

**MACHINE TRANSLATOR TESTIMONY & THE
CONFRONTATION CLAUSE: HAS THE TIME COME FOR
THE HEARSAY RULES TO ESCAPE FROM THE STONE
AGE?**

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ABSTRACT

In a digital-crazed world, new problems inevitably emerge as technology advances and the law struggles to keep pace. A potential problem lurks in the shadows for non-English-speaking people who have contact with the police: the use of machine translators that can either facilitate or impede the ability of non-English-speaking witnesses, suspects, and defendants to understand and exercise their constitutional rights. Many scholars and courts have disagreed whether a non-English-speaking defendant's translated statements can be used against him or her without an opportunity to cross-examine the translator. Scholars and courts have also wrestled with whether machines are declarants and subject to confrontation. This Note bridges these two unsettled issues of law and focuses on a potential problem that the Federal Rules of Evidence do not address: whether machine translators that translate for non-English-speaking criminal defendants are declarants under the hearsay rules and whether the Confrontation Clause of the Sixth Amendment affords defendants the right to confront this machine-generated testimony. This Note argues that the Advisory Committee on Evidence Rules should amend the hearsay rules to provide that, because machine translation poses an increased risk of error and the Confrontation Clause's purpose is to establish that evidence is reliable, machine

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translators should not be allowed to speak for non-English-speaking defendants and defendants should be entitled to confront this machine translator testimony.

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INTRODUCTION

Machine-generated evidence has completely transformed modern litigation.¹ Each day, we leave extensive digital “trail[s]” that tell stories about us² through emails, text messages, photographs, Snapchats, Instagram posts, web searches and GPS location history, etc.³ Given our everyday reliance on technology, it is not surprising litigants and lawyers depend more and more on machine evidence to support and argue their cases.⁴

However, despite the significant effect that technological advances have had on society and culture, the Federal Rules of Evidence “have essentially remained static.”⁵ Courts have struggled to incorporate new forms of machine evidence into long-established admissibility requirements⁶ because machine evidence is “prone to manipulation, potentially making it an inaccurate or misleading source of information.”⁷ Similarly, although the Advisory Committee on Evidence Rules recently enacted several rule amendments to address some types of machine evidence,⁸ the evidentiary problems posed by

1. Carl A. Aveni, *New Federal Evidence Rule Changes Reflect Modern World*, LITIG. NEWS (Apr. 23, 2018), <https://www.americanbar.org/groups/litigation/publications/litigation-news/featured-articles/2018/new-federal-evidence-rule-changes-reflect-modern-world/>; see Alan Pendleton, *Admissibility of Electronic Evidence: A New Evidentiary Frontier*, BENCH & B. MINN., Oct. 2013, at 15.

2. Aveni, *supra* note 1.

3. See SEAN E. GOODISON, ROBERT C. DAVIS & BRIAN A. JACKSON, DIGITAL EVIDENCE AND THE U.S. CRIMINAL JUSTICE SYSTEM: IDENTIFYING TECHNOLOGY AND OTHER NEEDS TO MORE EFFECTIVELY ACQUIRE AND UTILIZE DIGITAL EVIDENCE 4, 5, 7 (2015), <https://www.ncjrs.gov/pdffiles1/nij/grants/248770.pdf>; Jeffrey Bellin, *Applying Crawford’s Confrontation Right in a Digital Age*, 45 TEX. TECH L. REV. 33, 33–34 (2012).

4. Aveni, *supra* note 1; Pendleton, *supra* note 1, at 15.

5. Jonathan L. Moore, *Time for an Upgrade: Amending the Federal Rules of Evidence to Address the Challenges of Electronically Stored Information in Civil Litigation*, 50 JURIMETRICS 147, 148 (2010).

6. See *id.*; Aveni, *supra* note 1; Lucy L. Thomson, *Mobile Devices: New Challenges for Admissibility of Electronic Evidence*, SCITECH LAW., Winter 2013, at 32.

7. Moore, *supra* note 5, at 153.

8. See Casey C. Sullivan, *New Amendments Bring Federal Rules of Evidence Into the 21st Century*, LOGIKCULL (Dec. 13, 2017), <https://blog.logikcull.com/new-amendments-bring-federal-rules-of-evidence-into-the-21st-century/>; see also *Advisory Committee on Evidence Rules 8* (Apr. 17, 2015), https://www.uscourts.gov/sites/default/files/2015-04-evidence-minutes_0.pdf. The Advisory Committee on Evidence Rules enacted two amendments applicable to machine evidence that

machines continue to go largely unaddressed in the Federal Rules of Evidence.⁹

This Note flags a potential issue that the Rules do not tackle: whether machine translators can speak for and implicate non-English-speaking criminal defendants without giving defendants any opportunity to verify the accuracy of the translations.

It is highly likely you have used or heard of at least one of the five most popular machine translator engines—Google Translate, Systran, Amazon Translate, Bing Microsoft Translator, and DeepL Translator.¹⁰ Approximately 500 million people use Google Translate alone every month worldwide, translating over 143 billion words per day.¹¹ Machine translator software allows users to “automatically” translate from one language to another.¹² Among these users are law firms,¹³

became effective on December 1, 2017. *See id.* The first was adding two new categories of self-authenticating documents under Federal Rule of Evidence 902: certified records generated by certain machine-generated data from electronic processes or systems that produce reliable results under Federal Rule of Evidence 902(13), and, certified data forensically-copied from electronic devices, storage mediums, or files, under Federal Rule of Evidence 902(14). FED. R. EVID. 902(13)–(14). The Advisory Committee also amended the ancient document hearsay exception under Federal Rule of Evidence 803(16) to provide that a “statement in a document that was prepared before January 1, 1998 and whose authenticity is established” is not excluded by the hearsay rule regardless of whether the declarant is available as a witness. FED. R. EVID. 803(16); *see also Advisory Committee on Evidence Rules 21* (Oct. 24, 2014), https://www.uscourts.gov/sites/default/files/fr_import/EV2014-10.pdf [hereinafter *Advisory Committee 10/24/14*] (describing the history of the ancient document hearsay exception).

