissent's reliance on our decision in *Dowdell v. United States*, 221 U. S. 325 (1911) , see post, at 20 (opinion of Kennedy, J.), is similarly misplaced. As the opinion stated in *Dowdell*-and as this Court noted in *Davis v. Washington*, 547 U. S. 813, 825 (2006) -the

judge and clerk who made the statements at issue in *Dowdell* were not witnesses for purposes of the Confrontation Clause because their statements concerned only the conduct of defendants' prior trial, not any facts regarding defendants' guilt or innocence. 221 U. S., at 330-331.

9 An earlier line of 19th century state-court cases also supports the notion that forensic analysts' certificates were not admitted into evidence as public or business records. See *Commonwealth v. Waite*, 93 Mass. 264, 266 (1865); *Shivers v. Newton*, 45 N. J. L. 469, 476 (Sup. Ct. 1883); *State v. Campbell*, 64 N. H. 402, 403, 13 A. 585, 586 (1888). In all three cases, defendants—who were prosecuted for selling adulterated milk—objected to the admission of the state chemists' certificates of analysis. In all three cases, the objection was defeated because the chemist testified live at trial. That the prosecution came forward with live witnesses in all three cases suggests doubt as to the admissibility of the certificates without opportunity for cross-examination.

10 The dissent provides some back-of-the-envelope calculations regarding the number of court appearances that will result from today's ruling. Post, at 13-14. Those numbers rely on various unfounded assumptions: that the prosecution will place into evidence a drug analysis certificate in every case; that the defendant will never stipulate to the nature of the controlled substance; that even where no such stipulation is made, every defendant will object to the evidence or otherwise demand the appearance of the analyst. These assumptions are wildly unrealistic, and, as discussed below, the figures they produce do not reflect what has in fact occurred in those jurisdictions that have already adopted the rule we announce today.

11 *State v. Johnson*, 982 So. 2d 672, 680-681 (Fla. 2008); *Hinojos-Mendoza v. People*, 169 P. 3d 662, 666-667 (Colo. 2007); *State v. Birchfield*, 342 Ore. 624, 631-632, 157 P. 3d 216, 220 (2007); *State v. March*, 216 S. W. 3d 663, 666-667 (Mo. 2007); *Thomas v. United States*, 914 A. 2d 1, 12-13 (D. C. 2006); *State v. Caulfield*, 722 N. W. 2d 304, 310 (Minn. 2006); *Las Vegas v. Walsh*, 121 Nev. 899, 904-906, 124 P. 3d 203, 207-208 (2005); *People v. McClanahan*, 191 Ill. 2d 127, 133-134, 729 N. E. 2d 470, 474-475 (2000); *Miller v. State*, 266 Ga. 850, 854-855, 472 S. E. 2d 74, 78-79 (1996); *Barnette v. State*, 481 So. 2d 788, 792 (Miss. 1985).

12 As the dissent notes, post, at 27, some state statutes, "requir[e] defense counsel to subpoena the analyst, to show good cause for demanding the analyst's presence, or even to affirm under oath an intent to cross-examine the analyst." We have no occasion today to pass on the constitutionality of every variety of statute commonly given the notice-and-demand label. It suffices to say that what we have referred to as the "simplest form [of] notice-and-demand statutes," *supra*, at 21, is constitutional; that such provisions are in place in a

number of States; and that in those States, and in other States that require confrontation without notice-and-demand, there is no indication that the dire consequences predicted by the dissent have materialized.

13 Contrary to the dissent's suggestion, post, at 24-25, we do not cast aspersions on trial judges, who we trust will not be antagonized by good-faith requests for analysts' appearance at trial. Nor do we expect defense attorneys to refrain from zealous representation of their clients. We simply do not expect defense attorneys to believe that their clients' interests (or their own) are furthered by objections to analysts' reports whose conclusions counsel have no intention of challenging.

14 We of course express no view as to whether the error was harmless. The Massachusetts Court of Appeals did not reach that question and we decline to address it in the first instance. Cf. *Coy v. Iowa*, 487 U. S. 1012, 1021-1022 (1988). In connection with that determination, however, we disagree with the dissent's contention, post, at 25, that "only an analyst's testimony suffices to prove [the] fact" that "the substance is cocaine." Today's opinion, while insisting upon retention of the confrontation requirement, in no way alters the type of evidence (including circumstantial evidence) sufficient to sustain a conviction.

Justice Thomas, concurring.

I write separately to note that I continue to adhere to my position that "the Confrontation Clause is implicated by extrajudicial statements only insofar as they are contained in formalized testimonial materials, such as affidavits, depositions, prior testimony, or confessions." *White v. Illinois*, 502 U. S. 346, 365 (1992) (opinion concurring in part and concurring in judgment); see also *Giles v. California*, 554 U. S. ___, ___ (2008) (slip op., at 1) (concurring opinion) (characterizing statements within the scope of the Confrontation Clause to include those that are "sufficiently formal to resemble the Marian examinations" because they were Mirandized or custodial or "accompanied by [a] similar indicia of formality" (internal quotation marks omitted)); *Davis v. Washington*, 547 U. S. 813, 836 (2006) (opinion concurring in judgment in part and dissenting in part) (reiterating that the Clause encompasses extrajudicial statements contained in the types of formalized materials listed in *White*, *supra*, at 365. I join the Court's opinion in this case because the documents at issue in this case "are quite plainly affidavits," ante, at 4. As such, they "fall within the core class of testimonial statements" governed by the Confrontation Clause. *Ibid.* (internal quotation marks omitted).

Justice Kennedy, with whom The Chief Justice, Justice Breyer, and Justice Alito join, dissenting.

The Court sweeps away an accepted rule governing the admission of scientific evidence. Until today,

scientific analysis could be introduced into evidence without testimony from the "analyst" who produced it. This rule has been established for at least 90 years. It extends across at least 35 States and six Federal Courts of Appeals. Yet the Court undoes it based on two recent opinions that say nothing about forensic analysts: *Crawford v. Washington*, 541 U. S. 36 (2004) , and *Davis v. Washington*, 547 U. S. 813 (2006) .

It is remarkable that the Court so confidently disregards a century of jurisprudence. We learn now that we have misinterpreted the Confrontation Clause-hardly an arcane or seldom-used provision of the Constitution-for the first 218 years of its existence. The immediate systemic concern is that the Court makes no attempt to acknowledge the real differences between laboratory analysts who perform scientific tests and other, more conventional witnesses-"witnesses" being the word the

Framers used in the Confrontation Clause.

Crawford and *Davis* dealt with ordinary witnesses-women who had seen, and in two cases been the victim of, the crime in question. Those cases stand for the proposition that formal statements made by a conventional witness-one who has personal knowledge of some aspect of the defendant's guilt-may not be admitted without the witness appearing at trial to meet the accused face to face. But *Crawford* and *Davis* do not say-indeed, could not have said, because the facts were not before the Court-that anyone who makes a testimonial statement is a witness for purposes of the Confrontation Clause, even when that person has, in fact, witnessed nothing to give them personal knowledge of the defendant's guilt.

Because *Crawford* and *Davis* concerned typical witnesses, the Court should have done the sensible thing and limited its holding to witnesses as so defined. Indeed, as Justice Thomas warned in his opinion in *Davis*, the Court's approach has become "disconnected from history and unnecessary to prevent abuse." 547 U. S., at 838. The Court's reliance on the word "testimonial" is of little help, of course, for that word does not appear in the text of the Clause.

The Court dictates to the States, as a matter of constitutional law, an as-yet-undefined set of rules governing what kinds of evidence may be admitted without in-court testimony. Indeed, under today's opinion the States bear an even more onerous burden than they did before *Crawford*. Then, the States at least had the guidance of the hearsay rule and could rest assured that "where the evidence [fell] within a firmly rooted hearsay exception," the Confrontation Clause did not bar its admission. *Ohio v. Roberts*, 448 U. S. 56, 66 (1980) (overruled by *Crawford*). Now, without guidance from any established body of law, the States can only guess what future rules this Court will distill from the sparse constitutional text. See, e.g., Méndez, *Crawford v.*

Washington: A Critique, 57 Stan. L. Rev. 569, 586-593 (2004) (discussing unanswered questions regarding testimonial statements).

