

PUBLISHED

UNITED STATES COURT OF APPEALS
FOR THE FOURTH CIRCUIT

No. 20-4557

UNITED STATES OF AMERICA,

Plaintiff - Appellee,

v.

AUGUSTIN DANTE EZEQUIEL ARCE,

Defendant - Appellant.

Appeal from the United States District Court for the Eastern District of Virginia, at Norfolk. Arenda L. Wright Allen, District Judge. (2:18-cr-00121-AWA-LRL-1)

Argued: March 8, 2022

Decided: September 8, 2022

Before AGEE and RICHARDSON, Circuit Judges, and FLOYD, Senior Circuit Judge.

Affirmed in part, reversed in part, and remanded with instructions by published opinion. Judge Richardson wrote the opinion, in which Judge Agee and Senior Judge Floyd joined.

ARGUED: James R. Theuer, JAMES R. THEUER, PLLC, Norfolk, Virginia, for Appellant. Daniel Patrick Shean, OFFICE OF THE UNITED STATES ATTORNEY, Norfolk, Virginia, for Appellee. **ON BRIEF:** Raj Parekh, Acting United States Attorney, Alexandria, Virginia, Elizabeth M. Yusi, Assistant United States Attorney, OFFICE OF THE UNITED STATES ATTORNEY, Norfolk, Virginia, for Appellee.

RICHARDSON, Circuit Judge:

After confessing and consenting to the search of his cellphone, Augustin Arce was convicted at a bench trial of receiving and possessing child pornography found on his phone.¹ He appeals, making six arguments.

He first argues that his confession was obtained in violation of his *Miranda* rights because he was in custody when questioned. Second, he argues that introducing a report detailing items downloaded from his phone violated his Sixth Amendment right to confront witnesses because the report included testimonial statements that certain images were likely child pornography. Third, he argues that evidence of other child-pornography downloads associated with him—and testimony about this evidence—should not have been admitted as improper character evidence. Fourth, he argues that testimony from Detective Simpson offered improper lay-opinion testimony matching thumbnail photos to videos. Fifth, he claims that the district court wrongly ordered restitution to a child-pornography victim. And finally, he claims that the district court erroneously imposed certain supervised release conditions, including a lifetime ban on internet and computer usage.

¹ In this opinion, we use the conventional phrase “child pornography” to describe the sexually explicit images of children. *See* 18 U.S.C. §2256(8). We do so even though “child-sexual-abuse images” might be more accurate. *Cf. Paroline v. United States*, 572 U.S. 434, 440 (2014) (noting that the production of child pornography “involves child abuse” and that child pornography is a permanent record of “the depicted child’s abuse”). Our use of the more common phrase, child pornography, should not be taken to obscure the fact that many of Arce’s images reflect the brutal sexual abuse of very young children. *See* J.A. 1038 (describing images as prepubescent males and females engaged in sexually explicit conduct, including sadistic and masochistic conduct along with bestiality).

The totality of the circumstances of Arce’s questioning show Arce was not in custody, so his *Miranda* rights were not violated. Although admitting the cellphone report into evidence violated Arce’s Confrontation Clause rights, we find that error was harmless. And the district court did not abuse its discretion in admitting evidence of past wrongs, in allowing in Detective Simpson’s lay-opinion testimony, or in fashioning its restitution order. But the lifetime ban on internet and computer usage is foreclosed by our caselaw. So we reverse as to that condition and remand to the district court.

I. Background

In 2017–18, Ed Simpson, a Virginia Beach Police Department detective, was working undercover for a Homeland Security Investigations task force where he connected to a peer-to-peer file-sharing network to monitor the flow of child pornography.² He observed various Internet Protocol addresses sharing child-pornography files. One IP

² On a peer-to-peer file-sharing network, a person may download files directly from the computers of other network users. Sometimes, the file can be broken into several pieces and spread across several different computers; “torrents” contain the instructions necessary to locate a file or all the pieces of a file. There is an understanding of reciprocity on these networks; when someone downloads a file, it will be stored (until deleted) on a “shared” folder. Other users can then download from that folder. Law enforcement uses a version of the software that looks for complete illicit files—i.e., files that are not broken up into multiple pieces and takes advantage of files stored in “shared” folders to track particular users to files of child pornography. Investigators regularly do searches for known images and videos of child pornography; if someone on these networks has recently downloaded that file, the investigator can download it directly from that user’s “shared” folder. They also can identify the user’s IP address (which can generally be thought of as a unique identifier code for every internet connection). That IP address can then be used to find the actual, physical address where the computer or phone was when the police downloaded the file from it.

address was linked to a house on Lord George Drive in Virginia Beach. And that house belonged to Arce's sister.

