

PUBLISHED

UNITED STATES COURT OF APPEALS
FOR THE FOURTH CIRCUIT

No. 22-4642

UNITED STATES OF AMERICA,

Plaintiff – Appellee,

v.

RAYMOND DUGAN,

Defendant – Appellant.

Appeal from the United States District Court for the Southern District of West Virginia, at Charleston. Joseph R. Goodwin, District Judge. (2:21-cr-00127-1)

Argued: December 11, 2024

Decided: May 1, 2025

Before NIEMEYER, KING, and BENJAMIN, Circuit Judges.

Affirmed by published opinion. Judge King wrote the opinion, in which Judge Niemeyer and Judge Benjamin joined.

ARGUED: Shawn Angus Morgan, STEPTOE & JOHNSON PLLC, Bridgeport, West Virginia, for Appellant. Holly J. Wilson, OFFICE OF THE UNITED STATES ATTORNEY, Charleston, West Virginia, for Appellee. **ON BRIEF:** William S. Thompson, United States Attorney, OFFICE OF THE UNITED STATES ATTORNEY, Charleston, West Virginia, for Appellee.

KING, Circuit Judge:

Defendant Raymond Dugan pursues this appeal from his conviction and sentence in the Southern District of West Virginia on a child pornography charge. He pursues three contentions of error. First, Dugan maintains that his motion to compel discovery with respect to a foreign law enforcement agency's related investigation was erroneously denied. Second, he argues that the district court erred in rejecting his motion to suppress evidence seized pursuant to a search warrant issued for his residence. Finally, Dugan challenges a portion of the court's restitution order that awarded restitution to five child female victims. Following a jury trial in Charleston in July 2021, Dugan was convicted of the single offense of accessing with intent to view child pornography, in violation of 18 U.S.C. §§ 2252A(a)(5)(B) and 2252A(b)(2). The district court sentenced Dugan to 54 months' imprisonment followed by five years of supervised release, plus an aggregate sum of \$22,000 in restitution. As explained herein, we are satisfied that the court did not err in its challenged rulings and reject each of Dugan's appellate contentions. We therefore affirm his conviction and sentence.

I.

In August 2019, a foreign agency known to the FBI, and with a history of providing reliable and accurate information, informed the FBI that, on May 25, 2019, a specific Internet Protocol address (the "IP address") had accessed a website on the so-called "dark web" that was known to share child sexual abuse and exploitation material (sometimes called "CSAM"). That website was identified to the FBI by the foreign agency as the

“TARGET WEBSITE.” *See* J.A. 580–81.¹ The FBI referred the foreign agency’s tip about child sexual abuse and exploitation material to the Department of Homeland Security, and one of its Agents named Fleener primarily handled the investigation. In November 2019, Agent Fleener tracked the IP address provided by the foreign agency to defendant Dugan’s home in Logan, West Virginia, where Dugan lived with his wife and adult son.

A.

On June 8, 2020, based on the foreign agency’s tip and his own investigation, Agent Fleener applied for a search warrant for Dugan’s residence. We will draw from and describe the 52-page affidavit of Agent Fleener in some detail.

1.

In his affidavit supporting the search warrant application, Agent Fleener described the TARGET WEBSITE as a known “dark web” site that facilitates the sharing of child sexual abuse and exploitation material. Users were required to create an account with a username and password in order to access the TARGET WEBSITE. A key requirement for such a registration was that a new user had to post 50 to 100 megabytes of “indecent material of children” as their first post. *See* J.A. 578. A failure to satisfy that requirement would result in the account’s deletion. Fleener’s affidavit outlined specific posts made on the TARGET WEBSITE, detailing the nature of the material shared.

¹ Our citations herein to “J.A. ____” refer to the Joint Appendix filed herein by the parties.

The Fleener affidavit emphasized that the TARGET WEBSITE was not accessible by way of the traditional internet; that is, a user had to install what is called TOR software and navigate to a 16-or-56-character web address to reach it.² The TARGET WEBSITE is not indexed by standard search engines like Google and is often listed on directory sites advertising hidden services that often relate to the sexual exploitation of children. Users seeking access to CSAM rely on these directory sites — which also operate on the TOR network — to locate web addresses for hidden services. The directory sites often include forums, chat platforms, image galleries, and file-hosting services that facilitate the exploitation of children. During its operation, the TARGET WEBSITE was listed on one or more of these directory sites, which are dedicated to promoting and providing access to such harmful and illegal content.

