

PRESENT: All the Justices

IN RE: SHERMAN BROWN

Record No. 161422

OPINION BY
JUSTICE D. ARTHUR KELSEY
MARCH 22, 2018

UPON A PETITION FOR A WRIT OF ACTUAL INNOCENCE

In 1970, a jury found Sherman Brown guilty of first-degree murder of a four-year-old child. The child's mother ("M.B.") testified that, after she rejected Brown's demand for sex, he knocked her unconscious, and upon awaking, she discovered that she had been repeatedly stabbed. While she was unconscious, her four-year-old son had been stabbed to death. Brown did not testify at his trial or proffer any evidence suggesting that someone else committed the attack.

In 2016, Brown filed a petition seeking a writ of actual innocence pursuant to Code §§ 19.2-327.1 to -327.6, which govern writs of actual innocence based on biological evidence. Brown asserts under oath that he is "actually innocent" of the crime, Code § 19.2-327.3(A)(ii), and that recent DNA testing by a private laboratory, Bode Cellmark Forensics ("Bode"), conclusively exonerates him with "clear and convincing evidence" such that "no rational trier of fact would have found proof of guilt . . . beyond a reasonable doubt," Code § 19.2-327.5. Reviewing this case under our original jurisdiction, we dismiss Brown's petition for two reasons.

First, the governing statutes limit our review of allegedly exculpatory biological evidence to the findings of the Commonwealth's Department of Forensic Science ("DFS"). DFS analyzed a vaginal smear slide presented by Brown and was unable to identify sufficient amounts of DNA in order to render any conclusion as to whether Brown could be included or excluded as a contributor to the DNA on the slide. The findings of DFS, therefore, do not support Brown's claim of actual innocence.

Second, even if we were authorized to consider the private laboratory’s results obtained by Brown, he would still have the burden of proving that the evidence submitted to us in this writ proceeding — DNA test results from the Bode laboratory, the factual proffers in Brown’s petition, the post-trial evidence presented in the Commonwealth’s response, and the evidence presented at the original trial — provide, in the aggregate, clear-and-convincing proof that “no rational trier of fact would have found proof of guilt . . . beyond a reasonable doubt.” *Id.* We find this evidence falls far short of satisfying this clear-and-convincing statutory standard of proof.

I.

Our analysis begins with a restatement of first principles. We have no common-law authority to grant what amounts to a judicial pardon — that is, to set free a convict lawfully found guilty by a jury — based upon his later protestation that he was in fact innocent. Under English common law, as relevant today as it was at the Founding,¹ “the power to exercise executive clemency lay within the prerogative of the crown,” *Gallagher v. Commonwealth*, 284 Va. 444, 450, 732 S.E.2d 22, 25 (2012), and “[t]here simply was no such thing as a judicial pardon,” *Taylor v. Commonwealth*, 58 Va. App. 435, 445, 710 S.E.2d 518, 523 (2011). The “traditional remedy for claims of innocence based on new evidence, discovered too late in the

¹ “First enacted in 1776, Code § 1-200 provides that “[t]he common law of England, insofar as it is not repugnant to the principles of the Bill of Rights and Constitution of this Commonwealth, shall continue in full force within the same, and be the rule of decision, except as altered by the General Assembly.” *Tvardek v. Powhatan Vill. Homeowners Ass’n*, 291 Va. 269, 274 n.1, 784 S.E.2d 280, 282 n.1 (2016). “As Justice Spratley explained, Virginia ‘expressly provided that [English common law] shall “be the rule of decision, except in those respects wherein it is or shall be altered by the General Assembly.” These words are simple and clear. They mean what they say.’” *Id.* (quoting *Brown v. Brown*, 183 Va. 353, 358, 32 S.E.2d 79, 81 (1944)); see also *Robinson v. Matt Mary Moran, Inc.*, 259 Va. 412, 417-18, 525 S.E.2d 559, 562 (2000).

day to file a new trial motion, has been executive clemency.” *Herrera v. Collins*, 506 U.S. 390, 417 (1993).

The common law, however, always remains subject to the sovereign power of citizens to amend our Constitution and the power of their representatives to enact statutes in derogation of the common law. In 2002, Virginians did just that when they amended the Constitution of Virginia to vest this Court with “original jurisdiction . . . to consider claims of actual innocence presented by convicted felons.” Va. Const. art. VI, § 1. That newly granted judicial power, however, is limited. It can only be exercised “in *such cases* and in *such manner* as may be provided by the General Assembly.” *Id.* (emphases added).

If a convict seeks exoneration outside of these statutory boundaries, he may obtain it only from the Governor of Virginia, who is vested with the power of executive clemency. *See generally Blount v. Clarke*, 291 Va. 198, 204-05, 782 S.E.2d 152, 155 (2016). The opportunity to seek executive clemency serves the dual goals of defining the limited scope of the judicial role while providing a fail safe for claims of innocence that fall outside of the statutory writ procedure. *See Herrera*, 506 U.S. at 415 (“Executive clemency has provided the ‘fail safe’ in our criminal justice system.”). *Compare, e.g.,* Governor Timothy M. Kaine, List of Pardons, Commutations, Reprieves and Other Forms of Clemency, S. Doc. No. 2, at 22 (2010) (granting absolute pardon to Arthur Lee Whitfield), *with, e.g., In Re: Whitfield*, Record Nos. 042086 and 042087, slip op. at 4 (Va. Oct. 21, 2005) (unpublished) (dismissing Whitfield’s petitions for writs of actual innocence because the Court did “not have the statutory authority to consider petitioner’s claims”).

For these reasons, we limit our analysis to the actual-innocence statutes applicable to petitions asserting newly discovered or previously untested biological evidence. Implementing

the authority established by Article VI, Section 1 of the Constitution of Virginia, Code § 19.2-327.2 vests the Court with “the authority to issue writs of actual innocence” based upon biological evidence. In exercising this authority, we must base our determination upon “the petition, the response by the Commonwealth, previous records of the case, the record of any hearing held under [Chapter 19.2] and the record of hearings held pursuant to [Code] § 19.2-327.1 [the testing statute], and if applicable, any findings certified from the circuit court” pursuant to a remand order from this Court. Code § 19.2-327.5.

Under settled principles, we may also take into account factual matters properly within the scope of judicial notice. *See* Va. R. Evid. 2:201(a). These facts include those “not subject to reasonable dispute in that [they are] either (1) common knowledge or (2) capable of accurate and ready determination by resort to sources whose accuracy cannot reasonably be questioned.” *Id.* *See generally* Charles E. Friend & Kent Sinclair, *The Law of Evidence in Virginia* § 3-2 at 174-88 (7th ed. 2012 & Supp. 2017); Kent Sinclair et al., *A Guide to the Rules of Evidence in Virginia* 13-14 (2017-2018 ed.).

We incorporate all of these sources into our review of the relevant facts and our application of the statutory criteria to this case.²

A. THE EVIDENCE AT THE 1970 TRIAL

The record before us begins with the evidence presented by the Commonwealth at Brown’s 1970 jury trial.³ Witnesses established that M.B. was at home on October 1, 1969, with her two young children, a two-year-old and a four-year-old. After lunch, M.B. put the two-year-

² Both Brown and the Commonwealth have proffered extensive post-trial evidence in this writ proceeding. Neither party, however, has objected to our consideration of any of these proffers. Because resolution of this case does not require “further development of the facts,” we decline to enter a remand order pursuant to Code § 19.2-327.4.

³ Brown presented no witnesses or evidence at his trial.

old in his crib for a nap. M.B. then put on a nightgown, read to her four-year-old in bed, and then turned off the light to join him for an afternoon nap. Before either of them fell asleep, M.B.'s father arrived for a visit.

During her father's visit, M.B. received a phone call from Brown.⁴ He repeatedly asked her if he could come over to her home to talk. She said no each time and was unnerved by his persistent requests. After her father left, M.B. and the four-year-old returned to the bedroom intending to take the planned nap. Just as M.B. started to untie her robe, she heard the front gate of the fence in front of her residence swing open. She looked out the window, saw no one, and walked to the front door with the four-year-old. When she cracked the front door slightly open, she saw Brown through an exterior screen door. He asked to come inside. She said no. He insisted, but she continued to refuse his request.