In May 2018, police served a warrant on the Lord George residence. Two agents wearing bullet-resistant police vests knocked on the door. Arce answered and the officers noted that they had a warrant. Arce, who was house-sitting for his sister at the time, asked to put his dogs in the backyard, which an agent watched him do. The officers then brought in four other search-team members. Arce's friend, Christina Farmer, was upstairs when the officers entered. The officers asked her to come downstairs into the kitchen. Once Arce and Farmer were in the kitchen, the house was cleared, and the remaining search-team members came in. The armed officers never drew their guns.

The officers testified they asked Arce and Farmer to sit at the kitchen table, to avoid impeding the search. The officers denied that they *ordered* Arce and Farmer to do so, which Arce and Farmer disputed. All agreed that an officer remained with Arce and Farmer in the kitchen, and Arce and Farmer further claimed that they were always accompanied by an officer—whether in the bathroom or getting dressed. The officers said that Arce and Farmer were told they were “free to leave” the house, J.A. 345, but Arce and Farmer claimed they were told to remain seated at the table. Arce and Farmer also said that they were not allowed to speak with one another, although officers disputed that too.

After about 15 minutes, Detective Simpson and Agent Paul Wolpert asked Arce to speak in the police vehicle, for “privacy[’s] sake.” J.A. 345. Detective Simpson sat in the front seat with Arce while Agent Wolpert sat in the back to take notes. Before any questioning, Detective Simpson again told Arce that “he was free to leave, [and] didn’t

have to talk.” J.A. 392. Detective Simpson then asked Arce if he knew why they were there and asked a series of questions that eventually led to Arce’s internet activity. He asked if Arce had used peer-to-peer-file-sharing technology. When Arce responded that he had, Detective Simpson “became a little more focused on him.” J.A. 394.

Detective Simpson then began questioning Arce about pornography in general and asked whether Arce “had ever seen anything that he probably shouldn’t have,” J.A. 355, to which Arce responded yes. Detective Simpson eventually asked Arce if he had seen anything illegal. Arce responded yes, and Detective Simpson asked him about child pornography. After Arce admitted to viewing child pornography, Detective Simpson then *Mirandized* him. Arce denied this occurred. He claimed he was handcuffed and threatened several times.

And after agreeing to continue speaking with the agents, Arce again confessed to downloading child pornography. After Arce admitted that he viewed child pornography on a phone in his apartment at Caribe Place, Arce was told that either he could grant permission to search the apartment or officers could apply for a warrant. While Arce was told several times that he did not have to consent, Arce granted permission to search by signing a consent form. At the apartment, Arce used his key to open the door for the officers. The officers first located a ZTE cellphone, but Arce said that phone contained no child pornography. They then found an Alcatel Fierce cellphone under Arce’s mattress, and Arce provided the security pattern to open the phone. Arce was then taken back to the Lord George residence, about 2 hours after the police initially arrived.

Arce was not arrested that day but was later indicted on four counts of receiving child pornography under 18 U.S.C. § 2252(a)(2) and one count of possessing child pornography under 18 U.S.C. § 2252(a)(4)(B).³ The receipt counts were based on knowingly receiving, in May 2018, four pornographic thumbnail images discovered on his Alcatel phone, each with a nondescript file name (one, for example, was named “1005.jpg”).⁴ The possession count was not limited to any one file, but the government focused on a thumbnail photo and three videos found on the phone. For the receipt and possession charges, the government needed to prove that Arce knowingly received/possessed the files, and that he knew them to be child pornography. § 2252(a)(2), (a)(4)(B).

Before the trial, Arce sought to suppress the confession and seized evidence. After an extensive hearing, the court found the officers’ testimony credible, finding a “wide credibility gap between the parties’ testimony” and noting “serious doubt” about the “veracity of Mr. Arce’s testimony.” J.A. 446. Under the “totality of the circumstances”

³ After indictment, the officers called Arce to ask him to turn himself in. But Arce instead fled to California, near the Mexican border. When local officers responded to a trespassing call, they encountered Arce, who falsely identified himself. Once they determined his real identity, Arce was sent back to Virginia to face these charges.

⁴ A thumbnail is a reduced-size version of a frame in a video. Thumbnails aim to provide a preview of a video, so users need not memorize their videos’ file names. If you scroll through your videos in your smartphone and see an image with a “play” button over it, that’s a thumbnail. Many websites use them too. *See* Ty E. Howard, *Don’t Cache Out Your Case: Prosecuting Child Pornography Possession Laws Based on Images Located in Temporary Internet Files*, 19 Berkeley Tech. L.J. 1227, 1240 & n.45 (2004). At trial, the government argued that the thumbnails charged in the indictment were associated with different unknown (and possibly since-deleted) pornographic videos or photos that Arce downloaded at various times.

standard, the court found defendant was not initially in custody during his interview. J.A. 449–52. The court found that the defendant was twice told he was free to leave and not under arrest, was provided *Miranda* warnings when he became a suspect, and under these circumstances “a reasonable person would have felt free to cease cooperating and refuse or terminate the interview.” J.A. 452. Finding that the defendant freely cooperated, assisted, and consented to the search, the court rejected Arce’s claim that his consent was coerced.