9. Steven W. Tepler, *Digital Data as Hearsay*, DIGITAL EVIDENCE & ELECTRONIC SIGNATURE L. REV., 2009, at 7 [hereinafter Tepler I].

10. *See Amazon Tops Overall Quarterly Survey by One Hour Translation of Neural Machine Translation Engines*, PR NEWSWIRE (Sept. 28, 2018, 13:43 ET), <https://www.prnewswire.com/news-releases/amazon-tops-overall-quarterly-survey-by-one-hour-translation-of-neural-machine-translation-engines-300719593.html> [hereinafter *Amazon Tops Quarterly Survey*].

11. Barak Turovsky, *Ten Years of Google Translate*, GOOGLE: KEYWORD (Apr. 28, 2016), <https://www.blog.google/products/translate/ten-years-of-google-translate/>; Troy Wolverton, *Google CEO Sundar Pichai Revealed a Jaw-Dropping Fact About Its Translation App That Shows How Much Money Is Still Sitting on the Table*, BUS. INSIDER (July 23, 2018, 8:41 PM), <https://www.businessinsider.com/sundar-pichai-google-translate-143-billion-words-daily-2018-7>.

12. *Machine Translations for Personal, Business and Enterprise Usage*, SYSTRAN, <https://www.systransoft.com/lp/machine-translation/> (last visited March 26, 2020).

13. *See* Matthew Blake, *Man vs. Machine: Google Translate Jeopardizes Client Confidentiality*, *eDiscovery*, ABOVE LAW (Jan. 5, 2015, 11:12 AM), <https://abovethelaw.com/2015/01/man-vs-machine-google-translate-jeopardizes-client-confidentiality-ediscovery/>.

doctors,¹⁴ travelers,¹⁵ the Department of Homeland Security,¹⁶ and even the police.¹⁷ Suffice it to say, machine translators “break language barriers” and “make the world more accessible.”¹⁸

Generally, machine translation is useful when only the main point of a statement is necessary.¹⁹ However, the law requires a careful attention to details and precise language.²⁰ Thus, “a ‘good enough’ translation doesn’t cut it”²¹ when parties’ constitutional rights and freedom depend on a “culturally and substantively accurate translation.”²²

A recent decision from the United States District Court for the District of Kansas illustrates how machine-generated translations are constitutionally problematic for non-English-speaking witnesses, suspects, and criminal defendants to understand and exercise their rights.²³ In *United States v. Cruz-*

14. See Linda Carroll, *Google Translate Mostly Accurate in Test with Patient Instructions*, REUTERS (Feb. 25, 2019, 4:45 PM), <https://www.reuters.com/article/us-health-translations/google-translate-mostly-accurate-in-test-with-patient-instructions-idUSKCN1QE2KB>.

15. See Sarah Perez, *Google Maps Adds a New Translation Feature That Speaks Place Names Out Loud*, TECHCRUNCH (Nov. 13, 2019, 12:50 PM), <https://techcrunch.com/2019/11/13/google-maps-adds-a-new-translation-feature-that-speaks-place-names-out-loud/>.

16. See Yeganeh Torbati, *Google Says Google Translate Can’t Replace Human Translators. Immigration Officials Have Used It to Vet Refugees.*, PROPUBLICA (Sept. 26, 2019, 11:37 AM), <https://www.propublica.org/article/google-says-google-translate-cant-replace-human-translators-immigration-officials-have-used-it-to-vet-refugees>.

17. Compare *United States v. Antuna*, 2017 U.S. Dist. Lexis 77931 (S.D. Tex. May 23, 2017) (consenting to search using Google Translate held voluntary), with *United States v. Cruz-Zamora*, 318 F. Supp. 3d 1264 (D. Kan. 2018) (consent to search ruled involuntary where the use of Google Translate confused the defendant as to what exactly the police officer was asking).

18. Turovsky, *supra* note 11.

19. See ADVANCED LANGUAGE TRANSLATION INC., MACHINE-HUMAN HYBRID TRANSLATION 3, http://cdn2.hubspot.net/hub/289455/file-500381309-pdf/MTHT_Hybrid_eBook.pdf?t=1391618893000.

20. See Casen B. Ross, *Clogged Conduits: A Defendant’s Right to Confront His Translated Statements*, 81 U. CHI. L. REV. 1931, 1975 (2014).

21. Devin Coldewey, *Judge Says ‘Literal but Nonsensical’ Google Translation Isn’t Consent for Police Search*, TECHCRUNCH (June 15, 2018, 4:03 PM), <https://techcrunch.com/2018/06/15/judge-says-literal-but-nonsensical-google-translation-isnt-consent-for-police-search/>.

22. Luz E. Herrera & Pilar M. Hernández-Escontrías, *The Network for Justice: Pursuing a Latinx Civil Rights Agenda*, 21 HARV. LATINX L. REV. 165, 207 (2018); see also Ross, *supra* note 20, at 1975.