While still standing outside, Brown asked M.B. if she would get him a cup of water. She walked to her kitchen to fetch a paper cup of water, and when she returned, Brown had opened the screen door and stepped into the home. She was upset to see him inside the home, but she handed him the cup of water anyway. Brown continued to insist that he wanted to talk to her and even asked her to give him a tour of her home, but she continued to refuse each of his requests. At one point, she "thought that [she] smelled alcohol on his breath," and she "asked him if he had been drinking," which he denied. Trial Tr. at 167. Eventually, Brown abruptly asked her, "Will you have sex with me?" *Id.* at 162. Now "terrified," M.B. replied, "Of course not." *Id.* After Brown asked her why she would not have sex with him, M.B. answered that she was

⁴ Brown also had contacted M.B. on two other occasions in the previous two months. M.B. testified that she had a recent phone conversation with Brown, in which he had offered to do yard work for her. She also recalled him previously approaching her when she was outside in her yard to again inquire about yard work after he had finished running laps in her front field.

married, that Brown was not her husband, and that Brown should leave. M.B.'s four-year-old was also in the room with them at the time, and M.B. indicated that "little ears were listening" when she requested that Brown leave. Brown finally declared, "I'm so sexed up I don't know what to do." *Id.* "I'm sorry," M.B. responded, "you will have to go somewhere else. I'm not available." *Id.*

M.B.'s next memory was "pitching forward" after "receiving very painful blows" to her side, which rendered her unconscious. *Id.* at 163. When she awoke, she was unable to move. Her sister-in-law arrived later that afternoon and found M.B. on the floor in a pool of blood. After she discovered that M.B.'s phone was hanging from its wires with its receiver broken in half, the sister-in-law drove to a neighbor's home to ask them to call both the rescue squad and her husband, who could pick up M.B.'s husband from his job. M.B.'s sister-in-law returned to M.B.'s home and found the two-year-old unharmed in his crib, but she discovered the four-year-old lying face down on a bloody bed. When the rescue squad arrived, they discovered that M.B. had been stabbed multiple times and still had a knife blade without its handle lodged in her chest. Her underwear had been taken off and were on the floor nearby. The medical examiner later declared the four-year-old dead from repeated stab wounds.

M.B. was taken to the hospital for emergency surgery. She had suffered knife wounds to her chest, lower back, and abdomen and had open scalp lacerations from what the surgeon assumed were "blow[s]" to her head. *Id.* at 119. One of the stab wounds went 12 to 14 inches through her abdominal wall and into her liver and spleen. The child victim was transported to the morgue. He had suffered two stab wounds piercing his heart, four lacerations to his scalp exposing his skull, stab wounds to his left lung and right wrist, and multiple contusions to his forehead, face, arms, legs, and ears.

The Commonwealth charged Brown with a single crime, the murder of M.B.'s four-year-old son. Witnesses at Brown's trial established that on the day of the murder, Brown spent the morning with his brother-in-law, Larry Waller, and Larry's cousin, William Waller. They drank a fifth of whiskey together while working on Brown's car and then drove to Ivy, a town just outside of Charlottesville, for lunch. At Brown's request, William dropped off Brown and Larry at Brown's father's house, which was directly across the road from M.B.'s house. At Brown's father's house, Larry overheard Brown make a telephone call. Shortly after that call, Brown and Larry walked across the road so that Brown could jog in the field on M.B.'s property in front of her home. After watching Brown jog a few laps, Larry caught a ride on the school bus after 3:00 p.m. and left to visit a friend, who was about to get out of school for the day.

After spending about twenty minutes at his friend's house, Larry returned to his home, in which Brown also lived, at approximately 4:30 p.m. Larry discovered Brown in his own bedroom washing up. Brown turned to Larry and simply said, "I messed up." *Id.* at 232, 251. Larry did not know what Brown had meant by that statement, and Brown did not provide an explanation. Brown went to work that evening where he was arrested around 6:15 p.m. and then questioned by police about the murder of M.B.'s four-year-old son. After reading Miranda warnings to Brown, *see id.* at 208, 214, officers drove Brown to M.B.'s home where an investigator asked him if he had been on M.B.'s property that day, which Brown denied.

The Commonwealth's opening statement at Brown's trial focused entirely on the only charge against him, the murder of M.B.'s son. The Commonwealth never once suggested in its opening statement that Brown raped M.B., and M.B. did not make that accusation during her testimony. Furthermore, none of the evidence offered at trial demonstrated vaginal pain, injury, or trauma, which often accompany rape. Instead, the Commonwealth's theory of the case was

that Brown may have “*attempted* to have intercourse with her” before stabbing and beating her. *Id.* at 432 (emphasis added). Given the ambiguous circumstantial evidence, the Commonwealth conceded that whether “he tried to rape [her] or did rape her[,] we will never know.” *Id.* at 402.⁵

In his closing statement to the jury, Brown’s counsel pointed out that the Commonwealth did not introduce any evidence of sperm found on Brown or M.B. “You can be certain if they found [semen]” on the victim, witnesses “would have been here to testify to it.” *Id.* at 418. That evidentiary omission, counsel argued to the jury, discounts any “motive” suggesting that Brown murdered M.B.’s four-year-old son and attempted to murder M.B. in order to cover up an actual “rape,” *id.* at 417-18, a theory of guilt the Commonwealth never advanced at trial.⁶

The jury found Brown guilty of first-degree murder of M.B.’s son and sentenced him to death. On appeal, we affirmed the death sentence and rejected Brown’s challenge to the finding of guilt. In response to his sufficiency challenge, we stated that “[a] detailed review of the evidence of the circumstances surrounding this murder and the evidence pointing to the defendant’s guilt as the murderer leaves no doubt in our mind that this evidence, viewed in the light most favorable to the Commonwealth, amply supports the jury’s verdict.” *Brown v.*

⁵ The Commonwealth maintained this position during its closing argument at Brown’s 1973 resentencing hearing. *See* Sent’g Tr. at 475 (“[I]t’s very probable that Sherman Brown sexually assaulted [M.B.], *we don’t know for sure* but I point out the fact that she testified that when he arrived her underpants were on and when the people found her stabbed, her underpants were off.” (emphasis added)).

⁶ Brown claims that we should take into account his post-conviction challenge to various items of fiber and hair evidence offered by the Commonwealth at his criminal trial. We need not decide whether it would be appropriate to do so. The Commonwealth’s expert witness offered, at best, a weak opinion on the incriminating nature of the hair and fiber evidence, *see* Trial Tr. at 306-15, 327-33, and the Commonwealth significantly discounted the inculpatory weight of the hair evidence, *id.* at 397-99. Neither the hair nor the fiber evidence has more than a marginal effect on our totality-of-the-evidence review.

Commonwealth, 212 Va. 515, 516, 184 S.E.2d 786, 787 (1971), *vacated in part on other grounds*, 408 U.S. 940 (1972).