Arce asked for a bench trial, which he was given. At trial, the key issue was knowledge: Did Arce know he was receiving and possessing child pornography? The government, of course, emphasized Arce’s confession. Detective Simpson testified at trial that he downloaded fifty child-pornography files from an IP address associated with the Lord George residence from February through October 2017.⁵ Another detective, Greg Miller, introduced child pornography that he downloaded from an IP address associated with Arce’s Caribe Place apartment in April and May 2018.

Detective Simpson also testified about a few other (uncharged) thumbnail photos found on the Alcatel phone. Those photos were introduced into evidence, and Detective Simpson explained that they matched videos (which were in evidence) that he downloaded from the Lord George Drive IP address in 2017. This matching was probative because it tied Arce to the pornography Detective Simpson downloaded from the Lake George Drive IP address, countering Arce’s argument at trial that someone else was responsible for those

⁵ Arce’s brother-in-law testified that Arce lived at the Lord George house from early 2017 through February 2018.

downloads. And Arce's connection to the downloaded child pornography helped establish that Arce knew the files were child pornography.

The government also called another agent, Montoya, as a lay witness to testify about examining the Alcatel phone and other electronics seized from Arce's apartment. Agent Montoya introduced the charged child-pornography images from the Alcatel phone.

Agent Montoya also described using two programs, Cellebrite and Griffeye, to extract files from the devices and analyze them. He used the Cellebrite software to extract files and data from the phone including internet search terms and image-and-video files on the phone. The extracted files were then fed into Griffeye, which uses a hashing algorithm to identify unique images and match them with known child-pornography images. A hashing algorithm generates for a given image an alphanumeric identifier, which, essentially, is unique to that image. *United States v. Ackerman*, 831 F.3d 1292, 1294 (10th Cir. 2016) (“[A] hash value [is] a sort of digital fingerprint.”).⁶ It then compares that image's hash value to the hash values of database images that have been identified as child pornography by law enforcement analysts. Based on this comparison, Agent Montoya used Cellebrite to generate a report that classified certain images as child pornography. Montoya also testified about the Alcala phone's internet search history, which contained many searches for keywords associated with child pornography.

⁶ Like DNA, fingerprints, and other identification evidence, hash values are not foolproof. See Richard P. Salgado, *Fourth Amendment Search and the Power of the Hash*, 119 Harv. L. Rev. F. 38, 39 & n.6 (2005) (noting the chance of two different files sharing a hash value is “astronomically small”); see also *United States v. Wellman*, 663 F.3d 224, 226 n.2 (4th Cir. 2011).

After the district court rejected Arce’s motion for acquittal based on insufficient evidence, the court found Arce guilty. The court later sentenced Arce to 130 months of imprisonment and imposed restitution to a victim in one of the images, who uses the pseudonym “Violet.” J.A. 997. Based in part on expert reports, which estimated Violet’s healthcare costs, the court imposed a restitution amount of \$5,000.

The court also imposed supervised-release conditions on Arce including a ban on “employment or volunteer services that allow him access to computer[s] or minors,” “any access to or possess[ion of] any pornographic material or pictures displaying nudity,” or “possess[ion] or use [of] a computer to access any online computer services at any location, including employment, without the prior approval of the probation officer.” J.A. 1002–03.

Arce timely appealed.

II. Discussion

A. *Miranda* Warning

The Fifth Amendment enshrines a right against self-incrimination. To protect this right, our jurisprudence requires a *Miranda* warning be provided to suspects in custody before an interrogation. *United States v. Bernard*, 927 F.3d 799, 805–06 (4th Cir. 2019) (citing *Miranda v. Arizona*, 384 U.S. 436, 444 (1966)). This requirement does not apply to all questioning, only to interrogations that are “custodial.” *Miranda*, 384 U.S. at 444.

Whether an individual is in custody is a fact-specific, objective inquiry into the totality of the circumstances. *United States v. Hargrove*, 625 F.3d 170, 178 (4th Cir. 2010). That inquiry asks whether a reasonable person would perceive his “freedom of action is curtailed to a ‘degree associated with formal arrest.’” *Berkemer v. McCarty*, 468 U.S. 420,

440, 442 (1984) (quoting *California v. Beheler*, 463 U.S. 1121, 1125 (1983) (per curiam)). Reviewing a district court’s denial of a motion to suppress, we review the “district court’s legal determinations *de novo* and its factual conclusions for clear error.” *United States v. Shrader*, 675 F.3d 300, 306 (4th Cir. 2012). In doing so, we construe the evidence in the light most favorable to the government. *Id.*