23. See *United States v. Cruz-Zamora*, 318 F. Supp. 3d 1264, 1271–72 (D. Kan. 2018).

Zamora, a police officer pulled over a driver for having a suspended registration.²⁴ Realizing the driver did not speak English, the officer decided to use Google Translate to translate his questions into Spanish.²⁵

The police officer typed in “Can I search the car?” into Google Translate.²⁶ In response to Google’s translation of the police officer’s question, Cruz-Zamora responded, “[Y]eah, yeah go.”²⁷ The police officer then searched the car and found drugs.²⁸ Charged with possession with the intent to distribute a controlled dangerous substance, Cruz-Zamora subsequently moved to suppress the seized drug evidence, arguing that his Fourth Amendment rights against unreasonable searches and seizures were violated.²⁹

During the hearing on the motion to suppress, professional interpreters testified that “context is very important when performing interpretations, and that Google Translate offers only a literal translation and cannot take context into account.”³⁰ They also testified that the translation generated by Google Translate was a “literal but nonsensical translation” of “Can I find the car[?],” which was not the police officer’s intended question of “Can I search your car?”³¹ The police officer also conceded he could have contacted a human translator, who would have been “a more reliable source for communicating with a non-English speaker” than Google Translate.³²

Thus, because Cruz-Zamora was “a native Spanish speaker with very limited English skills” and the translation generated by Google Translate was “not exactly how a Spanish speaker would ask to ‘search in your car,’” he had to “guess the intent

24. *Id.* at 1266.

25. *Id.*

26. *Id.* at 1266–67.

27. *Id.* at 1267.

28. *Id.*

29. *Id.* at 1266, 1268.

30. *Id.* at 1267.

31. *Id.* at 1267, 1269–70.

32. *Id.* at 1271.

of the question.”³³ Ultimately, the court held that because Cruz-Zamora did not fully understand the police officer’s questions translated through Google Translate as requests to search his car, he did not consent to the search.³⁴

United States v. Cruz-Zamora suggests how dangerous it can be to “indiscriminately” depend on machine translators “when comprehension is crucial and carries legal ramifications.”³⁵ Currently, machine translations cannot precisely convey the content and meaning embedded in exchanges between police officers and non-English-speaking people and are thus constitutionally problematic, as this Note will argue.

Part I of this Note examines the demand for machine translation in police departments and how machine translation generally works. Part II introduces the concept of hearsay and the Supreme Court’s jurisprudence on the Confrontation Clause of the Sixth Amendment. Part II then surveys the current circuit split regarding whether the Confrontation Clause applies to human translators for non-English-speaking defendants during police interrogations, and it concludes with a discussion on how scholars and courts have wrestled with machine evidence under the hearsay rules. Part III proposes the hearsay rules should be amended to include machine translators as declarants that produce testimonial hearsay under the Confrontation Clause. Part III goes on to discuss the potential pitfalls of machine translators that pose evidentiary reliability issues as well as the similarities between human and machine translators. Part III concludes by recommending criminal defendants confront machine translators with the use of human translators to verify the accuracy of translations and by addressing the potential opposition to this Note’s proposal.

33. *Id.* at 1267–68.

34. *Id.* at 1270, 1272.

35. Nicole Black, *Can Consent to Search Be Obtained via Google Translate?*, LEGALNEWS (June 26, 2018), <http://legalnews.com/washtenaw/1460914>.

I. A PEEK INTO MACHINE TRANSLATION TECHNOLOGY

In 2016, Google updated its statistical Google Translate model with the Google Neural Machine Translation system.³⁶ Other companies quickly followed suit with neural machine translator engines, such as Bing Microsoft Translator, Amazon Translate, DeepL Translator, and Systran.³⁷

Neural machine translation is intended to artificially “mimic the function of a human brain”³⁸ by using two networks that “learn[] over time to create better, more natural translations,” to translate entire sentences at a time, and to translate between unfamiliar language pairings.³⁹ In contrast, Google’s prior statistical machine translation model worked by “memorizing phrase-to-phrase translations”⁴⁰ and using statistical probability to predict the most appropriate translation.⁴¹

Most neural machine translators use what is called “‘attentional encoder-decoder’ architecture.”⁴² The encoder is the first network that processes a sentence and, using an

36. Quoc V. Le & Mike Schuster, *A Neural Network for Machine Translation, at Production Scale*, GOOGLE AI BLOG (Sept. 27, 2016), <https://ai.googleblog.com/2016/09/a-neural-network-for-machine.html>. The first case in which there was a challenge to a police officer’s use of a machine translator to question a non-English-speaking person during a traffic stop appears to have been in 2016 in *United States v. Pulido-Ayala*. See generally 2016 U.S. Dist. LEXIS 90897 (W.D. Mo. June 22, 2016) (denying a defendant’s motion to suppress all evidence from a traffic stop, including evidence of a Google Translate conversation between a police officer and the defendant).

37. *Amazon Tops Quarterly Survey*, *supra* note 10.

38. Madison Elizabeth Wahler, *A Word Is Word Is Worth a Thousand Words: Legal Implications of Relying on Machine Translation Technology*, 48 STETSON L. REV. 109, 121 (2018).

39. Barak Turovsky, *Found in Translation: More Accurate, Fluent Sentences in Google Translate*, GOOGLE: KEYWORD (Nov. 15, 2016), <https://blog.google/products/translate/found-translation-more-accurate-fluent-sentences-google-translate/> [hereinafter *Found in Translation*]; see also Davide Castelvechi, *Deep Learning Boosts Google Translate Tool*, NATURE (Sept. 27, 2016), <https://www.nature.com/news/deep-learning-boosts-google-translate-tool-1.20696>; Mike Schuster, Melvin Johnson, & Nikhil Thorat, *Zero-Shot Translation with Google’s Multilingual Neural Machine Translation System*, GOOGLE AI BLOG (Nov. 22, 2016), <https://ai.googleblog.com/2016/11/zero-shot-translation-with-googles.html>.