In the early 1970s, the United States Supreme Court interpreted the Eighth Amendment to declare capital punishment categorically unconstitutional. The de facto moratorium began with *Furman v. Georgia*, 408 U.S. 238 (1972), a 5-4 per curiam order accompanied by nine separate opinions from each of the Justices, and ended with *Gregg v. Georgia*, 428 U.S. 153 (1976), which reinstated, with qualifications, the constitutionality of the death penalty. During the moratorium, Brown appealed to the United States Supreme Court and obtained a summary order reversing our affirmance on direct appeal “insofar as it leaves undisturbed the death penalty imposed.” *Brown*, 408 U.S. at 940. In response, we remanded Brown’s case to the trial court for resentencing. After receiving a jury verdict fixing the sentence at life imprisonment, the trial court entered a final order approving the sentence without suspension.⁷

B. BROWN ACCEPTS “FULL RESPONSIBILITY”

During a parole interview in 1991, Brown stated, “I accept full responsibility for my crime and I feel sorry for the victim, but I can’t undo what’s been done.” *Commonwealth’s Mot. to Dismiss Ex. 7*, at 12 [hereinafter MTD]; *see also id. Ex. 5*, at 1 (expressing “fervent regret and remorse” in a 1985 interview for the Parole Board’s consideration). During an earlier parole interview in 1984, Brown offered a detailed statement to the Parole Board explaining how the

⁷ In Virginia, “the punishment as fixed by the jury is not final or absolute, since its finding on the proper punishment is subject to suspension by the trial judge, in whole or in part, on the basis of any mitigating facts that the convicted defendant can marshal.” *Jones v. Commonwealth*, 293 Va. 29, 43 n.12, 795 S.E.2d 705, 713 n.12 (2017) (quoting *Vines v. Muncy*, 553 F.2d 342, 349 (4th Cir. 1977)). “Under such practice, the convicted criminal defendant is entitled to ‘two decisions’ on the sentence, one by the jury and the other by the trial judge in the exercise of his statutory right to suspend; his ‘ultimate sentence . . . does not [therefore] rest with the jury’ alone but is always subject to the control of the trial judge.” *Vines*, 553 F.2d at 349 (alterations in original) (footnotes and citations omitted).

crimes occurred. After a bout of “drinking” alcohol and “taking some LSD,” he approached M.B. at her home knowing that “she did not want to see him.” *Id.* Ex. 6, at 1. After M.B. gave water to Brown, “she turned into a snake.” *Id.* In a later parole interview, he recalled standing over M.B. with the “knife handle in his hand.” *Id.* Ex. 7, at 4 (capitalization omitted).

Brown recalled feeling like “he was ‘tripping’ at the time of the offense.” *Id.* Ex. 6, at 1. Brown could not specifically recall the acts of stabbing M.B. and murdering her four-year-old son, but he remembered “that he had blood all over him and he knew something was wrong.” *Id.* Brown told the Parole Board in 1991 that he thought “he committed the crimes, stabbed [M.B.] and killed her 5 y/o son.”⁸ *Id.* Ex. 7, at 4 (capitalization omitted). Brown discussed the circumstances of the crimes because “he now kn[ew] what drugs and alcohol can do to a person” and because he did not “want another 4 year old’s life taken in vain.” *Id.* Ex. 6, at 1.

C. BROWN CLAIMS ACTUAL INNOCENCE

In 2016, Brown filed the present petition seeking a writ of actual innocence. Brown asserts that he is “actually innocent” of the crime as opposed to not guilty due to insufficient evidence,⁹ Code § 19.2-327.3, and that recent DNA testing by a private laboratory conclusively

⁸ The child was actually four years old at the time of his murder. *See supra* at 4-5.

⁹ In the context of federal habeas corpus law, the United States Supreme Court has held:

The meaning of actual innocence . . . does not merely require a showing that a reasonable doubt exists in the light of the new evidence, but rather that no reasonable juror would have found the defendant guilty. It is not the district court’s independent judgment as to whether reasonable doubt exists that the standard addresses; rather the standard requires the district court to make a probabilistic determination about what reasonable, properly instructed jurors would do. Thus, a petitioner does not meet the threshold requirement unless he persuades the district court that, in light of the new evidence, no juror, acting reasonably, would have voted to find him guilty beyond a reasonable doubt.

exonerates him with “clear and convincing evidence” such that “no rational trier of fact would have found proof of guilt . . . beyond a reasonable doubt,” Code § 19.2-327.5.

Pursuant to an order by the trial court for post-conviction DNA testing under Code § 19.2-327.1, DFS performed DNA testing on various pieces of evidence from Brown’s trial beginning in 2008. After five supplemental orders, the testing concluded in 2015 when Bode conducted DNA testing on a vaginal smear slide. The final DNA test formed the basis of Brown’s petition for a writ of actual innocence.

1. DFS Testing

After the doctors at the hospital treated M.B., they “called the GYN Service to make an examination before she left the operating room.” Trial Tr. at 118. The Department of Pathology at the University of Virginia issued a report signed by Dr. A.E. Sproul who examined a vaginal smear slide taken from M.B., which was referred for examination by “Dr. Flanagan, GYN.”¹⁰ Pet. Ex. C, at 1. The report listed “10/2/69” as the date, listed “349442” as the number for the slide,¹¹ and stated that “[t]he specimen [was] received on a glass slide” and was “submitted for

Schlup v. Delo, 513 U.S. 298, 329 (1995), *superseded in part by statute*, Antiterrorism and Effective Death Penalty Act of 1996, Pub. L. No. 104-132, §§ 104, 106, 110 Stat. 1214 (codified as amended at 28 U.S.C. §§ 2244(b)(2)(B), 2254(e)(2)).

¹⁰ This 1969 report is the only evidence concerning the creation of the vaginal smear slide. The record does not indicate who collected the vaginal sample from M.B. or who placed the sample on the vaginal smear slide that Dr. Flanagan referred to UVA’s Department of Pathology.

¹¹ This same number was on the slide when it was located and tested in 2015. *See, e.g.*, Pet. Ex. G, at 1; MTD Ex. 10, at 2.

H&E staining.”¹² *Id.* Dr. Sproul’s only diagnosis stated: “Sperm present.” *Id.* Neither the slide nor the pathology report were entered into evidence at Brown’s trial, and neither Dr. Flanagan nor Dr. Sproul testified about the vaginal smear slide.

In 2015, the slide was located at a storage facility for UVA’s Department of Pathology. Upon Brown’s motion for post-conviction DNA testing, the trial court ordered DFS to perform a DNA analysis of the slide and M.B.’s nightgown and to compare them “with other DNA developed in this matter.” *Id.* Ex. D, at 1-2. DFS created a DNA profile for M.B. from DNA recovered from the nightgown but could not create a DNA profile from the vaginal smear slide. *See id.* Ex. E, at 3.

Notes from a DFS forensic scientist stated that the vaginal smear slide was fixed with an “intact” coverslip, but a microscopic examination of the slide revealed that it would be “too difficult to discern cell morphology” because of a “dry” or “cracked” coverslip. MTD Ex. 8, at 1. The “fixative on [the] edges” of the slide was “scraped away from coverslip,” and the “coverslip was removed intact.” *Id.* Then the forensic scientist scraped both the slide and the coverslip into a weigh boat and swabbed the scraped debris. *See id.* The scientist also swabbed the slide and coverslip with a second swab. *See id.* These swabs were combined and DNA extracted from them, separating the sperm fraction and non-sperm fraction. *See id.*

A portion of the sperm fraction was used to create a new slide to attempt to identify sperm cells, but none were found. *See id.* at 2; Pet. Ex. E, at 3. The sperm fraction yielded “[n]o

¹² Staining is a common forensic practice that makes transparent cells visible for microscopic examination, and the stain used on the vaginal smear slide in this case was a combination of hematoxylin and eosin, which stains cytoplasm pink. *See generally* Taber’s Cyclopedic Medical Dictionary 822, 2220-21 (Donald Venes et al. eds., 23d ed. 2017); Andrew H. Fischer et al., *Hematoxylin and Eosin Staining of Tissue and Cell Sections*, 3 Cold Spring Harbor Protocols, May 2008, at 1, 1. The record does not reflect who stained the slide for examination.

DNA typing results,” and the non-sperm fraction yielded “[a] DNA type of no value.” Pet. Ex. E, at 3. In a conversation with one of the attorneys working on Brown’s case, the forensic scientist conveyed that the “DNA type of no value from the non-sperm fraction” resulted in “one type at locus D5, but that it was not compared to the victim.” MTD Ex. 9, at 1. When asked by the attorney “if there was any sample remaining on the slide,” the forensic scientist answered “that it was possible” because “there could be residue left on the glass.” *Id.* Because “D5 is a small locus,” the attorney inquired about the use of MiniFiler testing.¹³ *Id.* The forensic scientist stated that DFS did not have “Mini[F]iler online,”¹⁴ but the “suitability of the testing could be discussed with the [Commonwealth] and [the] Technical Leader” of DFS. *Id.* DFS performed no further testing on the vaginal smear slide.