Drawing on his training and experience, Agent Fleener explained that it is highly unusual for a registered user to access such websites, like the TARGET WEBSITE, and not return to them, suggesting continuous and ongoing engagement with such sites. He also stated that:

because accessing the TARGET WEBSITE required numerous affirmative steps by the user — to include downloading TOR software, accessing the

² The so-called TOR network (short for “The Onion Router”) is a system that allows a user to browse the internet anonymously. The TOR network apparently works by routing internet traffic through a series of volunteer-operated servers, known as “nodes.” The nodes encrypt and redirect data multiple times, creating layers of security, much like the layers of an onion. The foregoing procedure makes it difficult to trace the origin of the data or determine a user’s location. Although TOR is often associated with privacy and is used by individuals seeking to protect their anonymity, it is also sometimes used for accessing websites that are not indexed by regular search engines, known as the “dark web.”

TOR network, finding the web address for TARGET WEBSITE, and then connecting to TARGET WEBSITE via TOR — it is extremely unlikely that any user could simply stumble upon TARGET WEBSITE without understanding its purpose and content.

See J.A. 584.

Agent Fleener’s affidavit explained that all TOR hidden websites, such as the TARGET WEBSITE, are globally accessible and can be located anywhere in the world. Due to the anonymity provided by the TOR network, determining the physical location of the website and its users is often challenging at the outset of a criminal investigation. As a result, law enforcement agencies often collaborate internationally to address such crimes, sharing information in compliance with the laws of several countries.

The foreign agency, a national law enforcement agency of a friendly country with established rules of law, had shared the information underlying the reliable “tip” with U.S. law enforcement, emphasizing that this investigation had been conducted independently and lawfully within its own country, in accordance with its national laws. The foreign agency clarified that it had not accessed, searched, or seized any data from any computer in the United States to obtain the IP address information, and that law enforcement in this country had not participated in the investigation that led to identifying the IP address. The longstanding history of cooperation between U.S. law enforcement and international law enforcement agencies, particularly in investigating crimes against children, led to the FBI’s involvement in this prosecution, based on the reliable tip provided to the FBI by the foreign agency.

2.

Based on the foregoing, Agent Fleener advised the Magistrate Judge that there was probable cause to suspect violations of federal laws against accessing with intent to view child pornography, *see* 18 U.S.C. § 2252A, and that evidence of the suspected criminal activity would be found at Dugan's residence. The Magistrate Judge agreed and, on June 8, 2020, issued a search warrant for Dugan's residence in Logan County, and for the seizure of computers, digital devices, storage media, and related evidence.

On June 11, 2020, agents of the Department of Homeland Security and the West Virginia State Police executed the search warrant at Dugan's residence. While executing the warrant, Agent Fleener interviewed Dugan. Dugan admitted having used the TOR network to search for and visit multiple child pornography sites on the "dark web," and acknowledged that he was curious about child pornography. A forensic analysis made by a West Virginia police laboratory of a hard drive seized from Dugan's "home office" during the execution of the search warrant revealed — and resulted in the seizure of — 1237 images of child pornography contained on the hard drive and 1543 TOR network websites visited.

B.

On July 29, 2021, the federal grand jury in Charleston indicted Dugan on a single count of accessing with intent to view child pornography, in violation of 18 U.S.C. §§ 2252A(a)(5)(B) and 2252A(b)(2). On April 11, 2022, Dugan filed two pretrial motions. First, he sought to compel discovery that related to the foreign agency's investigation. Second, he requested that the district court suppress the evidence seized during the

execution of the search warrant for his residence. The parties promptly briefed the motions, and the district court conducted a hearing on April 29, 2022.

During the hearing, the district court heard testimony from Agent Fleener and the arguments of counsel. After considering the motions, the court denied both motions from the bench. On the motion to compel, the court ruled that Dugan's arguments were unpersuasive and lacked evidentiary support. The court then also denied Dugan's motion to suppress, concluding that Fleener's affidavit had provided sufficient probable cause, and that it was predicated on information from a reliable informant. The court also ruled that, even if probable cause was somehow lacking, the officers executing the warrant had acted in good faith.

C.

On June 1, 2022, the grand jury returned a single-count superseding indictment, again charging Dugan with knowingly accessing with intent to view child pornography, in violation of 18 U.S.C. § 2252A(a)(5)(B) and 2252A(b)(2).³ A jury trial was thereafter

³ Section 2252A(a)(5)(B) of Title 18 provides, in relevant part, that:

Any person who . . . knowingly accesses with intent to view, any book, magazine, periodical, film, videotape, computer disk, or any other material that contains an image of child pornography . . . shall be punished as provided in subsection (b).