The Court's opinion suggests this will be a body of formalistic and wooden rules, divorced from precedent, common sense, and the underlying purpose of the Clause. Its ruling has vast potential to disrupt criminal procedures that already give ample protections against the misuse of scientific evidence. For these reasons, as more fully explained below, the Court's opinion elicits my respectful dissent.

I

A

1

The Court says that, before the results of a scientific test may be introduced into evidence, the defendant has the right to confront the "analyst." Ante, at 4-5. One must assume that this term, though it appears nowhere in the Confrontation Clause, nevertheless has some constitutional substance that now must be elaborated in future cases. There is no accepted definition of analyst, and there is no established precedent to define that term.

Consider how many people play a role in a routine test for the presence of illegal drugs. One person prepares a sample of the drug, places it in a testing machine, and retrieves the machine's printout-often, a graph showing the frequencies of radiation absorbed by the sample or the masses of the sample's molecular fragments. See 2 P. Giannelli & E. Imwinkelried, *Scientific Evidence* §23.03 (4th ed. 2007) (describing common methods of identifying drugs, including infrared spectrophotometry, nuclear magnetic resonance, gas chromatography, and mass spectrometry). A second person interprets the graph the machine prints out-perhaps by comparing that printout with published, standardized graphs of known drugs. Ibid. Meanwhile, a third person-perhaps an independent contractor-has calibrated the machine and, having done so, has certified that the machine is in good working order. Finally, a fourth person-perhaps the laboratory's director-certifies that his subordinates followed established procedures.

It is not at all evident which of these four persons is the analyst to be confronted under the rule the Court announces today. If all are witnesses who must appear for in-court confrontation, then the Court has, for all practical purposes, forbidden the use of scientific tests in criminal trials. As discussed further below, requiring even one of these individuals to testify threatens to disrupt if not end many prosecutions where guilt is clear but a newly found formalism now holds sway. See Part I-C, *infra*.

It is possible to read the Court's opinion, however, to say that all four must testify. Each one has contributed to the test's result and has, at least in some respects, made a

representation about the test. Person One represents that a pure sample, properly drawn, entered the machine and produced a particular printout. Person Two represents that the printout corresponds to a known drug. Person Three represents that the machine was properly calibrated at the time. Person Four represents that all the others performed their jobs in accord with established procedures.

And each of the four has power to introduce error. A laboratory technician might adulterate the sample. The independent contractor might botch the machine's calibration. And so forth. The reasons for these errors may range from animus against the particular suspect or all criminal suspects to unintentional oversight; from gross negligence to good-faith mistake. It is no surprise that a plausible case can be made for deeming each person in the testing process an analyst under the Court's opinion.

Consider the independent contractor who has calibrated the testing machine. At least in a routine case, where the machine's result appears unmistakable, that result's accuracy depends entirely on the machine's calibration. The calibration, in turn, can be proved only by the contractor's certification that he or she did the job properly. That certification appears to be a testimonial statement under the Court's definition: It is a formal, out-of-court statement, offered for the truth of the matter asserted, and made for the purpose of later prosecution. See ante, at 3-5. It is not clear, under the Court's ruling, why the independent contractor is not also an analyst.

Consider the person who interprets the machine's printout. His or her interpretation may call for the exercise of professional judgment in close cases. See *Giannelli & Imwinkelried*, supra. If we assume no person deliberately introduces error, this interpretive step is the one most likely to permit human error to affect the test's result. This exercise of judgment might make this participant an analyst. The Court implies as much. See ante, at 12-14.

And we must yet consider the laboratory director who certifies the ultimate results. The director is arguably the most effective person to confront for revealing any ambiguity in findings, variations in procedures, or problems in the office, as he or she is most familiar with the standard procedures, the office's variations, and problems in prior cases or with particular analysts. The prosecution may seek to introduce his or her certification into evidence. The Court implies that only those statements that are actually entered into evidence require confrontation. See ante, at 4-5. This could mean that the director is also an analyst, even if his or her certification relies upon or restates work performed by subordinates.

The Court offers no principles or historical precedent to determine which of these persons is the analyst. All contribute to the test result. And each is

equally remote from the scene, has no personal stake in the outcome, does not even know the accused, and is concerned only with the performance of his or her role in conducting the test.

It could be argued that the only analyst who must testify is the person who signed the certificate. Under this view, a laboratory could have one employee sign certificates and appear in court, which would spare all the other analysts this burden. But the Court has already rejected this arrangement. The Court made clear in *Davis* that it will not permit the testimonial statement of one witness to enter into evidence through the in-court testimony of a second:

"[W]e do not think it conceivable that the protections of the Confrontation Clause can readily be evaded by having a note-taking policeman [here, the laboratory employee who signs the certificate] recite the unsworn hearsay testimony of the declarant [here, the analyst who performs the actual test], instead of having the declarant sign a deposition. Indeed, if there is one point for which no case-English or early American, state or federal-can be cited, that is it." 547 U. S., at 826.

Under this logic, the Court's holding cannot be cabined to the person who signs the certificates. If the signatory is restating the testimonial statements of the true analysts-whomever they might be-then those analysts, too, must testify in person.

Today's decision demonstrates that even in the narrow category of scientific tests that identify a drug, the Court cannot define with any clarity who the analyst is. Outside this narrow category, the range of other scientific tests that may be affected by the Court's new confrontation right is staggering. See, e.g., Comment, *Toward a Definition of "Testimonial": How Autopsy Reports Do Not Embody the Qualities of a Testimonial Statement*, 96 Cal. L. Rev. 1093, 1094, 1115 (2008) (noting that every court post-Crawford has held that autopsy reports are not testimonial, and warning that a contrary rule would "effectively functio[n] as a statute of limitations for murder").

2

It is difficult to confine at this point the damage the Court's holding will do in other contexts. Consider just two-establishing the chain of custody and authenticating a copy of a document.

It is the obligation of the prosecution to establish the chain of custody for evidence sent to testing laboratories-that is, to establish "the identity and integrity of physical evidence by tracing its continuous whereabouts." 23 C. J. S., Criminal Law §1142, p. 66 (2008). Meeting this obligation requires representations-that one officer retrieved the evidence from the crime scene, that a second officer checked it into

an evidence locker, that a third officer verified the locker's seal was intact, and so forth. The iron logic of which the Court is so enamored would seem to require in-court testimony from each human link in the chain of custody. That, of course, has never been the law. See, e.g., *United States v. Lott*, 854 F. 2d 244, 250 (CA7 1988) ("[G]aps in the chain [of custody] normally go to the weight of the evidence rather than its admissibility"); 29A Am. Jur. 2d, Evidence §962, p. 269 (2009) ("The fact that one of the persons in control of a fungible substance does not testify at trial does not, without more, make the substance or testimony relating to it inadmissible"); C. J. S., *supra*, §1142, at 67 ("It is generally not necessary that every witness who handled the evidence testify").

It is no answer for the Court to say that "[i]t is up to the prosecution to decide what steps in the chain of custody are so crucial as to require evidence." Ante, at 5, n. 1. The case itself determines which links in the chain are crucial-not the prosecution. In any number of cases, the crucial link in the chain will not be available to testify and so the evidence will be excluded for lack of a proper foundation.