The district court, having heard testimony from officers and Arce, found the officers credible and held that Arce was not in custody before being read his *Miranda* warnings. We find no clear error to overturn the court’s factual findings and, based on those findings, affirm the district court’s conclusion. Two officers knocked on the door where Arce was housesitting. Arce answered and let several officers in. Guns were never drawn, and Arce was never physically restrained. The officers displayed a calm demeanor throughout but kept Arce under observation during the house search, and the officers asked Arce to speak with them while sitting in a police car’s front seat for less than an hour after telling Arce he was free to leave. And the officers not only let Arce go after this interaction but allowed him to turn himself in once they had a warrant for his arrest. *Cf. United States v. Braxton*, 112 F.3d 777, 781 (4th Cir. 1997) (stressing that Braxton “was not taken into custody even after the interview” in finding his confession freely given). Based on the facts as found by the district court and construing the evidence in the light most favorable to the government, we agree with the district court’s conclusion that Arce was not in custody.

These facts track other cases in which this court has affirmed a district court’s finding that the suspect was not in custody. *See, e.g., United States v. Azua-Rinconada*, 914 F.3d 319, 326 (4th Cir. 2019); *Hargrove*, 625 F.3d at 179–83; *United States v. Nielsen*,

640 F. App'x 224, 227–28 (4th Cir. 2016) (unpublished). In *Hargrove*, for example, about a dozen officers, some of whom were armed, executed a search warrant of the defendant's house. 625 F.3d at 179. As here, officers and Hargrove gave conflicting testimony about whether officers told Hargrove he was “free to leave,” but the district court credited the officers' testimony. *See id.* Two other circumstances mirrored those here: Hargrove was not handcuffed or under arrest at the time of the interview, and the interview occurred “some time” after any control exercised during the protective sweep ended. *See id.* at 179–80. And *Hargrove* involved several aggravating facts not present here: The officers there drew their weapons at the inception of the search, and the search was of Hargrove's own home. *See id.* at 174. Given the totality of those circumstances, the interview was non-custodial. *Id.* at 179–83.

And this case can be distinguished from cases in which we have found questioning to be custodial. In *United States v. Johnson*, 734 F.3d 270, 275–76 (4th Cir. 2013), for example, the defendant was also questioned in a patrol car, but unlike Arce, Johnson was arrested and handcuffed first. And unlike the circumstances here, the officers in *United States v. Hashime*, 734 F.3d 278, 280 (4th Cir. 2013), approached with a battering ram and banged on the entrance before being let in. They then entered the defendant's bedroom with guns drawn, woke the naked defendant, led him by the arm in his boxer shorts to the front lawn despite the cold weather, questioned him in a small basement storage room away from his family for three hours, while still not allowing him to have shoes or socks, and only read him his *Miranda* rights two hours into the interrogation. *Id.* at 280–81. In the midst of that display of police force and control, the police did tell Hashime he could leave

at any time, that he didn't need to answer questions, and that he could use the bathroom. *Id.* at 283. The *Hashime* court said that factors like those “cut against custody,” though they can be outweighed by an hours-long interrogation, guns-drawn commands, and other aggressive police behavior. *Id.* at 285. But this case does not involve the extreme behaviors that tipped the scales in *Hashime*.⁷

Arce's argument relies substantially on the fact that officers kept Arce under observation while he was in the house during the search. But considering the totality of the circumstances, that fact does little to establish that Arce's freedom of action would be reasonably perceived as curtailed to a degree associated with formal arrest. Keeping an eye on Arce helped ensure the integrity of the search and safety of the officers. And if

⁷ *United States v. Colonna*, 511 F.3d 431 (4th Cir. 2007), is also distinguishable. There, we held the defendant's *Miranda* rights were violated. *Id.* at 436. And on its surface, the case seems like ours. In the early morning hours, twenty-five FBI agents executed a warrant on a home looking for child pornography; they woke the defendant at gunpoint, told him to get dressed, and proceeded to search the home while guarding the defendant and his family. *Id.* at 433. An agent asked to talk to the defendant in an FBI vehicle but told him that he “was not under arrest,” and the defendant later admitted to possessing child pornography. *Id.* But the case is factually distinct. There, “the agents did everything short of actually, physically restraining [Colonna] to make him, or any reasonable man, believe that he was not free to leave.” *Id.* at 435–36 (quoting district court). But the district court determined that telling Colonna he “was not under arrest” was enough to remedy the *Miranda* issue, despite the totality of the circumstances suggesting a custodial interrogation; permitting that one fact to swamp the others, we held, was legal error. *Id.* at 436. Here, the conclusion that under the totality of the circumstances, a reasonable person *would* have thought he was free to leave is well-supported by factual differences between the two cases: Colonna was awoken at gunpoint, while here guns were never drawn; Colonna's own house was being searched, while Arce could have simply returned to his apartment if he wished; and Colonna “was never told that he was free to leave or that he did not have to respond to questions,” *id.*, but Arce was told exactly that.