2. Bode Testing

A couple of months after DFS completed its DNA testing of the vaginal smear slide, Brown made a motion in the circuit court for further post-conviction DNA testing of the slide by Bode, and the Commonwealth made no objection to this request. “[I]n the interests of justice and for good cause shown,” the trial court ordered that “the vaginal smear slide and any extracts, scrapings, or other remnants therefrom” be packaged and sent to Bode for further DNA analysis. Pet. Ex. F, at 1. Bode examined the original vaginal smear slide and determined that it was

¹³ MiniFiler is a DNA testing kit that can be used for “highly degraded DNA” or “very low amounts of DNA” to amplify DNA for analysis. John M. Butler, *Advanced Topics in Forensic DNA Typing: Methodology* 295-99 (2012). In their various filings before this Court, both Brown and the Commonwealth refer to and rely on Professor Butler’s work, which has been called the “canonical text on forensic DNA typing,” *District Attorney’s Office for the Third Judicial Dist. v. Osborne*, 557 U.S. 52, 82 (2009) (Alito, J., concurring). Thus, we also reference Butler’s works on forensic DNA typing to further describe the testing used by DFS and Bode as well as the results obtained.

¹⁴ The record does not indicate whether MiniFiler testing was available at DFS in some other format.

“inconclusive for the presence of spermatozoa” because of “heavy pink staining/debris which prevented an accurate confirmation of spermatozoa.” MTD Ex. 12, at 2; *see also* Pet. Ex. G, at 1-2. The extracts that DFS obtained from the vaginal smear slide and coverslip were processed with a MiniFiler kit, but “[n]o DNA profiles were obtained.” Pet. Ex. G, at 1.

Bode then swabbed both the original vaginal smear slide and the new slide, which was created by DFS from a portion of the sperm fraction, and both of those swabs were combined and sent for differential extraction, which again separated any DNA from the sample into a sperm fraction and a non-sperm fraction. *See id.* at 2; MTD Ex. 12, at 2. Brown’s attorney elected to forego further staining of the sample to identify spermatozoa “during the extraction” because “the hospital saw the sperm already” in 1969. MTD Ex. 12, at 4-5. Before Brown’s attorney elected to forego this test, the Bode forensic scientist explained that the test “could potentially reduce the available DNA within the sample to obtain a male profile” but cautioned that without this test, Bode “c[ould not] say for sure that the profile is or is not from sperm.” *Id.*

After performing the differential extraction on the sample, Bode reported “No Result” for any amount of DNA in the sperm fraction and found it “negative for male DNA.” *Id.* at 3. Bode found the non-sperm fraction “inconclusive for male DNA” but quantified the amount of “both human and male DNA” to be less than .001 nanograms per microliter.¹⁵ *Id.* The forensic scientist explained that “[t]his essentially means that very little or no DNA was detected in the samples.” *Id.* Brown’s attorney was given three different options for testing the DNA but chose to use a Y-STR processing kit that analyzes “Short Tandem Repeat (STR) loci specific to the

¹⁵ The record provides no reason for Bode’s inconclusive determination for male DNA. Typically, “[i]f a report provides an ‘inconclusive’ finding, then it is appropriate to provide a reason why this conclusion was reached.” John M. Butler, *Advanced Topics in Forensic DNA Typing: Interpretation* 454 (2015).

male Y chromosome (also called Y-STRs)” at 23 different loci in the DNA sequence. Pet. Ex. G, at 1; *see also* MTD Ex. 12, at 3.¹⁶

Bode ran the Y-STR test twice, and in an affidavit, Bode’s forensic scientist stated that “[r]unning a sample twice is part of Bode’s normal processing flow and it was determined based on the testing results that running the sample a second time was appropriate.” Reply of Sherman Brown in Opp’n to Mot. to Dismiss Ex. A, at 2 [hereinafter Brown’s Reply]. The forensic scientist explained that, during the first run, she “used the maximum volume of sample extract allowed for the DNA amplification kit and did see peaks” of DNA detection, but those peaks “were all below Bode’s analytical threshold,”¹⁷ which prevented her from reporting any results. *Id.*

Because peaks were detected in the first run, however, the forensic scientist “decided to concentrate the DNA sample” in the second run such that “a greater quantity of DNA would be tested.” *Id.* She “reduce[d] the amount of liquid in the extract” to “allow[] more DNA to be included in the maximum allowed volume of liquid that is amplified.” *Id.* at 2-3; *see also* Butler, Methodology, *supra* note 13, at 50 (“The process of achieving a DNA concentration that fits the optimal window for analysis is called *normalization*. This involves diluting the sample down to the desired range or concentrating it by removing excess fluid.”). After the second run, the forensic scientist “was able to obtain results that satisfied both Bode’s peak height detection

¹⁶ Y-STR testing amplifies “male DNA components over female DNA, which may be in excess in biological samples recovered in sexual assault cases.” *Id.* at 134.

¹⁷ Bode’s forensic scientist explained that “[t]he analytical threshold is the minimum peak height that needs to be reached to confidently determine that the peak is a true allele.” Pet. Ex. J, at 1. Below the analytical threshold, “observed peaks cannot be reliably distinguished from instrument noise.” Butler, Interpretation, *supra* note 15, at 38 tbl.2.1. “[A] properly set analytical threshold . . . by definition means that any peaks observed below this threshold are not appropriate for further consideration as reliable peaks.” *Id.* at 41. No argument has been made that Bode improperly set its analytical threshold.

threshold and analytical threshold,” which allowed her to identify “true alleles”¹⁸ at three different DNA loci. Brown’s Reply Ex. A, at 3.

The results of the second run revealed that “[n]o Y-STR profile was obtained from the sperm fraction” of the sample tested by Bode and that “[a] partial Y-STR profile was obtained” from the non-sperm fraction of the sample at three DNA loci. Pet. Ex. G, at 1-2.¹⁹ “Due to the limited data obtained” from the non-sperm fraction, however, Bode explained that the “partial profile is only suitable for exclusion purposes.” *Id.* at 2. Brown was subsequently “excluded as [a] possible contributor[] of the partial Y-STR profile obtained from the [non-sperm] fraction” at one locus out of the three loci detected above Bode’s analytical threshold. *Id.* Ex. H, at 2-3; *see*

¹⁸ An “allele” is “[a]ny of two or more different genes containing specific inheritable characteristics that occupy corresponding loci on paired chromosomes,” and typically, “an individual has only two of them” at each DNA locus. Taber’s Cyclopedic Medical Dictionary, *supra* note 12, at 81.

¹⁹ Brown submitted an affidavit from Dr. Robin Cotton, who reviewed Bode’s test results at Brown’s request. Cotton noted that “degradation of DNA can take place over time,” and “[d]egradation causes breaks to occur in the DNA molecules,” which “accumulate over time.” Brown’s Reply Ex. B, at 4. This degradation “is observed as a loss of DNA data (peaks) in areas of the profile where longer DNA fragments are required for amplification of a locus.” *Id.* Further, “[w]ith increased age of a sample the length of DNA fragments present in the sample is reduced by degradation,” which “causes there to be less and less amounts of any specific intact DNA sequence.” *Id.* Cotton noted that a full Y-STR DNA profile was obtained from the four-year-old’s shirt, despite the fact that the DNA “exhibit[ed] signs of degradation similar to the partial Y STR profile from the vaginal smear slide” because the shirt contained “a significantly larger amount of DNA” compared to the vaginal smear slide that “contain[ed] less biological material.” *Id.*

Cotton also opined about the absence of sperm cells in the sperm fraction while a partial Y-STR profile was obtained from the non-sperm fraction. Cotton noted that the “[d]rying and dehydration of cells may cause sperm to be more fragile when they are subsequently re-hydrated,” even during the first phase of differential extraction, which lyses (or ruptures the cell membranes of) only the non-sperm cells to access their DNA. *Id.* at 4-6 (citing C.M. Hennekens et al., *The Effects of Differential Extraction Conditions on the Premature Lysis of Spermatozoa*, 58 J. Forensic Sci. 744-52 (2013)). Cotton stated that “[g]iven the age of the sample, my opinion is that the sperm cells *could* be sufficiently compromised to break open under these conditions,” and as a result, “male DNA from sperm cells *could* be present and detected in the [non-sperm] fraction.” *Id.* at 5 (emphases added).

also id. Ex. J, at 1. According to an affidavit submitted by Bode’s forensic scientist, Brown’s exclusion was also supported by three additional loci detected above Bode’s peak detection threshold²⁰ but below their analytical threshold. *See id.* Ex. J, at 2. This testing and the resulting certificate of analysis and affidavit submitted by Bode’s forensic scientist formed the basis for Brown’s petition for actual innocence filed before this Court.