Consider another context in which the Court's holding may cause disruption: The long-accepted practice of authenticating copies of documents by means of a certificate from the document's custodian stating that the copy is accurate. See, e.g., Fed. Rule Evid. 902(4) (in order to be self-authenticating, a copy of a public record must be "certified as correct by the custodian"); Rule 902(11) (business record must be "accompanied by a written declaration of its custodian"). Under one possible reading of the Court's opinion, recordkeepers will be required to testify. So far, courts have not read *Crawford* and *Davis* to impose this largely meaningless requirement. See, e.g., *United States v. Adefehinti*, 510 F. 3d 319, 327-328 (CA DC 2008) (certificates authenticating bank records may be admitted without confrontation); *United States v. Ellis*, 460 F. 3d 920, 927 (CA7 2006) (certificate authenticating hospital records). But the breadth of the Court's ruling today, and its undefined scope, may well be such that these courts now must be deemed to have erred. The risk of that consequence ought to tell us that something is very wrong with the Court's analysis.

Because the Court is driven by nothing more than a wooden application of the *Crawford* and *Davis* definition of "testimonial," divorced from any guidance from history, precedent, or common sense, there is no way to predict the future applications of today's holding. Surely part of the justification for the Court's formalism must lie in its predictability. There is nothing predictable here, however, other than the uncertainty and disruption that now must ensue.

B

With no precedent to guide us, let us assume that the Court's analyst is the person who interprets the machine's printout. This result makes no sense. The Confrontation Clause is not designed, and does not serve, to detect errors in scientific tests. That should instead be done by conducting a new test. Or, if a new test is impossible, the defendant may call his own expert to explain to the jury the test's flaws and the dangers of relying on it. And if, in an extraordinary case, the particular analyst's testimony is necessary to the defense, then, of course, the defendant may subpoena the analyst. The Court frets that the defendant may be unable to do so "when the [analyst] is unavailable or simply refuses to appear." Ante, at 19. But laboratory analysts are not difficult to locate or to compel. As discussed below, analysts already devote considerable time to appearing in court when subpoenaed to do so. See Part I-C, *infra*; see also Brief for State of Alabama et al. as Amici Curiae 26-28. Neither the Court, petitioner, nor amici offer any reason to believe that defendants have trouble subpoenaing analysts in cases where the analysts' in-court testimony is necessary.

The facts of this case illustrate the formalistic and pointless nature of the Court's reading of the Clause. Petitioner knew, well in advance of trial, that the Commonwealth would introduce the tests against him. The bags of cocaine were in court, available for him to test, and entered into evidence. Yet petitioner made no effort, before or during trial, to mount a defense against the analysts' results. Petitioner could have challenged the tests' reliability by seeking discovery concerning the testing methods used or the qualifications of the laboratory analysts. See Mass. Rule Crim. Proc. 14(a)(2) (2009). He did not do so. Petitioner could have sought to conduct his own test. See Rule 41. Again, he did not seek a test; indeed, he did not argue that the drug was not cocaine. Rather than dispute the authenticity of the samples tested or the accuracy of the tests performed, petitioner argued to the jury that the prosecution had not shown that he had possessed or dealt in the drugs.

Despite not having prepared a defense to the analysts' results, petitioner's counsel made what can only be described as a pro forma objection to admitting the results without in-court testimony, presumably from one particular analyst. Today the Court, by deciding that this objection should have been sustained, transforms the Confrontation Clause from a sensible procedural protection into a distortion of the criminal justice system.

It is difficult to perceive how the Court's holding will advance the purposes of the Confrontation Clause. One purpose of confrontation is to impress upon witnesses the gravity of their conduct. See *Coy v. Iowa*, 487 U. S. 1012, 1019-1020 (1988). A witness, when brought to face the person his or her words condemn, might refine, reformulate, reconsider, or even recant earlier statements. See *ibid.* A further purpose is to alleviate the danger of one-sided interrogations by adversarial government officials who might distort a

witness's testimony. The Clause guards against this danger by bringing the interrogation into the more neutral and public forum of the courtroom. See *Maryland v. Craig*, 497 U. S. 836, 869-870 (1990) (Scalia, J., dissenting) (discussing the "value of the confrontation right in guarding against a child's distorted or coerced recollections"); see also 96 Cal. L. Rev., supra, at 1120-1122 ("During private law-enforcement questioning, police officers or prosecutors can exert pressure on the witness without a high risk of being discovered. Courtroom questioning, in contrast, is public and performed in front of the jury, judge and defendant. Pressure is therefore harder to exert in court").

But neither purpose is served by the rule the Court announces today. It is not plausible that a laboratory analyst will retract his or her prior conclusion upon catching sight of the defendant the result condemns. After all, the analyst is far removed from the particular defendant and, indeed, claims no personal knowledge of the defendant's guilt. And an analyst performs hundreds if not thousands of tests each year and will not remember a particular test or the link it had to the defendant.

This is not to say that analysts are infallible. They are not. It may well be that if the State does not introduce the machine printout or the raw results of a laboratory analysis; if it does not call an expert to interpret a test, particularly if that test is complex or little known; if it does not establish the chain of custody and the reliability of the laboratory; then the State will have failed to meet its burden of proof. That result follows because the State must prove its case beyond a reasonable doubt, without relying on presumptions, unreliable hearsay, and the like. See *United States v. United States Gypsum Co.*, 438 U. S. 422, 446 (1978) (refusing to permit a " 'conclusive presumption [of intent], ' " which " 'would effectively eliminate intent as an ingredient of the offense' " (quoting *Morissette v. United States*, 342 U. S. 246, 274-275 (1952)). The State must permit the defendant to challenge the analyst's result. See *Holmes v. South Carolina*, 547 U. S. 319, 331 (2006) (affirming the defendant's right to "have a meaningful opportunity to present a complete defense" (internal quotation marks omitted)). The rules of evidence, including those governing reliability under hearsay principles and the latitude to be given expert witnesses; the rules against irrebuttable presumptions; and the overriding principle that the prosecution must make its case beyond a reasonable doubt—all these are part of the protections for the accused. The States, however, have some latitude in determining how these rules should be defined.

The Confrontation Clause addresses who must testify. It simply does not follow, however, that this clause, in lieu of the other rules set forth above, controls who the prosecution must call on every issue. Suppose, for instance, that the defense challenges the procedures for a secure chain of custody for evidence sent to a lab and then returned to the police. The defense has the right

to call its own witnesses to show that the chain of custody is not secure. But that does not mean it can demand that, in the prosecution's case in chief, each person who is in the chain of custody—and who had an undoubted opportunity to taint or tamper with the evidence—must be called by the prosecution under the Confrontation Clause. And the same is true with lab technicians.

The Confrontation Clause is simply not needed for these matters. Where, as here, the defendant does not even dispute the accuracy of the analyst's work, confrontation adds nothing.

C

For the sake of these negligible benefits, the Court threatens to disrupt forensic investigations across the country and to put prosecutions nationwide at risk of dismissal based on erratic, all-too-frequent instances when a particular laboratory technician, now invested by the Court's new constitutional designation as the analyst, simply does not or cannot appear.

Consider first the costs today's decision imposes on criminal trials. Our own Court enjoys weeks, often months, of notice before cases are argued. We receive briefs well in advance. The argument itself is ordered. A busy trial court, by contrast, must consider not only attorneys' schedules but also those of witnesses and juries. Trial courts have huge caseloads to be processed within strict time limits. Some cases may unexpectedly plead out at the last minute; others, just as unexpectedly, may not. Some juries stay out longer than predicted; others must be reconstituted. An analyst cannot hope to be the trial court's top priority in scheduling. The analyst must instead face the prospect of waiting for days in a hallway outside the courtroom before being called to offer testimony that will consist of little more than a rote recital of the written report. See Part I-B, supra.

As matters stood before today's opinion, analysts already spent considerable time appearing as witnesses in those few cases where the defendant, unlike petitioner in this case, contested the analyst's result and subpoenaed the analyst. See Brief for Alabama et al. as Amici Curiae 26-28 (testifying takes time); ante, at 23 (before today's opinion, it was " 'almost always the case that analysts' certificates [we]re admitted without objection' " in Massachusetts courts). By requiring analysts also to appear in the far greater number of cases where defendants do not dispute the analyst's result, the Court imposes enormous costs on the administration of justice.