40. See Schuster, Johnson & Thorat, *supra* note 39.

41. See *The Evolution of Machine Translation*, LLM L. REV. (Jan. 26, 2018), <http://www.llmlawreview.com/2018/01/26/the-evolution-of-machine-translation/>; see also Wahler, *supra* note 38, at 120–21 (discussing statistical machine translation and its common errors).

42. Chris Healy, *Here’s Why Neural Machine Translation Is a Huge Leap Forward*, LILT (Aug. 1, 2018, 5:07 PM), <https://labs.lilt.com/neural-machine-translation-huge-leap-forward>.

attention mechanism, converts it into a sequence of “weighted values.”⁴³ The decoder is the second network that translates these values “back into text in another language.”⁴⁴ By assigning values based on how closely one word is linked to others, the attention mechanism assists the decoder to determine and concentrate on the important components in a given sentence.⁴⁵

Although Google’s neural machine translator purports to decrease mistranslations “by more than 55%-85%” with the assistance of human translators,⁴⁶ who review machine translations for accuracy, it “can still make significant errors that a human translator would never make, like dropping words and mistranslating proper names or rare terms, and translating sentences in isolation rather than considering the context of the paragraph or page.”⁴⁷ Because machine translation technology is rapidly progressing,⁴⁸ machine translators may be used by more police departments in the future.

43. See *id.*; Kiara Cuter, *Parsing in Tongues: Neural Machine Translation*, NOTEWORTHY: J. BLOG (Feb. 3, 2019), <https://blog.usejournal.com/parsing-in-tongues-neural-machine-translation-58a0b24f0533>.

44. Healy, *supra* note 42.

45. See *id.*; Cuter, *supra* note 43.

46. Le & Schuster, *supra* note 36. Many companies that have developed neural machine translation engines have partnered with human translation companies for “post-editing,” which “consists of carrying out an in-depth proofread of a text that has been translated by a machine translation engine.” *Neural Machine Translation: Everything You Need to Know*, ACOLAD. (May 15, 2019), <https://blog.acolad.com/neural-machine-translation>; see Esther Bond, *Survey Examines Machine Translation Post-Editing Among Freelancers and LSPs*, SLATOR (May 2, 2019), <https://slator.com/academia/survey-examines-machine-translation-post-editing-among-freelancers-and-lsps/> (listing Google, DeepL, Systran, and Amazon as companies that use post-editing). Human reviewers pinpoint which parts of a translation need editing rather than “thinking [of] a full translation alternative.” Jost Zetsche, *Using Neural Machine Translation Beyond Post-Editing*, ATA CHRONICLE, <https://www.ata-chronicle.online/highlights/using-neural-machine-translation-beyond-post-editing/> (last visited Feb. 14, 2020); *Machine Translation vs. Machine Translation Plus Post-Editing*, LIONBRIDGE, <https://www.lionbridge.com/blog/translation-localization/machine-translation-vs-machine-translation-plus-post-editing/> (last updated Feb. 19, 2020, 10:34 PM).

47. Le & Schuster, *supra* note 36.

48. See *id.*

Police officers often have contact with people who do not speak English proficiently.⁴⁹ However, the police need to be able to efficiently and effectively communicate with the people they serve to investigate crimes, collect evidence, and protect public safety.⁵⁰ When faced with this conundrum, police officers may want to avoid waiting for the assistance of human translators during traffic stops or interrogations by using machine translators to interact with non-English-speaking people.⁵¹ Machine translators may provide roughly-accurate translations faster and for less money than human translators.⁵² The ultimate question of this Note is whether potentially erroneous machine translations can be treated definitively as a criminal defendant's own words during a police interrogation in the eyes of the Sixth Amendment.

II. THE LAW SURROUNDING THE SIXTH AMENDMENT

Envision this hypothetical scene. A man was found unconscious and bleeding on the sidewalk near the local convenience store. Next to this man a cane was found. Witnesses claim they saw a person rushing away from the scene. A few hours later, a person is arrested and placed in an interrogation room. The person does not speak English proficiently and police cannot get ahold of a translator to assist in the interrogation. One officer proposes they use the Google Translate cellphone application to move the interrogation along. The officers and the arrestee trade turns with the phone.

49. See SUSAN SHAH, INSHA RAHMAN & ANITA KHASHU, U.S. DEP'T OF JUSTICE, OVERCOMING LANGUAGE BARRIERS: SOLUTIONS FOR LAW ENFORCEMENT 4 (2007), https://www.lep.gov/resources/vera_translating_justice_final.pdf.

50. See *id.*

51. See, e.g., *United States v. Lopez*, 2018 U.S. Dist. LEXIS 213251 (D. Neb. Dec. 19, 2018) (providing an example when investigators used Google Translate to ask for consent in both English and Spanish); *United States v. Cruz-Zamora*, 318 F. Supp. 3d 1264 (D. Kan. 2018) (same); *United States v. Antuna*, 2017 U.S. Dist. Lexis 77931 (S.D. Tex. May 23, 2017) (same).

52. See Wahler, *supra* note 38, at 117.

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After a while, Google spits out the following translation of the arrestee's statement: "I hit the man with the cane."⁵³

Fast forward to trial—the prosecution calls one of the police officers at the interrogation to testify about this translation to prove the now-defendant committed the crime of assault. The officer states the defendant told him through Google Translate that he hit the man with the cane.