In his petition, Brown requested a stay of the proceeding in order to pursue further testing that could exclude M.B.’s husband as a contributor to the partial Y-STR profile obtained from the non-sperm fraction, which this Court granted.²¹ Bode conducted further testing, and M.B.’s husband, who is now deceased, was also excluded as a possible contributor when full Y-STR DNA profiles obtained from both his living son and the deceased four-year-old son excluded both of them as possible contributors at one locus out of the three loci detected above the analytical threshold. *See* Suppl. Pet. Ex. 2, at 2-4; *id.* Ex. 3, at 1-2; Pet. Ex. J, at 2.²² The record does not reflect that DFS ever certified or verified any of Bode’s testing results, and nothing in the record suggests that either Brown’s attorney or Bode ever requested that DFS do so.

²⁰ Bode’s forensic scientist explained that a “peak detection threshold is the minimum peak height at which a peak can be designated from the baseline as a *possible* allele.” Pet. Ex. J, at 2 (emphasis added). Peaks detected “between the peak detection threshold and the analytical threshold may be used to further support an exclusion for single source profiles,” but “exclusions cannot be made on these peaks alone.” *Id.* Professor Butler, however, explains that “the primary purpose of a threshold is to exclude unreliable data from further consideration and base that further analysis only on reliable data.” Butler, Interpretation, *supra* note 15, at 36.

²¹ Because “sperm can survive several days in the vaginal cavity,” Butler, Interpretation, *supra* note 15, at 131, Brown sought to also exclude M.B.’s husband as a potential source of DNA.

²² Because the “Y chromosome is inherited paternally” and because the “Y markers tested in the Y-STR test are passed on from father to son,” the exclusion of the children of M.B.’s husband, who likely had identical Y-STR DNA profiles to their father, also satisfied Bode’s requirements to exclude their father as a contributor to the partial Y-STR profile obtained from the non-sperm fraction. Suppl. Pet. Ex. 3, at 2.

II.

As noted earlier, our authority to issue a writ of actual innocence derives exclusively from the 2002 amendment to the Constitution of Virginia and its express limitation on the use of that authority “in *such cases* and in *such manner* as may be provided by the General Assembly.” Va. Const. art. VI, § 1 (emphases added). *See generally* John Dinan, *The Virginia State Constitution* 164-65 (2d ed. 2014). Under the statute governing this case, Brown can only obtain a writ of actual innocence if we find by “clear and convincing evidence that [he] has proven all of the allegations contained in clauses (iv) through (viii) of subsection A of § 19.2-327.3”²³ and “that no rational trier of fact would have found proof of guilt . . . beyond a reasonable doubt,” Code § 19.2-327.5. Brown alone must shoulder the “burden of proof” on each of these elements. *Id.*

The Commonwealth has moved to dismiss Brown’s petition on two independent grounds: (i) Brown’s petition relies on DNA testing not performed or certified by DFS, as the statute requires; and (ii) in any event, the private DNA testing results do not provide clear-and-

²³ Code § 19.2-327.3(A) requires the petitioner to “allege categorically and with specificity, under oath,” *inter alia*:

(iv) that the evidence was not previously known or available to the petitioner or his trial attorney of record at the time the conviction or adjudication of delinquency became final in the circuit court, or if known, the reason that the evidence was not subject to the scientific testing set forth in the petition; (v) the date the test results under § 19.2-327.1 became known to the petitioner or any attorney of record; (vi) that the petitioner or his attorney of record has filed the petition within 60 days of obtaining the test results under § 19.2-327.1; (vii) the reason or reasons the evidence will prove that no rational trier of fact would have found proof of guilt or delinquency beyond a reasonable doubt

The General Assembly expressly limited the application of clause (viii) in Code § 19.2-327.3(A) to final convictions after June 30, 1996, which is inapplicable in this case. *See generally* 2001 Acts ch. 873; 2009 Acts. ch. 139.

convincing evidence — when placed in the context of the evidence presented by the Commonwealth at Brown’s 1970 trial and the post-trial evidence presented in the Commonwealth’s response to Brown’s petition — such that “no rational trier of fact would have found proof of guilt . . . beyond a reasonable doubt.” *Id.* We agree with both contentions.

A. THE STATUTORY NECESSITY FOR DFS TEST RESULTS

Among the allegations that Code § 19.2-327.5 requires Brown to prove by clear-and-convincing evidence are the factual assertions required by clauses (iv) through (viii) of Code § 19.2-327.3(A). Two of those clauses deal with the “test results under § 19.2-327.1.” Code § 19.2-327.3(A)(v)-(vi). Both clauses necessarily presuppose that the certified test results come from DFS. Several provisions in the testing statute, Code § 19.2-327.1, make this clear:

A. Notwithstanding any other provision of law or rule of court, any person convicted of a felony or any person who was adjudicated delinquent by a circuit court of an offense that would be a felony if committed by an adult may, by motion to the circuit court that entered the original conviction or the adjudication of delinquency, apply for a new scientific investigation of any human biological evidence related to the case that resulted in the felony conviction or adjudication of delinquency if [among other things] . . . (iv) *the testing requested involves a scientific method employed by the Department of Forensic Science*; and (v) the person convicted or adjudicated delinquent has not unreasonably delayed the filing of the petition after the evidence or the test for *the evidence became available at the Department of Forensic Science*.

. . . .

D. The court shall, after a hearing on the motion, set forth its findings specifically as to each of the items enumerated in subsections A and B and either (i) dismiss the motion for failure to comply with the requirements of this section or (ii) dismiss the motion for failure to state a claim upon which relief can be granted or (iii) *order that the testing be done by the Department of Forensic Science* based on a finding of clear and convincing evidence that the requirements of subsection A have been met.

E. The court shall order *the tests to be performed by the Department of Forensic Science* and prescribe in its order, *pursuant to standards and guidelines established by the Department*, the method of custody, transfer, and return of evidence submitted for scientific investigation sufficient to insure and protect the Commonwealth's interest in the integrity of the

evidence. The results of any such testing shall be furnished simultaneously to the court, the petitioner and his attorney of record and the attorney for the Commonwealth. *The Department of Forensic Science shall give testing priority* to cases in which a sentence of death has been imposed. The results of any tests performed and any hearings held pursuant to this section shall become a part of the record.

Code § 19.2-327.1(A), (D)-(E) (emphases added).