Arce had exercised his option to leave the house during the search, observation would not have been necessary. So we affirm the district court’s denial of Arce’s motion to suppress.⁸

B. Confrontation Clause

Agent Montoya, testifying as a lay witness, introduced several Cellebrite Reports that reflected information extracted from Arce’s electronic devices. Arce does not challenge the admission of the charged child-pornography images. He instead argues that introducing the reports—which included all the information extracted from the phone, not just the charged images—violated his rights under the Sixth Amendment’s Confrontation Clause. Though most of those reports contained only non-testimonial evidence that is not implicated by the Confrontation Clause, one report included testimonial statements categorizing images as likely child pornography. And that was improper. But in the context of this trial, we find that error harmless.

When statements are introduced against the defendant at a criminal trial, the defendant has a right to confront the witness, but this right “is only implicated in the context of testimonial statements.” *United States v. Benson*, 957 F.3d 218, 230 (4th Cir. 2020); *see Crawford v. Washington*, 541 U.S. 36, 51 (2004). In contrast, a non-testimonial statement, “while subject to traditional limitations upon hearsay evidence, is not subject to the Confrontation Clause.” *United States v. Washington*, 498 F.3d 225, 229 (4th Cir. 2007) (quoting *Davis v. Washington*, 547 U.S. 813, 821 (2006)).

⁸ To the extent that Arce contends that his consent to search the apartment was invalid even if the confession was lawfully obtained, we reject that claim because the facts found by the district court show his actions were voluntary.

A testimonial statement exists where “a reasonable person in the declarant’s position would have expected his statements to be used at trial—that is, whether the declarant would have expected or intended to bear witness against another in a later proceeding.” *Benson*, 957 F.3d at 228 n.7 (quoting *United States v. Dargan*, 738 F.3d 643, 650 (4th Cir. 2013)). It can be difficult to apply this standard to technical reports. See Stephen Aiken, *Autopsy Reports, the Confrontation Clause, and a Virtual Solution*, 53 *Jurimetrics J.* 213, 213–14 (2013). But in general, when “machines generate[] data . . . through a common scientific and technological process,” the operators of those machines do not make a “statement” under the Confrontation Clause when reporting the data. *Washington*, 498 F.3d at 230. But characterizations of, or conclusions drawn from, the data are statements. See *id.* at 230–31; *United States v. Moon*, 512 F.3d 359, 362 (7th Cir. 2008) (“[T]he Confrontation Clause does not forbid the use of raw data produced by scientific instruments, though the interpretation of those data may be testimonial.”).

To understand whether a Cellebrite report contains testimonial statements, we must understand how Cellebrite works. First, the officer downloads all the information from a phone. Cellebrite then lumps the downloaded information into different categories like texts, browser history, and videos and images. Those files are then viewable in a report or on a computer.

Often this is the extent of a Cellebrite report. And a Cellebrite report that stopped at downloading the files would not typically implicate the Confrontation Clause. But often in child-pornography cases, as in this case, officers use a hashing algorithm to create a hash value—a unique digital fingerprint—for each image or video file. The resulting hash value

is unique to that file. *Ackerman*, 831 F.3d at 1294; *United States v. Wellman*, 663 F.3d 224, 226 n.2 (4th Cir. 2011). And the use of that hash value may lead to a testimonial statement.

The hash value of a file standing alone does little; it too is just raw data. But if two hash values match, that is excellent evidence that two images are identical. So the significance of a file's hash value arises when the value is compared to a database containing "known" child-pornography images. Here, Agent Montoya compared the hash values of images from Arce's phone to a database of "known" child-pornography images that Griffeye created using input from law enforcement officers. Those officers categorize images as child pornography and then provide those images to Griffeye so their hash values may be placed in its known-child-pornography database. If a file's hash value matches with one in the Griffeye set, then the Cellebrite report reflects that the file is likely child pornography.

In the Cellebrite report at issue here, one column reflected, based on hash value, which images or videos are "Child Abuse Material (CAM)" or "Child Exploitation Material (non-CAM)/Age Difficult." In the excerpt below—with the thumbnail redacted—the first file is not identified as a match, the second is identified as "Child Exploitation Material (non-CAM)/Age Difficult" and the third is identified as "Child Abuse Material (CAM)."

14	Name: 1011.jpg Path: Media/Internal storage/Android/data/org.videolan.vlc/files/thumbs/1011.jpg MD5: 20a3774ee43a96d885675c2c70732a09	Size (bytes): 7188 Created: 5/5/2018 07:42			
15	Name: 1012.jpg Path: Media/Internal storage/Android/data/org.videolan.vlc/files/thumbs/1012.jpg MD5: 164fc81b921cf8a44aa442f786a31903	Size (bytes): 6606 Created: 5/5/2018 07:42 Hash set: Augustin Arce 20180601.082815 Cat2 (US) (Child Exploitation Material (non-CAM) / Age Difficult)			
16	Name: 1013.jpg Path: Media/Internal storage/Android/data/org.videolan.vlc/files/thumbs/1013.jpg MD5: de0ee044283602709fec911671542857	Size (bytes): 10449 Created: 5/5/2018 07:42 Hash set: Augustin Arce 20180601.082815 Cat1 (US) (Child Abuse Material (CAM))			

Each of these statements that a given image is Child Exploitation Material or Child Abuse Material depends on two premises. First, that the images in the Griffey database are really child exploitation or abuse material. This conclusion derives from unknown law enforcement officers' judgments that certain images qualify. The second premise is that the hash value of one of the known images matches that of an image found in the Cellebrite download.