18 U.S.C. § 2252A(a)(5)(B). Section 2252A(b)(2) of Title 18 sets forth the applicable penalties and provides, in relevant part, that:

Whoever violates . . . subsection (a)(5) shall be . . . imprisoned not more than 10 years

18 U.S.C. § 2252A(b)(2).

conducted on the superseding indictment in Charleston on August 2, 2022, and the jury returned a guilty verdict that very day.

On October 27, 2022, the court sentenced Dugan to 54 months in prison, followed by five years of supervised release. The court did not, however, resolve the issues of restitution at the sentencing hearing. Dugan noticed his timely appeal on November 9, 2022. On February 17, 2023, our Court remanded the matter to the district court for the limited purpose of resolving issues of restitution.

A hearing on restitution was held by the district court on July 17, 2023, to determine whether Dugan owed restitution to the child female victims. The court used pseudonyms for the names of the known child pornography victims who had been portrayed in illegal images found in Dugan's possession. As a result, on July 18, 2023, the court ordered Dugan to make restitution as follows to his young female victims: (1) \$7,000 to Jenny; (2) \$4,000 to Patty; (3) \$3,000 to Maureen; (4) \$5,000 to April; and (5) \$3,000 to Moca. The total restitution assessment was thus \$22,000. The matter thereafter returned to our Court, which secured appellate briefs and conducted an oral argument. We now resolve the issues presented.

II.

In the absence of factual findings, we review de novo a district court's denial of a motion to compel, brought under *Brady v. Maryland*, 373 U.S. 83 (1963). See *United States v. Caro*, 597 F.3d 608, 616 (4th Cir. 2010). And we review for abuse of discretion

a district court's denial of a motion to compel under Rule 16(a)(1)(E) of the Federal Rules of Criminal Procedure. *Id.*

In assessing the denial of a motion to suppress, we review a district court's legal conclusions de novo and its factual findings for clear error. *See United States v. Sanders*, 107 F.4th 234, 250 (4th Cir. 2024) (citing *United States v. Kolsuz*, 890 F.3d 133, 141–42 (4th Cir. 2018)). And in assessing a probable cause determination by a magistrate judge, we apply “a deferential and pragmatic standard to determine whether the judge ‘had a substantial basis for concluding that a search would uncover evidence of wrongdoing.’” *See United States v. Bosyk*, 933 F.3d 319, 325 (4th Cir. 2019) (quoting *Illinois v. Gates*, 462 U.S. 213, 236 (1983)). In making this determination, we consider “only the facts presented in the warrant application.” *Id.* (citing *United States v. Lyles*, 910 F.3d 787, 791 (4th Cir. 2018)). And “we view the evidence in the light most favorable to the prevailing party below.” *See United States v. Jones*, 356 F.3d 529, 533 (4th Cir. 2004).

Finally, we review a restitution order entered by a sentencing judge for abuse of discretion. *See United States v. Arce*, 49 F.4th 382, 396 (4th Cir. 2022). And “a district court abuses its discretion when it acts arbitrarily or irrationally, fails to consider judicially recognized factors constraining its exercise of discretion, relies on erroneous factual or legal premises, or commits an error of law.” *United States v. Delfino*, 510 F.3d 468, 470 (4th Cir. 2007).

III.

Again, Dugan's appellate contentions are threefold. First, he contends that the district court erred in denying his motion to compel discovery of the foreign agency's investigation, and thus the source of the FBI's tip. Second, he contends that the court erred in denying his motion to suppress the seized evidence, asserting that the search warrant was issued in the absence of probable cause. Third, he contends that the court erred in ordering him to pay excessive and illegal restitution sums to three of his five minor female victims. We will address and resolve each of those contentions in turn.

A.

First, we will examine the district court's denial of Dugan's motion to compel, pursued under *Brady v. Maryland* and Rule 16(a)(1)(E) of the Criminal Rules. Dugan contends that the court erred in denying his motion to compel because the discovery he was seeking was material to his motion to suppress, in that it was information about the foreign agency's investigative techniques and its cooperation with the FBI. Dugan asserts that the requested discovery was crucial to his motion to suppress for two reasons. First, he maintains that his discovery of information relating to agreements and cooperation between the FBI and the foreign agency would have permitted him to show that the foreign agency was acting in a joint venture with the FBI, rendering the Fourth Amendment applicable to the foreign agency itself. Second, Dugan contends that his discovery of investigatory techniques used to obtain Dugan's IP address was also material because it would show that

the foreign agency had conducted a warrantless search of his computer, in violation of the Fourth Amendment.