But what, in fact, the defendant said was that he hit the man who was carrying the cane—not that he used the cane to hit the man.⁵⁴ This difference is legally significant—if the defendant purposely beat the man with the cane, that might constitute aggravated assault. If the man was using the cane to walk, the defendant simply bumped into him on a crowded sidewalk and the man later lost his balance and fell, it might have been an accident.

This Note deals with whether the machine translator—here, Google Translate—or the defendant should be considered the source, or declarant, of the translations.

If the machine translator is the source, as this Note argues, then the police officer's testimony would comprise inadmissible hearsay because the prosecution would be offering the defendant's out-of-court statements that were translated into English by the machine translator at trial to prove the defendant's guilt. And these translations would only be

53. Krassi Rangelova, *Sentential Ambiguity*, U. AT ALBANY—SUNY, <https://www.albany.edu/~krassi/lin220/lecture%2520notes/syntax/Sentential%2520Ambiguity.doc> (last visited Feb. 14, 2020); *see also infra* Section III.B. for a discussion of other common translator errors. As the Department of Justice has recognized, "[t]here is widespread agreement among federal and state courts that in criminal proceedings, [limited English proficient] defendants are entitled to the assistance of an interpreter" under the Fifth, Sixth, and Fourteenth Amendments of the U.S. Constitution. U.S. DEP'T JUSTICE CIVIL RIGHTS DIV., LANGUAGE ACCESS IN STATE COURTS 20 (2016), <https://www.justice.gov/crt/file/892036/download>; *see also id.* at 20 n.13 (collecting federal and state court cases recognizing the right of limited English proficient and non-English-speaking defendants to an interpreter or translator). Additionally, pursuant to the prohibition against national origin discrimination under Title VI, 42 U.S.C. § 2000d, state courts "that receive federal financial assistance must take reasonable steps to ensure that limited English ability does not get in the way of a person's ability to appear and communicate effectively in court." *Id.* at 3.

54. *See* Rangelova, *supra* note 53.

admissible at trial if the defendant had a prior opportunity to formally challenge, or confront, the translator's accuracy.⁵⁵

The alternative, as many scholars and courts conclude for human translators and machines generally, would likely treat the defendant as the source of the translations and assert that the prosecution could offer the translations against the defendant as if they were the defendant's statements—errors and all.⁵⁶ This means that machine translators could essentially speak for and accuse non-English-speaking criminal defendants without giving defendants any opportunity to verify the accuracy of the translations.

First, this Part summarizes the rules prohibiting hearsay set out in the Federal Rules of Evidence. Second, it reviews the Supreme Court's doctrine analyzing whether the Confrontation Clause entitles criminal defendants to confront an unavailable declarant's out-of-court statements. Third, this Part surveys the circuit split on whether the Confrontation Clause applies to human translators for criminal defendants during police interrogations. Fourth, it concludes with an examination on whether the Confrontation Clause applies to machine statements.

A. *An Introduction to Hearsay and the Confrontation Clause*

1. *The hearsay rules*

The Federal Rules of Evidence define "hearsay" as "a statement that: (1) the declarant does not make while testifying . . . and (2) a party offers in evidence to prove the truth of the matter asserted in the statement."⁵⁷

Hearsay has four required elements. There must be a "statement," which is defined as an "oral assertion, written assertion, or nonverbal conduct [that a] person intended . . . as

55. See *infra* Section II.A.2.

56. See *id.*

57. FED. R. EVID. 801(c)(1)–(2).

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an assertion.”⁵⁸ Second, the statement must be made by a “declarant,” which is simply defined as “the person who made the statement.”⁵⁹ Third, the statement must not have been made “while testifying at the current trial or hearing.”⁶⁰ Fourth, the statement must be “offer[ed] . . . to prove the truth of the matter asserted in the statement.”⁶¹

As law professor Norman M. Garland explains,

The hearsay rule is designed to eliminate the repetition in court of statements by out-of-court declarants without the opportunity for cross-examination and observation by the jury. The testimony of every witness involves elements for the jury’s review relating to perception, memory, narration and sincerity. The hearsay rule seeks to eliminate or overcome the risks involved when a jury hears evidence of such statements without the opportunity to observe the declarant’s demeanor, evaluate the declarant’s ability to perceive, remember, narrate and be sincere, and to consider the effect of cross-examination. In short, the hearsay rule seeks to overcome these hearsay risks by either excluding such evidence or only letting it in if the risks are balanced by other factors.⁶²

Pursuant to Federal Rule of Evidence 802, “hearsay is not admissible” as evidence unless “a federal statute[,]” the Federal Rules of Evidence, or Supreme Court precedent “provide[] otherwise.”⁶³ Yet, this general prohibition against hearsay is limited. For example, some statements satisfy all four elements

58. FED. R. EVID. 801(a).

59. FED. R. EVID. 801(b).

60. FED. R. EVID. 801(c)(1).

61. FED. R. EVID. 801(c)(2).

62. Norman M. Garland, *An Overview of Relevance and Hearsay: A Nine Step Analytical Guide*, 22 SW. U. L. REV. 1039, 1053 (1993).