It is the first of these premises that creates a Confrontation Clause problem. The second premise—the hash values match—may just be the kind of machine-generated data from a common technological process that is non-testimonial. *See Washington*, 498 F.3d at 230 & n.2. But the first premise—a given image in the Griffey database is child exploitation or abuse material—is classic testimonial evidence. That conclusion depends on the judgment of law enforcement that a given image is child pornography. And that judgment is made for the purpose—or at least the foreseeable result—of identifying and prosecuting criminal cases. So the statements in the Cellebrite report identifying a given

image is Child Exploitation Material or Child Abuse Material are testimonial. And including those testimonial statements violated Arce's Confrontation Clause rights.⁹

This error is subject to harmless-error analysis. When an evidentiary issue is also a constitutional issue, as here, we can only affirm if it is clear beyond a reasonable doubt that a rational fact finder would have found the defendant guilty absent the error. *United States v. Moriello*, 980 F.3d 924, 937 (4th Cir. 2020). Admitting the offending portion of the Cellebrite report—the connection between the images and the Griffeye database—was harmless. It was duplicative of the actual evidence—graphic images of prepubescent victims, who the court described as being “between the ages of probably 4 and 6.” J.A. 912; *see also* J.A. 629. And Agent Montoya permissibly offered lay-opinion testimony that he viewed these images and found them to be child pornography.

The overwhelming evidence established that the charged images were child pornography. It is thus clear beyond a reasonable doubt that the judge would have found Arce guilty without the report's statements that a given image was Child Exploitation Material or Child Abuse Material. The error was therefore harmless.

C. Character Evidence

The Government also introduced evidence of child pornography distributed by the Lord George Drive IP address. That is the evidence that provided the basis for the search warrant. In 2017, Detective Simpson acted undercover to observe the sharing of child

⁹ Arce's argument on appeal that admitting the Cellebrite reports for the iPad Mini (Government Exhibit 28) and the ZTE cellphone (Government Exhibit 29) violated the Confrontation Clause fails. Neither of those reports included actual child pornography, and thus did not include the information that we find to be testimonial.

pornography online. In doing so, he downloaded two child-pornography videos from a certain IP address. Logs obtained by subpoenaing an internet service provider showed the IP address was linked to the Lord George Drive residence (and thus Arce). The district court found those two videos, and the associated internet logs, were admissible. We agree.

This evidence was admissible under Rule 414(a), which provides that, “[i]n a criminal case in which a defendant is accused of child molestation, the court may admit evidence that the defendant committed any other child molestation. The evidence may be considered on any matter to which it is relevant.” Fed. R. Evid. 414(a). And the Rule defines “child molestation” to include child-pornography offenses (i.e., “any conduct prohibited by 18 U.S.C. chapter 110”). Fed. R. Evid. 414(d)(2)(B). Rule 414—unlike Rule 404(b)—allows the admission of evidence for the purpose of establishing propensity to commit other sexual offenses. *United States v. Kelly*, 510 F.3d 433, 437 (4th Cir. 2007). So even if the offered videos only helped establish propensity, they were properly admitted.

Arce does not disagree, instead arguing that the Government failed to provide notice of its intent to introduce the evidence under Rule 414 fifteen days before trial. *See* Fed. R. Evid. 414(b). Arce seeks to read into Rule 414 a requirement analogous to that in Rule 404(b)(3) that a separate notice be provided before Rule 414 may be used to introduce evidence. In a criminal case, Rule 404(b)(3)—governing “Other Crimes, Wrongs, or Acts”—requires a “notice” of any such evidence that details, “in writing before trial,” the “permitted purpose,” and “reasoning that supports the purpose” for introducing the evidence.

Unlike Rule 404, Rule 414 only requires disclosing the *evidence* fifteen days before trial: “If the prosecutor intends to offer *this evidence*, the prosecutor must disclose *it* to the defendant” Fed. R. Evid. 414(b) (emphases added). Any ambiguity about the meaning of “it” is cleared up by a list of examples of what the prosecutor must disclose, which “include[s] witnesses’ statements or a summary of the expected testimony”—and those are *types of evidence* not statements of intent or purpose. *Id.* Thus, the more specific Rule 414(b) covering child-molestation evidence only “requires disclosure of the evidence itself.” See *United States v. Benais*, 460 F.3d 1059, 1062 (8th Cir. 2006) (construing Rule 413(b), which is identical to Rule 414(b)); see also *United States v. Delorme*, 964 F.3d 678, 683 (8th Cir. 2020) (“Rule 414(b) does not require that the Government provide notice of intent to use the evidence.”). And here the evidence itself was disclosed months before trial. So it was properly admitted under Rule 414.