1.

We begin by reviewing the district court’s denial of Dugan’s motion to compel discovery under *Brady*. In its *Brady* decision in 1963, the Supreme Court announced that the Due Process Clause requires the government to disclose “evidence favorable to an accused upon request . . . where the evidence is material either to guilt or to punishment.” *See* 373 U.S. at 87. As a result, a *Brady* violation has three elements: “the evidence was (1) favorable to the accused, (2) suppressed by the government, and (3) material to the verdict at trial.” *See Nicolas v. Atty. Gen. of Maryland*, 820 F.3d 124, 129 (4th Cir. 2016) (citing *Monroe v. Angelone*, 323 F.3d 286, 299 (4th Cir. 2003)). “Both information that undermines the prosecution’s case and information that supports the defendant’s case constitute *Brady* material that must be disclosed.” *Id.*

Assuming there was information regarding the foreign agency’s investigation that was favorable to Dugan, the government could violate *Brady* only if such information was also material to the outcome of the trial. *See Wolfe v. Clarke*, 691 F.3d 410, 424 (4th Cir. 2012). Under *Brady*, materiality “is not a sufficiency of the evidence test,” and a defendant “need not demonstrate that after discounting the inculpatory evidence in light of the undisclosed evidence, there would not have been enough left to convict.” *See Kyles v. Whitley*, 514 U.S. 419, 434–35 (1995). Even so, favorable evidence is only material if a defendant can demonstrate “there is a reasonable probability that, had the evidence been disclosed to the defense, the result of the proceeding would have been different.” *See*

United States v. Caro, 597 F.3d 608, 619 (quoting *United States v. Bagley*, 473 U.S. 667, 682 (1985)).

As the Supreme Court made clear, “[t]he mere possibility that an item of undisclosed information might have helped the defense, or might have affected the outcome of the trial, does not establish ‘materiality’ in the constitutional sense.” *See United States v. Agurs*, 427 U.S. 97, 109–10 (1976). Put succinctly, “*Brady* requests cannot be used as discovery devices.” *See Caro*, 597 F.3d at 619. And the Court further observed, “[t]here is no general constitutional right to discovery in a criminal case, and *Brady* did not create one.” *See Weatherford v. Bursey*, 429 U.S. 545, 559 (1977).

Dugan’s assertion that the foreign agency acted in a joint venture with the FBI has no evidentiary support. It rests primarily on speculative conclusions drawn by his counsel, including a generalized “understanding of how the TOR networks operate.” *See* J.A. 49. Based on such speculation, Dugan alleged that the foreign agency must have conducted an unlawful search of his personal computer, in violation of the Fourth Amendment. He further speculates that the foreign agency was acting as an agent of the FBI. And that assertion is not based on expert analysis or any other evidence, but rather on his counsel’s “independent investigation and . . . reading” of past international sting operations. *See* J.A. 43, 64. Notably, Dugan’s lawyer conceded to the district court that he had no evidence demonstrating that the only way to get Dugan’s IP address was by unlawful means. And Dugan acknowledged that he had shared his IP address with the first relay computer in the TOR network, and that his IP address could be lawfully retrieved from that first relay.

Although Dugan relied on Agent Fleener’s reference in his affidavit to general cooperation between the FBI and foreign governments in similar investigations, such cooperation — standing alone — does not establish an agency relationship. *See United States v. Abu Ali*, 528 F.3d 210, 229 (4th Cir. 2008) (explaining “active” or “substantial” participation is necessary for “joint venture”). Fleener’s affidavit states that the foreign agency obtained Dugan’s IP address through an “independent investigation,” and explains that it had not “interfered with, accessed, searched or seized any data from any computer in the United States.” *See* J.A. 581–82. At the motions hearing, Agent Fleener testified that the foreign agency did not disclose the details of its investigation to the FBI. He also confirmed that the FBI had no additional information regarding how Dugan’s IP address had been obtained, beyond what had already been disclosed in discovery. Put simply, Dugan’s joint venture theory is unsupported by any evidence, and it fails to undermine the legitimacy of the foreign agency’s tip to the FBI.

The district court denied Dugan’s motion to compel discovery because his request was grounded in speculation and unsupported by evidence. And because Dugan can only speculate on what the requested information might reveal, he cannot satisfy *Brady*’s materiality requirement. We thus agree with the district court on the *Brady* aspect of the motion to compel.