63. FED. R. EVID. 802.

of hearsay but are not considered hearsay, such as a declarant-witness's prior statement⁶⁴ and an opposing party's statement.⁶⁵ And some statements are hearsay but they may be admitted into evidence because they fall under one of the many hearsay exceptions.⁶⁶

2. *The Supreme Court's Confrontation Clause doctrine*

The Confrontation Clause of the Sixth Amendment states that "[i]n all criminal prosecutions, the accused shall enjoy the right . . . to be confronted with the witnesses against him."⁶⁷ The purpose of the Confrontation Clause is to ensure the factfinder can properly assess the credibility of a witness's testimony by granting criminal defendants the right to scrutinize or contest the witness's accuracy and truthfulness through cross-examination at a court proceeding or its equivalent.⁶⁸

In *Ohio v. Roberts*, the Supreme Court laid out its original standard for determining the admissibility of hearsay under the Confrontation Clause.⁶⁹ In *Roberts*, the Court held that an unavailable declarant's hearsay statement was admissible and was not excludable under the Confrontation Clause if the trial court determined that the statement had "adequate 'indicia of reliability.'"⁷⁰ Reliability could be established if the statement

64. FED. R. EVID. 801(d)(1).

65. FED. R. EVID. 801(d)(2).

66. See, e.g., FED. R. EVID. 803 (listing hearsay exceptions that apply when the declarant is available or unavailable to testify); FED. R. EVID. 804 (listing hearsay exceptions that apply when the declarant is unavailable to testify); FED. R. EVID. 807 advisory committee's note to 2019 amendment (listing the residual hearsay exception which applies when, among other considerations, the court determines that the statement has "'equivalent' circumstantial guarantees of trustworthiness," even if the statement is "'not specifically covered' by a Rule 803 or 804 exception").

67. U.S. CONST. amend. VI. The Confrontation Clause applies to the states through the Fourteenth Amendment. See *Pointer v. Texas*, 380 U.S. 400, 403 (1965); see also Claire L. Seltz, *Sixth Amendment—The Confrontation Clause, Witness Memory Loss and Hearsay Exceptions: What Are the Defendant's Constitutional and Evidentiary Guarantees—Procedure or Substance*, 79 J. CRIM. L. & CRIMINOLOGY 866, 882 (1988); Ross, *supra* note 20, at 1940.

68. Ross, *supra* note 20, at 1940; Seltz, *supra* note 67, at 882.

69. 448 U.S. 56, 66 (1980).

70. *Id.*

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fell “within a firmly rooted hearsay exception” or had “particularized guarantees of trustworthiness.”⁷¹

However, the Supreme Court’s decision in *Crawford v. Washington* explicitly overruled the *Roberts* test that allowed trial judges to make “determination[s] of reliability,” reasoning that this test was too “amorphous” and “subjective.”⁷² The Court also reiterated that the Confrontation Clause was designed by the Framers of the Constitution to address the practice of admitting *ex parte* testimony into evidence,⁷³ in which witnesses made out-of-court statements “under government interrogation—against an accused.”⁷⁴

In relying on the history of the Confrontation Clause and the “inconsistent application” of the *Roberts* test, the *Crawford* Court established a new standard that examines whether a hearsay statement is “testimonial.”⁷⁵ Under *Crawford*, the Confrontation Clause excludes the “admission of testimonial statements of a witness who did not appear at trial unless he [or she] was unavailable to testify, and the defendant had had a prior opportunity for cross-examination.”⁷⁶

The *Crawford* Court defined “testimony” as “[a] solemn declaration or affirmation made for the purpose of establishing or proving some fact.”⁷⁷ The Court held that the following are considered “testimonial”: (1) “prior testimony at a preliminary hearing, before a grand jury, or at a former trial”; and (2) statements made to the police during interrogations.⁷⁸

71. *Id.*

72. 541 U.S. 36, 62–63 (2004).

73. *See id.* at 47–52.

74. *Confrontation Clause*, HERITAGE FOUND., <https://www.heritage.org/constitution/#!/amendments/6/essays/156/confrontation-clause> (last visited Feb. 14, 2020); *see also* Paul George, *The Cost of AB 193: Constitutional Guarantees Sacrificed for Ineffective Means*, 17 NEV. L. J. 517, 521 (2017); Anne Rowley, *The Sixth Amendment Right of Defendants to Confront Adverse Witnesses*, 26 AM. CRIM. L. REV. 1547, 1547 (1989).

75. *Crawford*, 541 U.S. at 53.

76. *Id.* at 53–54.

77. *Id.* at 51.

78. *Id.* at 53, 68. The Supreme Court in *Miranda v. Arizona* required suspects in police custody to receive *Miranda* warnings in which suspects are informed of their rights to remain silent and to have an attorney present during questioning pursuant to the Fifth Amendment. 384 U.S. 436,

Subsequent to *Crawford*, the Supreme Court has also recognized forensic laboratory reports as testimonial where an analyst who certified a particular report and conducted or supervised the forensic testing relating to the report does not testify.⁷⁹

In conclusion, post-*Crawford*, the Confrontation Clause prohibits the admission of testimonial hearsay against a criminal defendant into evidence unless the defendant has a prior opportunity to cross-examine the unavailable declarant.⁸⁰ Accordingly, if an out-of-court statement is not considered hearsay, the Confrontation Clause does not apply.⁸¹

This hearsay/non-hearsay dichotomy is critical for non-English-speaking defendants who may require the assistance of a machine translator to communicate with the police. For instance, if a police officer testifies to the machine translations of the defendant's statements and the machine translator is treated as the declarant of the translations, then the police officer's testimony is subject to a hearsay objection. The defendant would then be entitled to confront the machine translator under the Confrontation Clause or else the prosecution could not use the translations against the defendant.⁸²

469 (1966). If the police did not give these warnings and the suspect made an incriminating statement, the prosecution is barred from using the suspect's statement at trial. *Id.* at 444, 479 (describing custodial interrogation as "questioning initiated by law enforcement officers after a person has been taken into custody or otherwise deprived of his freedom of action in any significant way"). "Subsequent case law has [required] . . . a foreign-language communicator [to] ensure that a non-English-speaking suspect understands these Fifth Amendment rights. Once interrogation begins, however, there is no constitutional requirement that a non-English-speaking suspect be afforded an interpreter." Ross, *supra* note 20, at 1947-48; *see id.* at 1948 (explaining that 28 U.S.C. § 1827(d) allows federal judges to determine whether a non-English-speaking criminal defendant requires a translator or interpreter at trial to "ensure full 'comprehension of the proceedings . . . and the presentation of . . . testimony'").