Setting aside, for a moment, all the other crimes for which scientific evidence is required, consider the costs the Court's ruling will impose on state drug prosecutions alone. In 2004, the most recent year for which data are available, drug possession and trafficking resulted in 362,850 felony convictions in state courts across the country. See Dept. of Justice, Bureau of Justice Statistics,

M. Durose & P. Langan, *Felony Sentences in State Courts* 2004, p. 2 (July 2007). Roughly 95% of those convictions were products of plea bargains, see *id.*, at 1, which means that state courts saw more than 18,000 drug trials in a single year.

The analysts responsible for testing the drugs at issue in those cases now bear a crushing burden. For example, the district attorney in Philadelphia prosecuted 25,000 drug crimes in 2007. Brief for National Dist. Attorneys Association et al. as Amici Curiae 12-13. Assuming that number remains the same, and assuming that 95% of the cases end in a plea bargain, each of the city's 18 drug analysts, *ibid.*, will be required to testify in more than 69 trials next year. Cleveland's district attorney prosecuted 14,000 drug crimes in 2007. *Ibid.* Assuming that number holds, and that 95% of the cases end in a plea bargain, each of the city's 6 drug analysts (two of whom work only part time) must testify in 117 drug cases next year. *Id.*, at 13.

The Federal Government may face even graver difficulties than the States because its operations are so widespread. For example, the FBI laboratory at Quantico, Virginia, supports federal, state, and local investigations across the country. Its 500 employees conduct over one million scientific tests each year. Dept. of Justice, FBI Laboratory 2007, Message from the FBI Laboratory Director, <http://www.fbi.gov/hq/lab/lab2007/labannual07.pdf> (as visited June 22, 2009, and available in Clerk of Court's case file). The Court's decision means that before any of those million tests reaches a jury, at least one of the laboratory's analysts must board a plane, find his or her way to an unfamiliar courthouse, and sit there waiting to read aloud notes made months ago.

The Court purchases its meddling with the Confrontation Clause at a dear price, a price not measured in taxpayer dollars alone. Guilty defendants will go free, on the most technical grounds, as a direct result of today's decision, adding nothing to the truth-finding process. The analyst will not always make it to the courthouse in time. He or she may be ill; may be out of the country; may be unable to travel because of inclement weather; or may at that very moment be waiting outside some other courtroom for another defendant to exercise the right the Court invents today. If for any reason the analyst cannot make it to the courthouse in time, then, the Court holds, the jury cannot learn of the analyst's findings (unless, by some unlikely turn of events, the defendant previously cross-examined the analyst). *Ante*, at 3. The result, in many cases, will be that the prosecution cannot meet its burden of proof, and the guilty defendant goes free on a technicality that, because it results in an acquittal, cannot be reviewed on appeal.

The Court's holding is a windfall to defendants, one that is unjustified by any demonstrated deficiency in

trials, any well-understood historical requirement, or any established constitutional precedent.

II

All of the problems with today's decision—the imprecise definition of "analyst," the lack of any perceptible benefit, the heavy societal costs—would be of no moment if the Constitution did, in fact, require the Court to rule as it does today. But the Constitution does not.

The Court's fundamental mistake is to read the Confrontation Clause as referring to a kind of out-of-court statement—namely, a testimonial statement—that must be excluded from evidence. The Clause does not refer to kinds of statements. Nor does the Clause contain the word "testimonial." The text, instead, refers to kinds of persons, namely, to "witnesses against" the defendant. Laboratory analysts are not "witnesses against" the defendant as those words would have been understood at the framing. There is simply no authority for this proposition.

Instead, the Clause refers to a conventional "witness"—meaning one who witnesses (that is, perceives) an event that gives him or her personal knowledge of some aspect of the defendant's guilt. Both Crawford and Davis concerned just this kind of ordinary witness—and nothing in the Confrontation Clause's text, history, or precedent justifies the Court's decision to expand those cases.

A

The Clause states: "In all criminal prosecutions, the accused shall enjoy the right . . . to be confronted with the witnesses against him." U. S. Const., Amdt. 6. Though there is "virtually no evidence of what the drafters of the Confrontation Clause intended it to mean," *White v. Illinois*, 502 U. S. 346, 359 (1992) (Thomas, J., concurring in part and concurring in judgment), it is certain the Framers did not contemplate that an analyst who conducts a scientific test far removed from the crime would be considered a "witness[s] against" the defendant.

The Framers were concerned with a typical witness—one who perceived an event that gave rise to a personal belief in some aspect of the defendant's guilt. There is no evidence that the Framers understood the Clause to extend to unconventional witnesses. As discussed below, there is significant evidence to the contrary. See Part II-B, *infra*. In these circumstances, the historical evidence in support of the Court's position is "too meager . . . to form a solid basis in history, preceding and contemporaneous with the framing of the Constitution." *Boumediene v. Bush*, 553 U. S. ___, ___ (2008) (slip op., at 22) (quoting *Reid v. Covert*, 354 U. S. 1, 64 (1957) (Frankfurter, J., concurring in result)). The Court goes dangerously wrong when it bases its

constitutional interpretation upon historical guesswork.

The infamous treason trial of Sir Walter Raleigh provides excellent examples of the kinds of witnesses to whom the Confrontation Clause refers. Raleigh's Case, 2 How. St. Tr. 1 (1603); see Crawford, 541 U. S., at 44-45 (Raleigh's trial informs our understanding of the Clause because it was, at the time of the framing, one of the "most notorious instances" of the abuse of witnesses' out-of-court statements); ante, at 9 (same). Raleigh's accusers claimed to have heard Raleigh speak treason, so they were witnesses in the conventional sense. We should limit the Confrontation Clause to witnesses like those in Raleigh's trial.

The Court today expands the Clause to include laboratory analysts, but analysts differ from ordinary witnesses in at least three significant ways. First, a conventional witness recalls events observed in the past, while an analyst's report contains near-contemporaneous observations of the test. An observation recorded at the time it is made is unlike the usual act of testifying. A typical witness must recall a previous event that he or she perceived just once, and thus may have misperceived or misremembered. But an analyst making a contemporaneous observation need not rely on memory; he or she instead reports the observations at the time they are made. We gave this consideration substantial weight in Davis. There, the "primary purpose" of the victim's 911 call was "to enable police assistance to meet an ongoing emergency," rather than "to establish or prove past events potentially relevant to later criminal prosecution." 547 U. S., at 822, 827. See also *People v. Geier*, 41 Cal. 4th 555, 605-609, 161 P. 3d 104, 139-141 (2007). The Court cites no authority for its holding that an observation recorded at the time it is made is an act of "witness[ing]" for purposes of the Confrontation Clause.

Second, an analyst observes neither the crime nor any human action related to it. Often, the analyst does not know the defendant's identity, much less have personal knowledge of an aspect of the defendant's guilt. The analyst's distance from the crime and the defendant, in both space and time, suggests the analyst is not a witness against the defendant in the conventional sense.

Third, a conventional witness responds to questions under interrogation. See, e.g., Raleigh's Case, supra, at 15-20. But laboratory tests are conducted according to scientific protocols; they are not dependent upon or controlled by interrogation of any sort. Put differently, out-of-court statements should only "require confrontation if they are produced by, or with the involvement of, adversarial government officials responsible for investigating and prosecuting crime." 96 Cal. L. Rev., at 1118. There is no indication that the analysts here—who work for the State Laboratory Institute, a division of the Massachusetts Department of Public Health—were adversarial to petitioner. Nor is there any evidence that adversarial officials played a role in

formulating the analysts' certificates.