2.

We next turn to a review of Dugan’s motion to compel under Rule 16(a)(1)(E) of the Criminal Rules. “Rule 16 differs from *Brady*, which rests upon due process considerations, and provides the minimum amount of pretrial discovery granted in criminal

cases.” *See Caro*, 597 F.3d at 620. Rule 16(a)(1)(E) provides a defendant with the right to obtain discovery of any item “within the government’s possession” if “the item is material to preparing the defense.” To establish materiality, however, the defendant must show “some indication that the pretrial disclosure of the disputed evidence would have enabled the defendant significantly to alter the quantum of proof in his favor.” *See Caro*, 597 F.3d at 621 (internal quotation marks omitted). A mere conclusory claim of materiality, of course, fails to satisfy the defendant’s burden. *See United States v. Sanders*, 107 F.4th 234, 253 (4th Cir. 2024) (citing *Caro*, 597 F.3d at 621).

As explained above, Dugan’s joint venture theory is simply grounded in speculation and unsupported by any evidence. Just last year, in our *Sanders* decision, the defendant advanced a very similar argument, claiming the FBI and a foreign agency were engaged in a joint venture. Our Court found no abuse of discretion in the district court’s ruling that such an assertion amounted to “pure hopeful speculation.” *See Sanders*, 107 F.4th at 254 n.16. Dugan’s argument here is similarly speculative, and it is unsupported by evidence. Because the lack of evidence fails to satisfy Rule 16(a)(1)(E)’s materiality requirement, the district court did not abuse its discretion in denying the second aspect of Dugan’s motion to compel.

B.

Next, we turn to Dugan’s motion to suppress the evidence seized pursuant to the search warrant. Dugan contends that the court erred in denying his suppression motion because the search warrant lacked probable cause. More specifically, he contends that Agent Fleener’s affidavit relied only on the investigative work of the foreign agency and

that discovery would have revealed the foreign agency had conducted a warrantless search of his computer, violating his Fourth Amendment rights.

Generally, the Government must obtain a search warrant supported by probable cause before conducting a search of a residence. *See Fernandez v. California*, 571 U.S. 292, 298 (2014); *see* U.S. Const. amend. IV. Probable cause is not a high bar and does not require certainty; it merely requires “a fair probability that contraband or evidence of a crime will be found in a particular place.” *See Illinois v. Gates*, 462 U.S. 213, 238 (1983). We have also made clear that “a ‘single click’ of an Internet link will not establish probable cause to search a residence for evidence of child pornography.” *See United States v. Sanders*, 107 F.4th 234, 250 (4th Cir. 2024). That proposition is only accurate, however, when no additional facts exist that suggest “the person behind that click plausibly knew about and sought out” child pornography. *See United States v. Bosyk*, 933 F.3d 319, 326 (4th Cir. 2018).

Agent Fleener’s affidavit outlined several important and relevant facts that readily demonstrate that the Magistrate Judge had a substantial basis to issue the search warrant for Dugan’s home. For example:

- The foreign agency — known to be reliable — had notified the FBI that Dugan’s IP address was used to access child sexual abuse and exploitation material on the TARGET WEBSITE.
- The TARGET WEBSITE was a TOR hidden service, and therefore only accessible through the TOR network, making it “extremely unlikely that any user could simply stumble upon TARGET WEBSITE without understanding its purpose and content.” *See* J.A. 584.

- Access to the TARGET WEBSITE requires users to create an account and post 50 to 100 megabytes of “indecent material of children;” failure to do so would result in account deletion. *See* J.A. 578.
- Due to the affirmative steps required to access the TARGET WEBSITE, it is “exceedingly rare for a registered website user to access that website and never return.” *See* J.A. 584.
- Individuals with a sexual interest in children or images of children often possess and maintain child pornography for extended periods, typically storing it in electronic format on computers.
- Deleted child pornography can still often be located on an individual’s computer due to the nature of electronic storage, where evidence remains discoverable for extended periods of time even after deletion.

Although the search warrant relied on a single instance of Dugan accessing child pornography on the TARGET WEBSITE, the affirmative steps required for access to the site and its illicit material strongly suggests that Dugan knew that such content was available and had actively sought it out.