79. *See Bullcoming v. New Mexico*, 564 U.S. 647, 652 (2011); *Melendez-Diaz v. Massachusetts*, 557 U.S. 305, 310-11 (2009). For a more detailed discussion of these cases, *see infra* Section II.B.2.

80. *Crawford*, 541 U.S. at 59.

81. *See id.*

82. *See infra* Section II.B. for a more extensive examination of the language conduit theory and the interplay among it, hearsay, and the Confrontation Clause.

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In contrast, if the machine translator is treated as the defendant's language conduit and the defendant as the declarant, then the translations would not constitute hearsay under the party-opponent exception and the Confrontation Clause would not apply.⁸³

The next Sections will lay out the background surrounding how human-translated and machine-generated statements have been addressed in the realm of hearsay and the Confrontation Clause.

B. Human Translators as Declarants Under the Confrontation Clause

This Section surveys the circuit split on whether criminal defendants are entitled to confront a human translator when a police officer, instead of the translator, testifies that the translations of the defendant's statements are true to prove some element of the crime for which the defendant is being charged.⁸⁴ First, this Section focuses on the majority view following the language conduit theory and holding that translated statements are not hearsay and thus the Confrontation Clause does not apply. Second, it examines the Eleventh Circuit's minority view, rejecting the language conduit theory and ruling the opposite.

83. *See id.*

84. Most scholars have argued against the language conduit theory and in favor of treating the translator as a declarant who is subject to confrontation. *See* Caleb Younger, *Language Conduit Theory After Crawford*, NYU MOOT CT. PROC. (Mar. 11, 2019), <https://proceedings.nyumootcourt.org/2019/03/language-conduit-theory-after-crawford/>; Zachary C. Bolitho, *The Hearsay and Confrontation Clause Problems Caused by Admitting What a Non-Testifying Interpreter Said the Criminal Defendant Said*, 49 N.M. L. REV. 193, 233–34 (2019) (arguing the language conduit theory is flawed and proposing the prosecution should be required to call the translator to testify and to record police interrogations with non-English-speaking suspects); Gregory J. Klubok, *The Error in Applying the Language Conduit-Agency Theory to Interpreters Under the Confrontation Clause*, 89 ST. JOHN'S L. REV. 1399, 1427 (2015); Ross, *supra* note 20, at 1988–89. *But see* Tom S. Xu, *Confrontation and the Law of Evidence: Can the Language Conduit Theory Survive in the Wake of Crawford?*, 67 VAND. L. REV. 1529, 1530 (2014) (taking a middle ground approach by proposing the need to “preserve” the language conduit theory and to “requir[e] confrontation” if the court first determines that the translations at issue are testimonial and then the prosecution meets its burden “to show that the statements should nonetheless be admitted as nonhearsay”).

1. *The majority view: embracing the language conduit theory*

The majority of circuits—specifically, the Fourth, Eighth, and Ninth circuits—have followed the language conduit theory post-*Crawford*.⁸⁵ According to the language conduit theory, the translator is considered a “language conduit” of the defendant, meaning that translations are “attributed” to the defendant as if the defendant was their sole source, or declarant, and the translator did not make any assertions as to what the defendant said.⁸⁶ In other words, the translations are the defendant’s own words, just in another language. Because the defendant’s statements would not constitute hearsay under the party-opponent exception and the defendant cannot cross-examine himself or herself, the Confrontation Clause does not apply.⁸⁷

For example, the Ninth Circuit in *United States v. Orm Hieng* held that a defendant and a translator are “treated as identical for testimonial purposes if the [translator] acted as a ‘mere language conduit’” of the defendant.⁸⁸ The court reasoned that under a pre-*Crawford* balancing test from *United States v. Nazemian*,⁸⁹ when translated statements are “fairly attributed” to the defendant as his or her own statements, the defendant cannot argue these statements are hearsay or he or she “was

85. See, e.g., *United States v. Shubin*, 722 F.3d 233, 248–49 (4th Cir. 2013) (holding “the absence in court of the interpreter did not render the statements inadmissible as hearsay because the interpreter was not the declarant, but only a ‘language conduit.’”); *United States v. Orm Hieng*, 679 F.3d 1131, 1139–41 (9th Cir. 2012); *United States v. Romo-Chavez*, 681 F.3d 955, 967 (9th Cir. 2012) (ruling that the district court did not err in finding the translator was the language conduit for the defendant after applying the facts to the four-part balancing test); *United States v. Sanchez-Gondinez*, 444 F.3d 957, 960–61 (8th Cir. 2006) (recognizing that a translator’s out-of-court statements raised hearsay concerns because he “was not merely acting as a ‘language conduit,’ but rather initiated at least some of the questions posed in the interview”; however, because “the evidence against defendant was overwhelming,” the translator’s testimony was harmless error); see also *United States v. Budha*, 495 F. App’x 452, 454 (5th Cir. 2012) (finding “except in unusual circumstances, interpreters may be considered language conduits, whose translations of the defendant’s own statements are not hearsay and do not implicate defendant’s confrontation rights.”).

86. See, e.g., *Orm Hieng*, 679 F.3d at 1139.

87. See *id.*; see also *supra* Section II.A.1.

88. *Orm Hieng*, 679 F.3d at 1139.