Rather than acknowledge that it expands the Confrontation Clause beyond conventional witnesses, the Court relies on our recent opinions in Crawford and Davis. Ante, at 3-5. The Court assumes, with little analysis, that Crawford and Davis extended the Clause to any person who makes a "testimonial" statement. But the Court's confident tone cannot disguise the thinness of these two reeds. Neither Crawford nor Davis considered whether the Clause extends to persons far removed from the crime who have no connection to the defendant. Instead, those cases concerned conventional witnesses. Davis, supra, at 826-830 (witnesses were victims of defendants' assaults); Crawford, supra, at 38 (witness saw defendant stab victim).

It is true that Crawford and Davis employed the term "testimonial," and thereby suggested that any testimonial statement, by any person, no matter how distant from the defendant and the crime, is subject to the Confrontation Clause. But that suggestion was not part of the holding of Crawford or Davis. Those opinions used the adjective "testimonial" to avoid the awkward phrasing required by reusing the noun "witness." The Court today transforms that turn of phrase into a new and sweeping legal rule, by holding that anyone who makes a formal statement for the purpose of later prosecution—no matter how removed from the crime—must be considered a "witness against" the defendant. Ante, at 3-5. The Court cites no authority to justify this expansive new interpretation.

B

No historical evidence supports the Court's conclusion that the Confrontation Clause was understood to extend beyond conventional witnesses to include analysts who conduct scientific tests far removed from the crime and the defendant. Indeed, what little evidence there is contradicts this interpretation.

Though the Framers had no forensic scientists, they did use another kind of unconventional witness—the copyist. A copyist's work may be as essential to a criminal prosecution as the forensic analyst's. To convict a man of bigamy, for example, the State often requires his marriage records. See, e.g., *Williams v. State*, 54 Ala. 131, 134, 135 (1875); *State v. Potter*, 52 Vt. 33, 38 (1879). But if the original records cannot be taken from the archive, the prosecution must rely on copies of those records, made for the purpose of introducing the copies into evidence at trial. See *ibid.* In that case, the copyist's honesty and diligence are just as important as the analyst's here. If the copyist falsifies a copy, or even misspells a name or transposes a date, those flaws could lead the jury to convict. Because so much depends on his or her honesty and diligence, the copyist often prepares an affidavit certifying that the copy is true and accurate.

Such a certificate is beyond question a testimonial

statement under the Court's definition: It is a formal out-of-court statement offered for the truth of two matters (the copyist's honesty and the copy's accuracy), and it is prepared for a criminal prosecution.

During the Framers' era copyists' affidavits were accepted without hesitation by American courts. See, e.g., *United States v. Percheman*, 7 Pet. 51, 85 (1833) (opinion for the Court by Marshall, C. J.); see also Advisory Committee's Note on Fed. Rule Evid. 902(4), 28 U. S. C. App., p. 390 ("The common law . . . recognized the procedure of authenticating copies of public records by certificate"); 5 J. Wigmore, *Evidence* §§1677, 1678 (J. Chadbourne rev. 1974). And courts admitted copyists' affidavits in criminal as well as civil trials. See *Williams*, supra; *Potter*, supra. This demonstrates that the framing generation, in contrast to the Court today, did not consider the Confrontation Clause to require in-court confrontation of unconventional authors of testimonial statements.

The Court attempts to explain away this historical exception to its rule by noting that a copyist's authority is "narrowly circumscribed." Ante, at 16. But the Court does not explain why that matters, nor, if it does matter, why laboratory analysts' authority should not also be deemed "narrowly circumscribed" so that they, too, may be excused from testifying. And drawing these fine distinctions cannot be squared with the Court's avowed allegiance to formalism. Determining whether a witness' authority is "narrowly circumscribed" has nothing to do with Crawford's testimonial framework. It instead appears much closer to the pre-Crawford rule of *Ohio v. Roberts*, under which a statement could be admitted without testimony if it "bears adequate indicia of reliability." 448 U. S., at 66 (internal quotation marks omitted).

In keeping with the traditional understanding of the Confrontation Clause, this Court in *Dowdell v. United States*, 221 U. S. 325 (1911), rejected a challenge to the use of certificates, sworn out by a clerk of court, a trial judge, and a court reporter, stating that defendants had been present at trial. Those certificates, like a copyist's certificate, met every requirement of the Court's current definition of "testimonial." In rejecting the defendants' claim that use of the certificates violated the Confrontation Clause, the Court in *Dowdell* explained that the officials who executed the certificates "were not witnesses against the accused" because they "were not asked to testify to facts concerning [the defendants'] guilt or innocence." Id., at 330. Indeed, as recently as *Davis*, the Court reaffirmed *Dowdell*. 547 U. S., at 825.

By insisting that every author of a testimonial statement appear for confrontation, on pain of excluding the statement from evidence, the Court does violence to the Framers' sensible, and limited, conception of the right to confront "witnesses against" the defendant.

C

In addition to lacking support in historical practice or in this Court's precedent, the Court's decision is also contrary to authority extending over at least 90 years, 35 States, and six Federal Courts of Appeals.

Almost 100 years ago three state supreme courts held that their state constitutions did not require analysts to testify in court. In a case much like this one, the Massachusetts Supreme Judicial Court upheld the admission of a certificate stating that the liquid seized from the defendant contained alcohol, even though the author of the certificate did not testify. *Commonwealth v. Slavski*, 245 Mass. 405, 413, 140 N. E. 465, 467 (1923). The highest courts in Connecticut and Virginia reached similar conclusions under their own constitutions. *State v. Torello*, 103 Conn. 511, 131 A. 429 (1925); *Bracey v. Commonwealth*, 119 Va. 867, 89 S. E. 144 (1916). Just two state courts appear to have read a state constitution to require a contrary result. *State v. Clark*, 290 Mont. 479, 484-489, 964 P. 2d 766, 770-772 (1998) (laboratory drug report requires confrontation under Montana's Constitution, which is "[u]nlike its federal counterpart"); *State v. Birchfield*, 342 Ore. 624, 157 P. 3d 216 (2007), but see id., at 631-632, 157 P. 3d, at 220 (suggesting that a "typical notice requirement" would be lawful).

As for the Federal Constitution, before Crawford the authority was stronger still: The Sixth Amendment does not require analysts to testify in court. All Federal Courts of Appeals to consider the issue agreed. *Sherman v. Scott*, 62 F. 3d 136, 139-142 (CA5 1995); *Minner v. Kerby*, 30 F. 3d 1311, 1313-1315 (CA10 1994); *United States v. Baker*, 855 F. 2d 1353, 1359-1360 (CA8 1988); *Reardon v. Manson*, 806 F. 2d 39 (CA2 1986); *Kay v. United States*, 255 F. 2d 476, 480-481 (CA4 1958); see also *Manocchio v. Moran*, 919 F. 2d 770, 777-782 (CA1 1990) (autopsy report stating cause of victim's death). Some 24 state courts, and the Court of Appeals for the Armed Forces, were in accord. See Appendix A, infra. (Some cases cited in the appendixes concern doctors, coroners, and calibrators rather than laboratory analysts, but their reasoning is much the same.) Eleven more state courts upheld burden-shifting statutes that reduce, if not eliminate, the right to confrontation by requiring the defendant to take affirmative steps prior to trial to summon the analyst. See *ibid.* Because these burden-shifting statutes may be invalidated by the Court's reasoning, these 11 decisions, too, appear contrary to today's opinion. See Part III-B, infra. Most of the remaining States, far from endorsing the Court's view, appear not to have addressed the question prior to Crawford. Against this weight of authority, the Court proffers just two cases from intermediate state courts of appeals. Ante, at 6-7.

On a practical level, today's ruling would cause less disruption if the States' hearsay rules had already required analysts to testify. But few States require this. At least

sixteen state courts have held that their evidentiary rules permit scientific test results, calibration certificates, and the observations of medical personnel to enter evidence without in-court testimony. See Appendix B, *infra*. The Federal Courts of Appeals have reached the same conclusion in applying the federal hearsay rule. *United States v. Garnett*, 122 F. 3d 1016, 1018-1019 (CA11 1997) (*per curiam*); *United States v. Gilbert*, 774 F. 2d 962, 965 (CA9 1985) (*per curiam*); *United States v. Ware*, 247 F. 2d 698, 699-700 (CA7 1957); but see *United States v. Oates*, 560 F. 2d 45, 82 (CA2 1977) (report prepared by law enforcement not admissible under public-records or business-records exceptions to federal hearsay rule).