We “presume that the legislature chose, with care, the words it used when it enacted the relevant statute.” *Tvardek v. Powhatan Vill. Homeowners Ass’n*, 291 Va. 269, 277, 784 S.E.2d 280, 284 (2016) (citation omitted). “The act of choosing carefully some words necessarily implies others are omitted with equal care.” *Rickman v. Commonwealth*, 294 Va. 531, 540 n.3, 808 S.E.2d 395, 399 n.3 (2017) (citation omitted).²⁴

We have no authority to go outside the boundaries of the statutory scheme to grant a writ of actual innocence based on test results uncertified by DFS. The General Assembly has created and funded DFS to provide objective scientific analyses. *See generally* Code § 9.1-1101 (outlining the powers and duties of DFS); Virginia Department of Forensic Science, Preface, 6 VAC § 40 (describing DFS as “an internationally accredited laboratory system” that “is authorized to provide forensic laboratory services in criminal matters”). In doing so, the legislature has given DFS the role of expert gatekeeper with respect to DNA test results offered in support of actual innocence petitions. That decision belongs to the General Assembly, not the courts. As the United States Supreme Court has observed:

The availability of technologies not available at trial cannot mean that every criminal conviction, or even every criminal conviction involving biological evidence, is suddenly in doubt. The dilemma is how to harness DNA’s power to prove innocence without

²⁴ The General Assembly has authorized private laboratory testing in at least one other context. *See* Code § 18.2-268.7(B) (providing a procedure for the testing of blood samples by an independent laboratory retained by the accused).

unnecessarily overthrowing the established system of criminal justice. That task belongs primarily to the legislature.

District Attorney's Office for the Third Judicial Dist. v. Osborne, 557 U.S. 52, 62 (2009), quoted in 5 Ronald J. Bacigal, *Virginia Practice Series: Criminal Procedure* § 21:10, at 688 (2017-2018 ed.).

We acknowledge but disagree with Brown's argument that the law-of-the-case doctrine precludes the Commonwealth from "collaterally attacking" the circuit court orders authorizing the Bode testing on appeal. Answer of Sherman Brown at 1; *see also* Brown's Reply at 12-13; Oral Argument Audio at 3:57 to 5:38. "The law-of-the-case doctrine has no binding effect on a trial court prior to an appeal." *Robbins v. Robbins*, 48 Va. App. 466, 474, 632 S.E.2d 615, 619 (2006).²⁵ We do not sit as an appellate court reviewing the testing orders of the circuit court, and the question before us is not whether the circuit court should have entered orders authorizing the Bode testing instead of DFS testing.²⁶ The question is whether we, exercising our original jurisdiction, have statutory authority to consider these test results. The law-of-the-case doctrine has no bearing on this issue.

We also disagree with the premise, embedded in Brown's argument, that the Attorney General is somehow estopped from making his statutory argument because it constitutes an impermissible collateral attack on the circuit court's testing orders to which the Commonwealth's

²⁵ *See also* *Commonwealth v. Virginia Ass'n of Ctys. Grp. Self Ins. Risk Pool*, 292 Va. 133, 141 n.6, 787 S.E.2d 151, 154 n.6 (2016); Martin P. Burks, *Common Law and Statutory Pleading and Practice* § 431, at 850 (T. Munford Boyd ed., 4th ed. 1952) ("The decision of the appellate court, right or wrong, is final after the rehearing period has passed. . . . From this naturally follows the rule commonly called 'the law of the case.'").

²⁶ *See generally* 5 Bacigal, *supra*, § 21:10, at 688 (stating that the circuit court "shall order the tests to be performed by the Division of Forensic Science and prescribe in its order the method of custody, transfer, and return of evidence submitted for scientific investigation sufficient to ensure and protect the Commonwealth's interest in the integrity of the evidence").

Attorney had previously agreed. As we just explained, the Attorney General's position is not a collateral attack. He is not seeking to vacate the circuit court's testing order. He is seeking to enforce the terms of the actual-innocence and testing statutes, which preclude us from considering the private laboratory's test results produced in response to the order.

It is also irrelevant that the Attorney General and the Commonwealth's Attorney disagree on this issue. They are separate constitutional officers and are entitled to their separate opinions. *See Hackett v. Commonwealth*, 293 Va. 392, 398 n.2, 799 S.E.2d 501, 504 n.2 (2017); *In re: Commonwealth of Va. Dep't of Corr.*, 222 Va. 454, 465, 281 S.E.2d 857, 863 (1981). The Attorney General and the Commonwealth's Attorney each have distinct, although at times complementary, responsibilities. *See, e.g.*, Code § 2.2-511 (specifying the limited role of the Attorney General in criminal prosecutions); Code § 15.2-1627(B) (specifying that the duty of prosecuting felony warrants, indictments, or informations rests with the Commonwealth's Attorneys). The duty to represent the Commonwealth in petitions for writs of actual innocence rests exclusively with the Attorney General. *See* Code § 19.2-327.3(C) (writs based on biological evidence); Code § 19.2-327.10(C) (writs based on non-biological evidence).

Finally, Brown claims that our ruling would be inconsistent with prior actual innocence cases in which we have relied upon private laboratory results. We see this as an overstatement. It is true that DFS contracted with Bode to conduct testing on DNA evidence from eligible cases decided between 1973 and 1988 at the direction of the Governor in 2004 and 2005. *See* Press Release, Governor Mark Warner, Governor Warner Announces Two Men Exonerated with Assistance of DNA Testing Not Available at Trial — Results of Random Sample Review of Old Serology Files Prompt Full-Scale Review (Dec. 14, 2005). But in each case, DFS conducted its own independent review of the testing data and provided its own interpretation of the test results

as evidenced by DFS certificates of analysis. *See id.* Our recent actual innocence case, *In re: Watford*, 295 Va. 114, 809 S.E.2d 651 (2018), is an example of this very process as evidenced by the DFS certificate of analysis that interpreted Bode’s DNA testing in that case.

Moreover, in all prior cases in which we have issued writs of actual innocence, we have expressly relied on DFS certificates of analysis. *See In re: Harward*, Record No. 160353, slip op. at 1-2 (Va. Apr. 7, 2016) (unpublished); *In re: Diamond*, Record No. 121462, slip op. at 1 (Va. Mar. 8, 2013) (unpublished); *In re: Barbour*, Record No. 120372, slip op. at 1-2 (Va. May 24, 2012) (unpublished); *In re: Cunningham*, Record No. 100747, slip op. at 1 (Va. Apr. 12, 2011) (unpublished); *In re: Haynesworth*, Record No. 090942, slip op. at 1-2 (Va. Sept. 18, 2009) (unpublished).

In Brown’s case, DFS did not engage Bode as an independent contractor, did not review Bode’s test results, and did not issue any certificate of analysis confirming Bode’s test results. Because the actual-innocence statutes require us to base our determination upon certified DFS test results, we have no authority to issue a writ of actual innocence based upon the Bode test results proffered by Brown.

B. THE “NO RATIONAL TRIER OF FACT” STANDARD

Even if we were authorized to consider the private laboratory results, Brown would still have the burden of proving that the evidence submitted to us in this writ proceeding — *i.e.*, Bode’s DNA test results, the factual proffers in his petition, the post-trial evidence presented in the Commonwealth’s response, along with the evidence presented at the original trial — provide, in the aggregate, clear-and-convincing proof that “no rational trier of fact would have found

proof of guilt . . . beyond a reasonable doubt,” Code § 19.2-327.5. A few observations are necessary before we determine whether Brown can shoulder this burden of proof.²⁷

1.

“The term ‘clear and convincing evidence’ has been defined as ‘that measure or degree of proof which will produce in the mind of the trier of facts a firm belief or conviction as to the allegations sought to be established.’” *Judicial Inquiry & Review Comm’n of Va. v. Pomrenke*, 294 Va. 401, 409, 806 S.E.2d 749, 753 (2017) (citation omitted). This standard is considerably higher than a “mere preponderance,” *id.*, and has been fairly characterized as a “heavy burden,” *Commonwealth v. Allen*, 269 Va. 262, 275, 609 S.E.2d 4, 12 (2005); *United States v. Watson*, 793 F.3d 416, 420 (4th Cir. 2015). Such a standard cannot be met with evidence that leaves “competing inferences ‘equally probable.’” *Edmonds v. Edmonds*, 290 Va. 10, 22, 772 S.E.2d 898, 904 (2015) (citation omitted). Put another way, the persuasive quality of clear-and-convincing evidence must establish that “the thing to be proved is highly probable or reasonably certain.” Black’s Law Dictionary 674 (10th ed. 2014).

2.