Our recent decision in *Sanders* is again very instructive. *See* 107 F.4th 234 (4th Cir. 2024). There, the search warrant affidavit provided substantial evidence that the defendant’s IP address had accessed child sexual abuse and exploitation material on the Hurt Meh website, a TOR hidden service. The Hurt Meh website required multiple deliberate actions to access its illicit content, such as using the TOR browser, locating the obscure web address, and registering an account. Those affirmative steps made it extremely unlikely that the user had stumbled upon the site or its content by accident, thus supporting the conclusion that the user was actively seeking out child pornography. Based on these facts, we ruled that the evidence provided a solid basis for probable cause.

Here, the facts closely mirror those in *Sanders*. As in *Sanders*, Dugan’s actions involved accessing a TOR hidden service known to host and distribute child pornography with several deliberate steps required to reach the illicit material. Such actions strongly suggest that Dugan knew he was seeking out child pornography. Our Court in *Sanders* found this chain of deliberate actions sufficient to establish probable cause, and the same reasoning applies here. The facts recited in Agent Fleener’s affidavit are similar and equally compelling, providing a substantial basis for the issuance of the search warrant in this situation. Like in *Sanders*, there are also sufficient additional facts to suggest that “the person behind the click plausibly knew about and sought out” child pornography. See *Bosyk*, 933 F.3d at 326.

C.

Finally, we assess Dugan’s contention concerning the district court’s restitution awards and its order with respect thereto. Therein, the court ordered restitution in the challenged sums of \$7,000 to Jenny, \$4,000 to Patty, and \$5,000 to April, based on the evidence presented. Dugan appeals these rulings, contending that the government failed to prove by a preponderance of evidence that the minor female victims were entitled to restitution sums exceeding the statutory minimum of \$3,000, as required by 18 U.S.C. § 2259(b)(2)(B) (“the court shall order restitution in an amount . . . which is no less than \$3,000”).⁴

⁴ Dugan does not challenge the restitution sums ordered for the victims Moca and Maureen, as their awards did not exceed the statutory minimum of \$3,000.

Pursuant to 18 U.S.C. § 2259, a sentencing court must order restitution for offenses involving “sexual exploitation of children and child pornography in particular.” *See Paroline v. United States*, 572 U.S. 434, 443 (2014). Restitution is “proper under § 2259 only to the extent the defendant’s offense proximately caused a victim’s losses.” *Id.* at 448. If this standard is satisfied, then the sentencing court must direct the defendant “to pay the victim . . . the full amount of the victim’s losses.” *See* 18 U.S.C. § 2259(b)(1). It is the United States’ burden to quantify, by a preponderance of the evidence, a victim’s losses resulting from the defendant’s crime. *See* 18 U.S.C. § 3664(e). But, in any case, the court must award at least \$3,000 to each victim. *See* 18 U.S.C. § 2259(b)(2)(B).

Determining the appropriate restitution remedy for a child pornography victim is not “a precise mathematical inquiry and involves the use of discretion and sound judgment.” *See Paroline*, 572 U.S. at 459. It is a “difficult” and “an inherently imprecise task,” and therefore courts are accorded “broad discretion” in calculating and ordering such restitution awards. *See United States v. Arce*, 49 F.4th 382, 396 (4th Cir. 2022). The sentencing courts, as the Supreme Court has explained, “might, as a starting point, determine the amount of the victim’s losses . . . [and] then set an award of restitution in consideration of factors that bear on the relative causal significance of the defendant’s conduct in producing those losses.” *See Paroline*, 572 U.S. at 460. The *Paroline* Court spelled out a pertinent list of factors for the sentencing courts to consider, including:

the number of past criminal defendants found to have contributed to the victim’s general losses; reasonable predictions of the number of future offenders likely to be caught and convicted for crimes contributing to the victim’s general losses; any available and reasonably reliable estimate of the broader number of offenders involved (most of whom will, of course, never

be caught or convicted); whether the defendant reproduced or distributed images of the victim; whether the defendant had any connection to the initial production of the images; how many images of the victim the defendant possessed; and other facts relevant to the defendant's relative causal role.

Id. Nevertheless, the foregoing “guideposts the Supreme Court articulated were suggestions rather than prerequisites.” *See United States v. Dillard*, 891 F.3d 151, 161 (4th Cir. 2018).

The district court in this situation fully complied with the *Paroline* decision. It carefully considered the evidence and the various *Paroline* factors in determining the appropriate restitution for each of the female child victims. Given the inherent imprecision of this task, we are satisfied that the court properly exercised its discretion in ordering the challenged restitution sums.

IV.

Pursuant to the foregoing, we reject each of Dugan’s appellate contentions and affirm the judgment of the district court.

AFFIRMED