The modern trend in the state courts has been away from the Court's rule and toward the admission of scientific test results without testimony-perhaps because the States have recognized the increasing reliability of scientific testing. See Appendix B, *infra* (citing cases from three States overruling or limiting previous precedents that had adopted the Court's rule as a matter of state law). It appears that a mere six courts continue to interpret their States' hearsay laws to require analysts to testify. See *ibid.* And, of course, where courts have grounded their decisions in state law, rather than the Constitution, the legislatures in those States have had, until now, the power to abrogate the courts' interpretation if the costs were shown to outweigh the benefits. Today the Court strips that authority from the States by carving the minority view into the constitutional text.

State legislatures, and not the Members of this Court, have the authority to shape the rules of evidence. The Court therefore errs when it relies in such great measure on the recent report of the National Academy of Sciences. *Ante*, at 12-14 (discussing National Research Council of the National Academies, *Strengthening Forensic Science in the United States: A Path Forward* (Prepublication Copy Feb. 2009)). That report is not directed to this Court, but rather to the elected representatives in Congress and the state legislatures, who, unlike Members of this Court, have the power and competence to determine whether scientific tests are unreliable and, if so, whether testimony is the proper solution to the problem.

The Court rejects the well-established understanding-extending across at least 90 years, 35 States and six Federal Courts of Appeals-that the Constitution does not require analysts to testify in court before their analysis may be introduced into evidence. The only authority on which the Court can rely is its own speculation on the meaning of the word "testimonial," made in two recent opinions that said nothing about scientific analysis or scientific analysts.

III

In an attempt to show that the "sky will not fall after

today's decision," *ante*, at 20, the Court makes three arguments, none of which withstands scrutiny.

A

In an unconvincing effort to play down the threat that today's new rule will disrupt or even end criminal prosecutions, the Court professes a hope that defense counsel will decline to raise what will soon be known as the Melendez-Diaz objection. *Ante*, at 22. The Court bases this expectation on its understanding that defense attorneys surrender constitutional rights because the attorneys do not "want to antagonize the judge or jury by wasting their time." *Ibid.*

The Court's reasoning is troubling on at least two levels. First, the Court's speculation rests on the apparent belief that our Nation's trial judges and jurors are unwilling to accept zealous advocacy and that, once "antagonize[d]" by it, will punish such advocates with adverse rulings. *Ibid.* The Court offers no support for this stunning slur on the integrity of the Nation's courts. It is commonplace for the defense to request, at the conclusion of the prosecution's opening case, a directed verdict of acquittal. If the prosecution has failed to prove an element of the crime-even an element that is technical and rather obvious, such as movement of a car in interstate commerce-then the case must be dismissed. Until today one would not have thought that judges should be angered at the defense for making such motions, nor that counsel has some sort of obligation to avoid being troublesome when the prosecution has not done all the law requires to prove its case.

Second, even if the Court were right to expect trial judges to feel "antagonize[d]" by Melendez-Diaz objections and to then vent their anger by punishing the lawyer in some way, there is no authority to support the Court's suggestion that a lawyer may shirk his or her professional duties just to avoid judicial displeasure. There is good reason why the Court cites no authority for this suggestion-it is contrary to what some of us, at least, have long understood to be defense counsel's duty to be a zealous advocate for every client. This Court has recognized the bedrock principle that a competent criminal defense lawyer must put the prosecution to its proof:

"[T]he adversarial process protected by the Sixth Amendment requires that the accused have 'counsel acting in the role of an advocate.' *Anders v. California*, 386 U. S. 738, 743 (1967). The right to the effective assistance of counsel is thus the right of the accused to require the prosecution's case to survive the crucible of meaningful adversarial testing. When a true adversarial criminal trial has been conducted . . . the kind of testing envisioned by the Sixth Amendment has occurred. But if the process loses its character as a confrontation between adversaries, the constitutional guarantee is violated." *United States v. Cronin*, 466 U. S. 648, 656-657 (1984)

(footnotes omitted).

See also ABA Model Code of Professional Responsibility, Canon 7-1, in ABA Compendium of Professional Responsibility Rules and Standards (2008) ("The duty of a lawyer, both to his client and to the legal system, is to represent his client zealously within the bounds of the law . . . " (footnotes omitted)).

The instant case demonstrates how zealous defense counsel will defend their clients. To convict, the prosecution must prove the substance is cocaine. Under the Court's new rule, apparently only an analyst's testimony suffices to prove that fact. (Of course there will also be a large universe of other crimes, ranging from homicide to robbery, where scientific evidence is necessary to prove an element.) In cases where scientific evidence is necessary to prove an element of the crime, the Court's rule requires the prosecution to call the person identified as the analyst; this requirement has become a new prosecutorial duty linked with proving the State's case beyond a reasonable doubt. Unless the Court is ashamed of its new rule, it is inexplicable that the Court seeks to limit its damage by hoping that defense counsel will be derelict in their duty to insist that the prosecution prove its case. That is simply not the way the adversarial system works.

In any event, the Court's hope is sure to prove unfounded. The Court surmises that "[i]t is unlikely that defense counsel will insist on live testimony whose effect will be merely to highlight rather than cast doubt upon the forensic analysis." Ante, at 22. This optimistic prediction misunderstands how criminal trials work. If the defense does not plan to challenge the test result, "highlight[ing]" that result through testimony does not harm the defense as the Court supposes. If the analyst cannot reach the courtroom in time to testify, however, a Melendez-Diaz objection grants the defense a great windfall: The analyst's work cannot come into evidence. Given the prospect of such a windfall (which may, in and of itself, secure an acquittal) few zealous advocates will pledge, prior to trial, not to raise a Melendez-Diaz objection. Defense counsel will accept the risk that the jury may hear the analyst's live testimony, in exchange for the chance that the analyst fails to appear and the government's case collapses. And if, as here, the defense is not that the substance was harmless, but instead that the accused did not possess it, the testimony of the technician is a formalism that does not detract from the defense case.

In further support of its unlikely hope, the Court relies on the Brief for Law Professors as Amici Curiae 7-8, which reports that nearly 95% of convictions are obtained via guilty plea and thus do not require in-court testimony from laboratory analysts. Ante, at 20. What the Court does not consider is how its holding will alter these statistics. The defense bar today gains the formidable power to require the government to transport the analyst

to the courtroom at the time of trial. Zealous counsel will insist upon concessions: a plea bargain, or a more lenient sentence in exchange for relinquishing this remarkable power.

B

As further reassurance that the "sky will not fall after today's decision," ante, at 20, the Court notes that many States have enacted burden-shifting statutes that require the defendant to assert his Confrontation Clause right prior to trial or else "forfeit" it "by silence." Ibid. The Court implies that by shifting the burden to the defendant to take affirmative steps to produce the analyst, these statutes reduce the burden on the prosecution.

The Court holds that these burden-shifting statutes are valid because, in the Court's view, they "shift no burden whatever." Ante, at 21. While this conclusion is welcome, the premise appears flawed. Even what the Court calls the "simplest form" of burden-shifting statutes do impose requirements on the defendant, who must make a formal demand, with proper service, well before trial. Some statutes impose more requirements, for instance by requiring defense counsel to subpoena the analyst, to show good cause for demanding the analyst's presence, or even to affirm under oath an intent to cross-examine the analyst. See generally Metzger, *Cheating the Constitution*, 59 Vand. L. Rev. 475, 481-485 (2006). In a future case, the Court may find that some of these more onerous burden-shifting statutes violate the Confrontation Clause because they "impos[e] a burden . . . on the defendant to bring . . . adverse witnesses into court." Ante, at 19.