D. Lay-Opinion Testimony

Arce also objected to Detective Simpson’s lay-opinion testimony that several uncharged thumbnail images on Arce’s cellphone appeared to come from the two videos the detective downloaded from the Lord George Drive IP address in 2017. This would show that Detective Simpson had downloaded those videos from Arce, making it more likely that Arce was aware of the nature of other videos and images on his phone.

Federal Rule of Evidence 701 permits lay-opinion testimony where the opinion is “(a) rationally based on the witness’s perception; (b) helpful to clearly understanding the witness’s testimony or to determining a fact in issue; and (c) not based on scientific, technical, or other specialized knowledge” that would qualify as expert testimony within

the scope of Rule 702. That opinion must be “based on personal knowledge.” *United States v. Johnson*, 617 F.3d 286, 292 (4th Cir. 2010). And we review the admission of evidence for abuse of discretion. *Id.*

Detective Simpson’s opinion was based on his personal experience, as he had viewed the two videos and compared them to the thumbnails. But Arce argues that the testimony was not actually “helpful to a clear understanding,” because Detective Simpson was no better able to make the comparisons than the judge sitting as trier-of-fact. *See Fed. R. Evid. 701*. We appropriately give wide discretion to a judge sitting as a fact finder to determine whether testimony would help that judge’s understanding. *See Sun Yung Lee v. Clarendon*, 453 Fed. App’x 270, 278 (4th Cir. 2011) (quoting *Mercado v. Austin Police Dep’t*, 754 F.2d 1266, 1269 (5th Cir. 1985)).

The district court did not abuse its discretion by allowing this testimony, given that this was a bench trial and the government offered it—or at least conceded it should only be offered—to point out specific points of comparison, within a sea of other evidence, for the judge sitting as trier-of-fact.¹⁰

¹⁰ We also reject Arce’s challenge to the sufficiency of the evidence. Arce argues that there is insufficient evidence that he knew the files he received and possessed were child pornography. In support, he points out that Agent Montoya could not say whether the charged thumbnails were created by playing the source videos or by failed attempts to play them. It is true that, depending on the device, a thumbnail might not be evidence of any user action to play a video. Many phones and computers generate a thumbnail image for a video automatically as the user scrolls past it in a file explorer—or in some cases, even if the user never does anything. *See generally* Ming Di Leom, Christian Javier D’orazio, Gaye Deegan & Kim-Kwang Raymond Choo, *Forensic Collection and Analysis of Thumbnails in Android* (2015). However, whether or not Arce played the videos, there was ample evidence introduced at trial that Arce knew the files were child pornography—
(Continued)

E. Restitution

The court ordered restitution to “Violet,” a pseudonym for a known child-pornography victim who was portrayed in an illegal image in Arce’s possession. Based on a pediatrician’s report, a psychologist’s report, and other evidence, the district court awarded \$5,000 of restitution.

“We review a restitution order for abuse of discretion.” *United States v. Llamas*, 599 F.3d 381, 387 (4th Cir. 2020). Fashioning appropriate restitution remedies for child-pornography victims is not “a precise mathematical inquiry and involves the use of discretion.” *Paroline v. United States*, 572 U.S. 434, 459 (2014). Courts “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.” *Id.* at 460. And even though *Paroline* laid out a list of factors that a district court might consider, “the guideposts the Supreme Court articulated were suggestions rather than prerequisites.” *United States v. Dillard*, 891 F.3d 151, 161 (4th Cir. 2018).

the search-term history on the phone, Arce’s confession, and the sheer volume of child pornography downloaded at multiple addresses where Arce lived. From that admissible evidence, a reasonable trier of fact “could have found the essential elements of the crime beyond a reasonable doubt.” *See Coleman v. Johnson*, 566 U.S. 650, 654 (2012) (per curiam) (quoting *Jackson v. Virginia*, 443 U.S. 307, 319 (1979)).

Arce also sought to file a pro se brief in this court challenging the reasoning of the district court’s fact-finding. His arguments would not be enough to disturb the district court’s fact-finding even if we accepted the motion. But we deny the motion, because litigants represented by counsel are not entitled to file pro se briefs. *See United States v. Penniegraft*, 641 F.3d 566, 569 n.1 (4th Cir. 2011).