As we recently recognized in *In re: Watford*, the General Assembly amended the actual-innocence statutes, effective July 1, 2013, by requiring petitioners to prove by clear-and-convincing evidence that “no rational trier of fact *would* have found proof of guilt beyond a reasonable doubt” instead of requiring them to prove that no rational trier of fact “could” have done so. 295 Va. at 121, 809 S.E.2d at 655 (emphasis in original) (citing 2013 Acts chs. 170,

²⁷ The burden of proof at all times remains with Brown, *see* Code § 19.2-327.5, because “[o]nce a defendant has been afforded a fair trial and convicted of the offense for which he was charged, the presumption of innocence disappears,” *Osborne*, 557 U.S. at 69 (alteration in original) (quoting *Herrera*, 506 U.S. at 399).

180 (codified as amended at Code §§ 19.2-327.3(A)(vii), 19.2-327.5, 19.2-327.11(A)(vii), 19.2-327.13)).

In this context, the substitution of “would” for “could” changes the decision-making paradigm from a threshold sufficiency analysis to a more predictive analysis. *See id.* at 121-27, 809 S.E.2d at 655-58; *cf. House v. Bell*, 547 U.S. 518, 538-40 (2006) (contrasting the “would have” standard in an analogous federal habeas context involving the “actual innocence” exception to procedural default with the “could have” standard for sufficiency of the evidence); *Schlup v. Delo*, 513 U.S. 298, 330 (1995) (same), *superseded in part by statute*, Antiterrorism and Effective Death Penalty Act of 1996, Pub. L. No. 104-132, §§ 104, 106, 110 Stat. 1214 (codified as amended at 28 U.S.C. §§ 2244(b)(2)(B), 2254(e)(2)). Under the former statute, it was unnecessary to consider the likelihood of a conviction if the new evidentiary record rose a single increment above the bare sufficiency threshold. Now, we must ask whether clear-and-convincing evidence proves that *no* rational factfinder *would* find the petitioner guilty.

To calibrate the standard that “no rational trier of fact would have found proof of guilt,” we must factor in the overarching burden of proof — clear-and-convincing evidence — at the proper level of probability. Code § 19.2-327.5 (requiring a “finding of clear and convincing evidence” that the petitioner has proven the “allegations” in clause (vii), among others); Code § 19.2-327.3(A)(vii) (requiring the allegation, under oath, “that no rational trier of fact would have found proof of guilt”). As noted earlier, clear and convincing is higher than preponderance but lower than absolute certitude. *See Black’s Law Dictionary, supra*, at 674. Lying within the spectrum between them, “clear and convincing evidence” must be convincing enough to render the assertion to be proved “*highly probable* or *reasonably certain*.” *Id.* (emphases added).

“More likely than not” proof falls short of that standard, *see In re: Watford*, 295 Va. at 124 n.12, 809 S.E.2d at 657 n.12 (citation omitted), as does, all the more, a mere evidentiary equipoise.

Equally important, we must apply the statutory standard not simply to fragments of the evidence but to all of the evidence in the aggregate — including the testimony and exhibits at the original trial, any previous records from the original case, the facts proffered by the petitioner, the factual proffers in the Commonwealth’s response,²⁸ any records of pertinent evidentiary hearings, and any findings certified to us by a circuit court pursuant to a remand order. *See id.* at 125, 809 S.E.2d at 657-58 (citing Code § 19.2-327.5). The actual-innocence statutes require us to take all of the factual information, which is reviewed in its totality, and to test it under the clear-and-convincing standard. We do not limit our analysis to the arguments raised by the parties in the original trial. “In other words, the statute effectively requires us to draw our conclusion from a hypothetical new trial in which a rational factfinder hears all of the evidence in the aggregate” *Id.* at 125, 809 S.E.2d at 657. This admixture of old and new evidence necessarily means that the petitioner and the Commonwealth are free to assert their respective theories of innocence or guilt that correspond to their competing versions of the aggregate fact pattern.

²⁸ The Attorney General may “proffer” in response to an actual innocence petition “any evidence pertaining to the guilt . . . of the petitioner that is not included in the record of the case, including evidence that was suppressed at trial.” Code § 19.2-327.3(C); Rule 5:7B(f)(2) (same); *see* 5 Bacigal, *supra*, § 21:10, at 690 (stating that the Attorney General’s “response may contain a proffer of any evidence pertaining to the guilt of the defendant that is not included in the record of the case, including evidence that was suppressed at trial”); John L. Costello & Craig S. Lerner, *Virginia Criminal Law and Procedure* § 62.13[2], at 1090 (4th ed. 2008 & Supp. 2017) (noting that the Attorney General “may add to the record any additional evidence bearing on the issue of guilt, including evidence suppressed at trial”); *see also Schlup*, 513 U.S. at 328 (holding that a federal habeas court reviewing an actual innocence claim “must make its determination concerning the petitioner’s innocence ‘in light of all the evidence, including that alleged to have been illegally admitted (but with due regard to any unreliability of it) and evidence tenably claimed to have been wrongly excluded or to have become available only after the trial’”).

3.

Applying these principles, we find that Brown has failed to prove by clear-and-convincing evidence that no rational factfinder would find him guilty of the murder of M.B.'s four-year-old son in light of the totality of the evidence now before us. Several reasons account for this failure of proof.

To begin with, Brown's theory of exoneration based upon Bode's DNA test results rests on a flawed assumption. Brown sees this as a rape and murder case. Because his DNA was not found on M.B.'s vaginal sample, Brown syllogizes that he cannot be the rapist, and thus, he cannot be the murderer of M.B.'s four-year-old son. Brown's syllogism falls apart on several levels.

This case is not and never was a rape case. Brown was never charged with rape, and M.B. never testified that she was raped. Nor did she testify to vaginal pain, injury, or trauma or offer any other physical evidence of nonconsensual intercourse. Neither the Commonwealth nor Brown mentioned the subject of rape in their opening statements or during the questioning of any of the witnesses. The subject of rape first appeared at trial during closing arguments when the Commonwealth told the jury that whether "[Brown] tried to rape [her] or did rape her[,] *we will never know.*" Trial Tr. at 402 (emphasis added). Brown's theory of actual innocence, to the extent that Bode's DNA test results have any weight at all, only proves, *at best*, that Brown did not vaginally rape M.B. Perhaps he did not do so. But that possibility does not prove that Brown did not bludgeon and stab M.B. almost to death and murder her child — either because she dared to refuse his sexual advances and he exploded his vengeance upon her and her child or because he violently, but unsuccessfully, attempted to rape M.B. and he murdered her child to eliminate the only witness to the crime.

Also relevant, Brown's statements to the Parole Board undermine his present protestations of innocence. In a 1991 statement to the Parole Board, Brown confessed, "I accept full responsibility for my crime and I feel sorry for the victim, but I can't undo what's been done." MTD Ex. 7, at 12; *see also id.* Ex. 5, at 1. Brown first offered a detailed account of how the crimes occurred in a 1984 statement to the Parole Board. After a bout of "drinking" alcohol and "taking some LSD," Brown approached M.B. at her home knowing that "she did not want to see him." *Id.* Ex. 6, at 1. Brown could not recall the specific acts of stabbing M.B. and murdering her four-year-old son, but he did remember that M.B. "turned into a snake" after she gave him water to drink. *Id.* Brown also remembered "that he had blood all over him," *id.*, and he later stated in a 1991 parole interview that he stood over M.B. holding only a "knife handle," the blade itself still lodged in her chest, *id.* Ex. 7, at 4 (capitalization omitted). In short, Brown told the Parole Board that he believed "he committed the crimes, stabbed [M.B.] and killed her 5 y/o son."²⁹ *Id.* (capitalization omitted). If we were to take Brown at his word in his 1984 parole interview, he openly discussed the crimes with the parole officer on multiple occasions because "he now kn[ew] what drugs and alcohol can do to a person" and because he did not "want another 4 year old's life taken in vain." *Id.* Ex. 6, at 1.