The burden-shifting statutes thus provide little reassurance that this case will not impose a meaningless formalism across the board.

C

In a further effort to support its assessment that today's decision will not cause disruption, the Court cites 10 decisions from States that, the Court asserts, "have already adopted the constitutional rule we announce today." Ante, at 20, and n. 11. The Court assures us that "there is no evidence that the criminal justice system has ground to a halt in the[se] States." Ante, at 20.

On inspection, the citations prove far less reassuring than promised. Seven were decided by courts that considered themselves bound by Crawford. These cases thus offer no support for the Court's assertion that the state jurists independently "adopted" the Court's interpretation as a matter of state law. Quite the contrary, the debate in those seven courts was over just how far this Court intended Crawford to sweep. See, e.g., *State v. Belvin*, 986 So. 2d 516, 526 (Fla. 2008) (Wells, J., concurring in part and dissenting in part) ("I believe that the majority has extended the Crawford and Davis

decisions beyond their intended reach" (citations omitted)). The Court should correct these courts' overbroad reading of Crawford, not endorse it. Were the Court to do so, these seven jurisdictions might well change their position.

Moreover, because these seven courts only "adopted" the Court's position in the wake of Crawford, their decisions are all quite recent. These States have not yet been subject to the widespread, adverse results of the formalism the Court mandates today.

The citations also fail to reassure for a different reason. Five of the Court's 10 citations-including all 3 pre-Crawford cases-come from States that have reduced the confrontation right. Four States have enacted a burden-shifting statute requiring the defendant to give early notice of his intent to confront the analyst. See Part III-B, *supra*; Colorado: *Hinojos-Mendoza v. People*, 169 P. 3d 662, 668-671 (Colo. 2007), Colo. Rev. Stat. §16-3-309 (2008) (defendant must give notice 10 days before trial); Georgia: *Compare Miller v. State*, 266 Ga. 850, 854-855, 472 S. E. 2d 74, 78-79 (1996) (striking down earlier notice statute requiring defendant to show good cause, prior to trial, to call the analyst), with Ga. Code Ann. §35-3-154.1 (2006) (defendant must give notice 10 days before trial); Illinois: *People v. McClanahan*, 191 Ill. 2d 127, 133-134, 729 N. E. 2d 470, 474-475 (2000), Ill. Comp. Stat., ch. 725, §5/115-15 (2006) (defendant must give notice "within 7 days" of "receipt of the report"); Oregon: *State v. Birchfield*, 342 Ore., at 631-632, 157 P. 3d, at 220 (suggesting that a "typical notice requirement" would be lawful), see Ore. Rev. Stat. §475.235 (2007) (defendant must give notice 15 days before trial). A fifth State, Mississippi, excuses the prosecution from producing the analyst who conducted the test, so long as it produces someone. Compare *Barnette v. State*, 481 So. 2d 788, 792 (Miss. 1985) (cited by the Court), with *McGowen v. State*, 859 So. 2d 320, 339-340 (Miss. 2003) (the Sixth Amendment does not require confrontation with the particular analyst who conducted the test). It is possible that neither Mississippi's practice nor the burden-shifting statutes can be reconciled with the Court's holding. See Part III-B, *supra*. The disruption caused by today's decision has yet to take place in these States.

* * *

Laboratory analysts who conduct routine scientific tests are not the kind of conventional witnesses to whom the Confrontation Clause refers. The judgment of the Appeals Court of Massachusetts should be affirmed.

AppendixES

A

The following authorities held, prior to Crawford, that the Confrontation Clause does not require

confrontation of the analyst who conducted a routine scientific test: *United States v. Vietor*, 10 M. J. 69, 72 (Ct. Mil. App. 1980) (laboratory drug report); *State v. Cosgrove*, 181 Conn. 562, 574-578, 436 A. 2d 33, 40-41 (1980) (same); *Howard v. United States*, 473 A. 2d 835, 838-839 (D. C. 1984) (same); *Baber v. State*, 775 So. 2d 258 (Fla. 2000) (blood-alcohol test); *Commonwealth v. Harvard*, 356 Mass. 452, 253 N. E. 2d 346 (1969) (laboratory drug report); *DeRosa v. First Judicial Dist. Court of State ex rel. Carson City*, 115 Nev. 225, 232-233, 985 P. 2d 157, 162 (1999) (per curiam) (blood-alcohol test); *State v. Coombs*, 149 N. H. 319, 321-322, 821 A. 2d 1030, 1032 (2003) (blood-alcohol test); *State v. Fischer*, 459 N. W. 2d 818 (N. D. 1990) (laboratory drug report); *Commonwealth v. Carter*, 593 Pa. 562, 932 A. 2d 1261 (2007) (laboratory drug report; applying pre-Crawford law); *State v. Tavares*, 590 A. 2d 867, 872-874 (R. I. 1991) (laboratory analysis of victim's bodily fluid); *State v. Hutto*, 325 S. C. 221, 228-230, 481 S. E. 2d 432, 436 (1997) (fingerprint); *State v. Best*, 146 Ariz. 1, 3-4, 703 P. 2d 548, 550-551 (App. 1985) (same); *State v. Christian*, 119 N. M. 776, 895 P. 2d 676 (App. 1995) (blood-alcohol test); *State v. Sosa*, 59 Wash. App. 678, 684-687, 800 P. 2d 839, 843-844 (1990) (laboratory drug report).

The following authorities held, prior to Crawford, that the Confrontation Clause does not require confrontation of the results of autopsy and hospital reports describing the victim's injuries: *People v. Clark*, 3 Cal. 4th 41, 157-159, 833 P. 2d 561, 627-628 (1992) (autopsy report); *Henson v. State*, 332 A. 2d 773, 774-776 (Del. 1975) (treating physician's report of victim's injuries, with medical conclusions redacted); *Collins v. State*, 267 Ind. 233, 235-236, 369 N. E. 2d 422, 423 (1977) (autopsy report); *State v. Wilburn*, 196 La. 113, 115-118, 198 So. 765, 765-766 (1940) (hospital record stating victim's cause of death) (citing *State v. Parker*, 7 La. Ann. 83 (1852) (coroner's written inquest stating cause of death)); *State v. Garlick*, 313 Md. 209, 223-225, 545 A. 2d 27, 34 (1988) (blood test showing presence of illegal drug); *People v. Kirtdoll*, 391 Mich. 370, 385-391, 217 N. W. 2d 37, 46-48 (1974) (treating physician's report describing victim's injuries); *State v. Spikes*, 67 Ohio St. 2d 405, 411-415, 423 N. E. 2d 1122, 1128-1130 (1981) (treating physician's report of defendant's injuries); *State v. Kreck*, 86 Wash. 2d 112, 117-120, 542 P. 2d 782, 786-787 (1975) (laboratory report stating that murder victim's blood contained poison).

The following authorities held, prior to Crawford, that the Confrontation Clause does not require confrontation of certificates stating that instruments were in good working order at the time of a test: *State v. Ing*, 53 Haw. 466, 467-473, 497 P. 2d 575, 577-579 (1972) (certificate that police car's speedometer was in working order), accord, *State v. Ofa*, 9 Haw. App. 130, 135-139, 828 P. 2d 813, 817-818 (1992) (per curiam) (certificate that breathalyzer was in working order); *State v. Ruiz*,

120 N. M. 534, 903 P. 2d 845 (App. 1995) (same); *State v. Dilliner*, 212 W. Va. 135, 141-142, 569 S. E. 2d 211, 217-218 (2002) (same); *State v. Huggins*, 659 P. 2d 613, 616-617 (Alaska App. 1982) (same); *State v. Conway*, 70 Ore. App. 721, 690 P. 2d 1128 (1984) (same).