Here, it may be true that the expert reports the court relied on were somewhat imprecise, somewhat speculative, and somewhat duplicative. *See United States v. Moody*, CR 417-256, 2018 WL 3887506, at *5 (S.D. Ga. Aug. 15, 2018) (discussing another restitution request for the same “Violet,” and noting problems with these reports). But calculating this restitution is an inherently imprecise task. *See Paroline*, 572 U.S. at 459–60. Indeed, it may seem unusual to call this “restitution” given the imprecise nature of the payment and the hazy causal relation of the offense to the harm suffered. But some form of financial compensation is required by statute, *see* 18 U.S.C. § 2259, and *Paroline* requires that the district court seek to come up with a number, however difficult that might be. Given that the district court considered the relevant evidence and *Paroline* factors in determining the appropriate restitution and given the task’s inherent imprecision, we find the district court acted within its broad discretion.

F. Supervised-Release Conditions

Arce challenges five supervised release conditions, which amount to a lifetime ban on internet and computer use (Special Conditions 7, 13, and 15), a lifetime ban on access to pictures of nudity (Special Condition 8), and a lifetime ban on contact with minors (Special Conditions 7 and 9). We reverse the conditions implementing a ban on internet and computer use, uphold the condition establishing a ban on images of nudity, and clarify that the conditions banning contact with minors does not include unintentional contact.

Supervised release conditions must be “(1) ‘reasonably related’ to the nature and circumstances of the offense, . . . and the statutory goals of deterrence, protection of the public, and rehabilitation; (2) ‘no greater [a] deprivation of liberty than is reasonably

necessary’ to achieve those statutory goals; and (3) consistent with any relevant policy statements issued by the Sentencing Commission.” *United States v. Ellis*, 984 F.3d 1092, 1098 (4th Cir. 2021) (second alteration in original) (quoting 18 U.S.C. § 3583(d)). A condition is “reasonably necessary” if it is “the least restrictive alternative to achieve the statutory purposes.” *Id.* at 1104. There is little doubt the ban on internet and computer usage is reasonably related to his underlying offenses, but it is rarely the least restrictive alternative. *See id.*

Accordingly, a complete internet ban is almost always excessive for “non-contact child pornography activity, or similar conduct” where there was no actual contact with the victim. *See United States v. Hamilton*, 986 F.3d 413, 421–22 (4th Cir. 2021) (quoting *Ellis*, 984 F.3d at 1105). This case did not involve contact with children, so we reverse the conditions implementing the internet ban and remand to the district court. The district court may still set other computer restrictions that are more appropriately tailored to this case. *See Ellis*, 984 F.3d at 1104 (suggesting less-restrictive examples); *United States v. Holm*, 326 F.3d 872, 878 (7th Cir. 2003) (“Various forms of monitored Internet use might provide a middle ground between the need to ensure that [the defendant] never again uses the Worldwide Web for illegal purposes and the need to allow him to function in the modern world.”). But it cannot impose a total ban absent exceptional circumstances the district court must explain in detail.

A ban on access to pornography is acceptable where “restriction on sexually stimulating material [is] necessary to treat [the defendant]’s addiction and to deter him from future crimes.” *United States v. Van Donk*, 961 F.3d 314, 323 (4th Cir. 2020). And

while district courts must justify their post-release conditions, in some cases “the reason for it [is] so self-evident and unassailable” that no remand is required. *United States v. McMiller*, 954 F.3d 670, 677 (4th Cir. 2020). Here, the reason for prohibiting Arce from accessing pornography is obvious. It was done based on his self-admitted pornography addiction, which eventually escalated into viewing child pornography. So it was not an abuse of discretion to impose this condition.

Finally, given the increasing extremity of the material he viewed, and his own admission that sexual abuse runs in his family, the conditions implementing a prohibition on unapproved contact with minors are reasonable to protect the public. *See Hamilton*, 986 F.3d at 423. But on remand, the district court should make clear that this restriction does not include incidental or unintentional contact. *See United States v. Whitten*, 846 F. App’x 177, 177 (4th Cir. 2021) (per curiam) (unpublished). And the district court should also clarify the meaning of “access” for employment contained in Special Condition 7—for instance, if Arce works at a fast-food restaurant, that incidental contact with a minor at the order counter would not be prohibited.

* * *

Looking at the totality of the circumstances of his interview, Arce’s *Miranda* rights were not violated because he was not in custody. While the inclusion of the Cellebrite report violated his Confrontation Clause rights, the error was harmless. We cannot say that the district court acted unreasonably in convicting based on the evidence, nor can we say allowing Detective Simpson’s testimony or allowing prior-act evidence constituted reversible error. The court also did not abuse its discretion in its restitution order. But the

lifetime ban on internet and computer usage is foreclosed by our precedent given the nature of Arce's crimes, so we remand for reconsideration of the conditions of supervised release. In doing so, we note that, while the restriction on contact with minors is reasonable, it should not include incidental or unintentional contact. The decision is therefore

*AFFIRMED IN PART,
REVERSED IN PART,
AND REMANDED
WITH INSTRUCTIONS.*