In the present writ proceeding, Brown has no explanation for his numerous confessions in statements submitted to the Parole Board other than that he lied to the Parole Board in order to secure his freedom.³⁰ A rational factfinder, Brown now argues, would have sympathy for his self-interested prevarication and trustingly accept his present protestations of innocence. We think this supposition highly unlikely. It is far more probable that a typical jury would find that

²⁹ *See supra* note 8.

³⁰ *See* Brown's Reply at 11-12; Oral Argument Audio at 14:18 to 14:40.

Brown's recantation of his confessions, particularly given his professed reason for the confessions, diminishes his newly articulated claim of actual innocence.

Nor do we believe that DNA test results from the Bode laboratory (even if they were statutorily cognizable) erect a firewall against the overwhelming circumstantial evidence of Brown's guilt and his subsequent detailed confessions. The DNA test results do not have the probative weight Brown sees in them.³¹ They were based on a low amount of DNA (.001 nanograms per microliter), which correspondingly affects their probative weight. "It is well known that low amounts of DNA template (e.g. 50 [picograms]) do not behave as consistently as optimal DNA target quantities (e.g. 1 [nanogram]) and that additional measures which account for potential allele drop-out are necessary." Butler, Interpretation, *supra* note 15, at 166; *cf. Osborne*, 557 U.S. at 81 (Alito, J., concurring) (listing factors negatively affecting the probative value of DNA samples, including "minimal or insufficient quantity, especially as investigators push DNA testing to its limits and seek profiles from a few cells," which makes "DNA testing in the forensic context far more subjective than simply reporting test results").

Bode only tested .001 nanograms of DNA obtained from the sample, *see* MTD Ex. 12, at 3, which is equivalent to 1 picogram and well below the typical optimal target quantity suggested by Professor Butler. *See* Butler, Interpretation, *supra* note 15, at 166; Taber's Cyclopedic Medical Dictionary, *supra* note 12, at 1592, 1826 (defining "nanogram" as "[o]ne billionth . . . of

³¹ We disagree with Brown's bifurcated framework for our review of actual innocence petitions. Brown's framework sees the DNA evidence as the only piece of evidence necessary to satisfy the clear-and-convincing standard required by statute, and the other evidence is reviewed under a standard similar to harmless error. *See generally* Pet. at 18-52. As we have previously stated, the actual-innocence statute "requires us to draw our conclusion from a hypothetical new trial in which a rational factfinder hears all of the evidence in the aggregate," or in other words, "only after the *totality of the evidence* is considered . . . can we determine whether to grant or deny the writ." *In re: Watford*, 295 Va. at 125, 809 S.E.2d at 657-58 (emphasis added); *see also* Code § 19.2-327.5.

a gram” and “picogram” as “1 trillionth of a gram”). Furthermore, Bode acknowledged that they “c[ould not] say for sure that the profile is or is not from sperm” due to Brown’s election to forego testing to identify spermatozoa before running the Y-STR test. MTD Ex. 12, at 4-5.

Risks of contamination are also possible with low amounts of DNA and sensitive DNA testing. “Increased sensitivity with newer STR kits means that contamination risks are real,” Butler, Interpretation, *supra* note 15, at 173, and “application of low level DNA results should be approached with caution due to the possibilities of allele drop-out, allele drop-in, and increased risks of collection-based and laboratory-based contamination,”³² Butler, Methodology, *supra* note 13, at 321-22. *See also Osborne*, 557 U.S. at 82 (Alito, J., concurring) (noting that “the extraction process is probably where the DNA sample is more susceptible to contamination in the laboratory than at any other time in the forensic DNA analysis process” (alteration omitted) (quoting John Butler, *Forensic DNA Typing* 42 (2d ed. 2005))).

Professor Butler notes that “many laboratories are seeing an increasing number of poor quality/quantity samples being submitted” because of the “success of DNA testing and its value to the criminal justice system.” Butler, Interpretation, *supra* note 15, at 175. Although “the ability to recover information from low-level DNA samples has increased as the sensitivity of DNA testing methods has improved,” this “[s]ensitivity is in many ways a two-edge sword — although more information can be recovered, interpretation becomes more challenging and time-consuming.” *Id.* “Contamination and potential secondary or tertiary transfer becomes a more significant issue when working to recover low-level DNA,” and “[d]epending on the case

³² “Allele drop-out” occurs when the testing process “fails to amplify and thus to not fully represent all of the alleles present in a DNA sample,” and “allele drop-in” is caused by “contamination” during “highly sensitive detection methods that can be used to try to recover more information from low-level DNA samples.” Butler, Interpretation, *supra* note 15, at 333.

context, recovering DNA information from the equivalent of a few cells may not be considered probative.” *Id.*; see also *Osborne*, 557 U.S. at 82 (Alito, J., concurring) (recognizing that “modern DNA testing technology is so powerful that it actually increases the risks associated with mishandling evidence”). These well-recognized risks should be factored into any court’s consideration of test results obtained from low amounts of DNA.

Further diminishing the weight of the test results is the weak chain of custody of the vaginal smear slide from its creation in 1969 until its discovery by Brown and its testing by DFS and Bode in 2015. The “basic rule for admitting [real] evidence is that the burden is upon the party offering the evidence to show with reasonable certainty that there has been no alteration or substitution of it,” and “*reasonable certainty* is not met when some vital link in the chain of possession is not accounted for, because then it is as likely as not that the evidence analyzed was not the evidence originally received.” *Robinson v. Commonwealth*, 212 Va. 136, 138, 183 S.E.2d 179, 180 (1971) (emphasis in original) (citation omitted). Establishing a chain of possession demonstrates that the evidence presented is “in the same condition when analyzed as [it was] when taken from the victim.” *Id.*

The burden is on the proponent of the evidence, when scientific analysis of a sample is offered, “to establish each vital link in the chain of custody by showing the possession and handling of the evidence from when it is obtained to its presentation.” *Herndon v. Commonwealth*, 280 Va. 138, 143, 694 S.E.2d 618, 620 (2010). The determination of whether a proponent has established a proper chain of custody for evidence is in the sound discretion of the court determining the admissibility of the evidence. See *Essex v. Commonwealth*, 228 Va. 273, 285, 322 S.E.2d 216, 223 (1984). But “[w]here the possibility of contamination is mere

speculation, the court should admit the evidence, and let any remaining doubt go to the weight of the evidence.” *Friend & Sinclair, supra*, § 16-7[b], at 1133.

Brown, as the proponent of the DNA evidence at question in this case, has only identified who referred the vaginal smear slide to UVA’s Department of Pathology for examination on October 2, 1969 (the day after M.B. was treated), who examined the slide at the Department of Pathology and issued an initial report, and who located the slide nearly 47 years later in a UVA storage facility. Brown has not identified who initially prepared the slide, who stained the slide for examination, or who handled the slide after it had been examined by the Department of Pathology. Brown also did not establish the conditions under which the slide was prepared, stained, or initially stored. These gaps in the chain of custody, including one spanning nearly 47 years, may not necessarily render the ultimate test results inadmissible, but they surely affect their probative value.

III.

In sum, we dismiss Brown’s petition for two independent reasons.

First, the governing actual-innocence and testing statutes limit our review of allegedly exculpatory biological evidence to test results certified by DFS. Because DFS has not certified the private laboratory’s test results proffered by Brown, Bode’s test results cannot be a basis for granting his petition for a writ of actual innocence.

Second, even if we were statutorily authorized to consider private laboratory test results, Brown has not shouldered the burden of proving that the evidence submitted to us in this writ proceeding — DNA test results from the Bode laboratory, the factual proffers in Brown’s petition, the post-trial evidence presented in the Commonwealth’s response, along with the evidence presented at the original trial — provides, in the aggregate, clear-and-convincing proof

that “no rational trier of fact would have found proof of guilt . . . beyond a reasonable doubt.” Code § 19.2-327.5. As the United States Supreme Court has observed, “DNA testing alone does not always resolve a case. Where there is enough other incriminating evidence and an explanation for the DNA result, science alone cannot prove a prisoner innocent.” *Osborne*, 557 U.S. at 62 (majority opinion).

Petition dismissed.