The following decisions reduced the right to confront the results of scientific tests by upholding burden-shifting statutes that require the defendant to take affirmative steps prior to trial to summon the analyst: *Johnson v. State*, 303 Ark. 12, 18-20, 792 S. W. 2d 863, 866-867 (1990) (defendant must give notice 10 days before trial); *State v. Davison*, 245 N. W. 2d 321 (Iowa 1976), Iowa Code Ann. §691.2 (2008) (same); *State v. Crow*, 266 Kan. 690, 974 P. 2d 100 (1999) (defendant must give notice within 10 days of receiving the result and must show that the result will be challenged at trial); *State v. Christianson*, 404 A. 2d 999 (Me. 1979) (defendant must give notice 10 days before trial); *State v. Miller*, 170 N. J. 417, 436-437, 790 A. 2d 144, 156 (2002) (defendant must give notice within 10 days of receiving the result and must show that the result will be challenged at trial); *State v. Smith*, 312 N. C. 361, 381-382, 323 S. E. 2d 316, 328 (1984) (defendant must subpoena analyst); *State v. Hancock*, 317 Ore. 5, 9-12, 854 P. 2d 926, 928-930 (1993) (same), but see *State v. Birchfield*, 342 Ore. 624, 157 P. 3d 216 (reducing defendant's burden); *State v. Hughes*, 713 S. W. 2d 58 (1986) (defendant must subpoena analyst); *Magruder v. Commonwealth*, 275 Va. 283, 295-300, 657 S. E. 2d 113, 119-121 (2008) (defendant must "call the person performing such analysis," at the State's expense); *People v. Mayfield-Ulloa*, 817 P. 2d 603 (Colo. App. 1991) (defendant must give notice to State and the analyst 10 days before trial); *State v. Matthews*, 632 So. 2d 294, 300-302 (La. App. 1993) (defendant must give notice five days before trial).

B

The following authorities hold that State Rules of Evidence permit the results of routine scientific tests to be admitted into evidence without confrontation: *State v. Torres*, 60 Haw. 271, 589 P. 2d 83 (1978) (X ray of victim's body); *State v. Davis*, 269 N. W. 2d 434, 440 (Iowa 1978) (laboratory analysis of victim's bodily fluid); *State v. Taylor*, 486 S. W. 2d 239, 241-243 (Mo. 1972) (microscopic comparison of wood chip retrieved from defendant's clothing with wood at crime scene); *State v. Snider*, 168 Mont. 220, 229-230, 541 P. 2d 1204, 1210 (1975) (laboratory drug report); *People v. Porter*, 46 App. Div. 2d 307, 311-313, 362 N. Y. S. 2d 249, 255-256 (1974) (blood-alcohol report); *Robertson v. Commonwealth*, 211 Va. 62, 64-68, 175 S. E. 2d 260, 262-264 (1970) (laboratory analysis of victim's bodily fluid); *Kreck*, 86 Wash. 2d, 117-120, 542 P. 2d, 786-787 (laboratory report stating that murder victim's blood contained poison).

The following authorities hold that State Rules of

Evidence permit autopsy and hospital reports to be admitted into evidence without confrontation: *People v. Williams*, 174 Cal. App. 2d 364, 389-391, 345 P. 2d 47, 63-64 (1959) (autopsy report); *Henson*, *supra*, at 775-776 (report of physician who examined victim); *Wilburn*, 196 La., at 115-118, 198 So., at 765-766 (hospital record stating victim's cause of death); *Garlick*, 313 Md., at 223-225, 545 A. 2d, at 34 (blood test); *State v. Reddick*, 53 N. J. 66, 68-69, 248 A. 2d 425, 426-427 (1968) (*per curiam*) (autopsy report stating factual findings, but not opinions, of medical examiner); *People v. Nisonoff*, 293 N. Y. 597, 59 N. E. 2d 420 (1944) (same).

The following authorities hold that State Rules of Evidence permit certificates, which state that scientific instruments were in good working order, to be admitted into evidence without confrontation: *Wester v. State*, 528 P. 2d 1179, 1183 (Alaska 1974) (certificate stating that breathalyzer machine was in working order); *Best v. State*, 328 A. 2d 141, 143 (Del. 1974) (certificate that breathalyzer was in working order); *State v. Rines*, 269 A. 2d 9, 13-15 (Me. 1970) (manufacturer's certificate stating that blood-alcohol test kit was in working order admissible under the business-records exception); *McIlwain v. State*, 700 So. 2d 586, 590-591 (Miss. 1997) (same).

Taking the minority view, the following authorities interpret state hearsay rules to require confrontation of the results of routine scientific tests or observations of medical personnel: *State v. Sandoval-Tena*, 138 Idaho 908, 912, 71 P. 3d 1055, 1059 (2003) (laboratory drug report inadmissible under state hearsay rule); *Spears v. State*, 241 So. 2d 148 (Miss. 1970) (nurse's observation of victim inadmissible under state hearsay rule and constitution); *State v. James*, 255 S. C. 365, 179 S. E. 2d 41 (1971) (chemical analysis of victim's bodily fluid inadmissible under state hearsay rule); *Cole v. State*, 839 S. W. 2d 798 (Tex. Ct. Crim. App. 1990) (laboratory drug report inadmissible under state hearsay rule); *State v. Workman*, 2005 UT 66, ¶¶9-20, 122 P. 3d 639, 642-643 (same); *State v. Williams*, 2002 WI 58, ¶¶32-55, 253 Wis. 2d 99, 118-127, 644 N. W. 2d 919, 928-932 (same), but see *id.*, at 109-117, 644 N. W. 2d, at 924-927 (no confrontation violation where expert testified based on test results prepared by an out-of-court analyst).

This summary does not include decisions that find test results inadmissible because the State failed to lay a proper foundation. Rather than endorse the minority view, those cases merely reaffirm the government's burden to prove the authenticity of its evidence and the applicability of an exception to the state hearsay rule. See, e.g., *State v. Fisher*, 178 N. W. 2d 380 (Iowa 1970) (laboratory test of victim's bodily fluid inadmissible under business-records exception because the prosecution did not show that it was kept in regular course of business); *State v. Foster*, 198 Kan. 52, 422 P. 2d 964 (1967) (no foundation laid for introduction of blood-alcohol test because the prosecution did not show

that the test was conducted in the usual course of business); *Moon v. State*, 300 Md. 354, 367-371, 478 A. 2d 695, 702-703 (1984) (blood alcohol test inadmissible because insufficient foundational evidence that the test was conducted in a reliable manner); cf. *Davis*, 269 N.W. 2d, at 440 (laboratory test of victim's bodily fluid admitted under business-records exception to state hearsay rule); *Garlick*, 313 Md., at 215, n. 2, 223-225, 545 A. 2d, at 30, n. 2, 34 (laboratory test of defendant's blood falls within "firmly rooted" hearsay exception).

Three States once espoused the minority view but appear to have changed course to some degree: *People v. Lewis*, 294 Mich. 684, 293 N. W. 907 (1940) (hospital record describing victim's injuries inadmissible hearsay), overruled by *Kirtdoll*, 391 Mich., at 372, 217 N. W. 2d, at 39 (noting that "in its 35 year long history, *Lewis* . . . has never been relied upon to actually deny admission into evidence of a business entry record in a criminal case"), but see *People v. McDaniel*, 469 Mich. 409, 670 N. W. 2d 659 (2003) (per curiam) (police laboratory report inadmissible hearsay); *State v. Tims*, 9 Ohio St. 2d 136, 137-138, 224 N. E. 2d 348, 350 (1967) (hospital record describing victim's injuries inadmissible hearsay), overruled by *Spikes*, 67 Ohio St. 2d, at 411-415, 423 N. E. 2d, at 1128-1130; *State v. Henderson*, 554 S. W. 2d 117 (Tenn. 1977) (laboratory drug report inadmissible absent confrontation), abrogated by statute as recognized by *Hughes*, 713 S. W. 2d 58 (statute permitted defendant to subpoena analyst who prepared blood alcohol report; by not doing so, defendant waived his right to confront the analyst).