89. 948 F.2d 522, 537 (9th Cir. 1991).

denied the opportunity to confront himself [or herself].”⁹⁰ To determine whether a translator is a language conduit, the balancing test evaluated “which party supplied the interpreter, whether the interpreter had any motive to mislead or distort, the interpreter’s qualifications and language skill, and whether actions taken subsequent to the conversation were consistent with the statements.”⁹¹ The court also found that *Bullcoming*, *Melendez-Diaz*, and *Crawford* did not address whether “when a speaker makes a statement through [a translator], the Sixth Amendment requires the court to attribute the statement to the [translator].”⁹² Therefore, the *Orm Hieng* court concluded the language conduit theory was not “in direct conflict” with this Supreme Court precedent.⁹³

2. *The outlier Eleventh Circuit: repudiating the language conduit theory*

On the other hand, the Eleventh Circuit has rejected the language conduit theory.⁹⁴ In *United States v. Charles*, the court ruled that it is testimonial hearsay when a police officer testifies regarding the translated out-of-court statements made by an unavailable translator.⁹⁵ Ultimately, the court held the translator was the declarant of the translations and the Confrontation Clause entitled the defendant to confront the translator regarding the accuracy of the translations.⁹⁶

The *Charles* court analyzed how translation works to decide whether the translator was the declarant of the translated statements.⁹⁷ Relying on how scholars have construed the

90. *Orm Hieng*, 679 F.3d at 1140.

91. *Nazemian*, 948 F.2d at 527; see *Orm Hieng*, 679 F.3d at 1139; see also *Romo-Chavez*, 681 F.3d at 959 (explaining that a translator may still be considered a language conduit even if the prosecution retains the translator).

92. *Orm Heing*, 679 F.3d at 1139–40.

93. *Id.* at 1140.

94. See *United States v. Charles*, 722 F.3d 1319 (11th Cir. 2013).

95. See *id.* at 1330–31.

96. *Id.*

97. *Id.* at 1324.

“nature of language interpretation,” the court reasoned that translation requires translators to understand the speaker’s assertions in one language before reformulating and “transferring” them into another language.⁹⁸

Additionally, the court explained that there is not always a “one-to-one correspondence between words or concepts in different languages” due to, in part, “differences in dialect and unfamiliarity of colloquial expressions” as well as “the contextual, pragmatic meaning of specific language.”⁹⁹ Consequently, translators must make assumptions and assertions of their own because they convert ideas from one language into another, thus providing “much of the information required to determine the speaker’s meaning.”¹⁰⁰

The *Charles* court also relied on two Supreme Court decisions, *Melendez-Diaz v. Massachusetts*¹⁰¹ and *Bullcoming v. New Mexico*,¹⁰² in rejecting the language conduit theory.¹⁰³ *Melendez-Diaz* concerned forensic laboratory tests for cocaine¹⁰⁴ and *Bullcoming* concerned forensic laboratory tests for blood alcohol.¹⁰⁵ Significantly, in both cases, the test results were offered against the defendants, but the analysts who conducted or supervised the tests were unavailable to testify at trial and the prosecution instead offered expert witnesses who could explain the general procedures used to conduct the tests.¹⁰⁶

In *Melendez-Diaz* and *Bullcoming*, the Supreme Court held that the machine-generated laboratory reports constituted testimonial hearsay and the Confrontation Clause required cross-examination of the analyst who conducted or supervised

98. *Id.*

99. *Id.* at 1324–25 (quoting Muneer I. Ahmad, *Interpreting Communities: Lawyering Across Language Difference*, 54 UCLA L. REV. 999, 1035 (2007)).

100. *Id.* at 1325.

101. 557 U.S. 305 (2009).

102. 564 U.S. 647 (2011).

103. *Charles*, 722 F.3d at 1330–31.

104. *Melendez-Diaz*, 557 U.S. at 307.

105. *Bullcoming*, 564 U.S. at 651.

106. *Id.*; *Melendez-Diaz*, 557 U.S. at 308.

the forensic testing.¹⁰⁷ The Court reasoned that a certifying analyst was not a “mere scrivener,” who solely reported “a machine-generated number.”¹⁰⁸ Instead, the analyst’s methodology and interpretation of the results “required the exercise of judgment” and “the use of skills.”¹⁰⁹ Because machine-generated data would be unlikely to reflect all of the analyst’s actions and rationale, forensic testing posed “a risk of error” that could only be exposed to the factfinder through cross-examination of the analyst who conducted or supervised the testing.¹¹⁰

Accordingly, in analogizing these two seminal Supreme Court decisions, the Eleventh Circuit in *Charles* explained that:

If, as we know from *Melendez-Diaz*, even results of “neutral, scientific testing,” do not exempt the witness who performed the test from cross-examination, certainly the Confrontation Clause requires an interpreter of the concepts and nuances of language to be available for cross-examination at trial. More recently, the Supreme Court’s decision in *Bullcoming* makes clear that [a police] officer’s testimony cannot substitute for confrontation of the interpreter regarding her testimonial statements.¹¹¹

The translator was much more than a “mere scrivener” for the defendant’s statements.¹¹² Indeed, the translator analyzed the nuances of the defendant’s language and English, made a judgment call as to how to translate the content and meaning of the defendant’s statements into English, and then expressed his

107. *Bullcoming*, 564 U.S. at 660; *Melendez-Diaz*, 557 U.S. at 319–22.

108. *Bullcoming*, 564 U.S. at 659–60; see *Melendez-Diaz*, 557 U.S. at 320–21.

109. *Melendez-Diaz*, 557 U.S. at 320; see *Bullcoming*, 564 U.S. at 661.

110. *Melendez-Diaz*, 557 U.S. at 320; see *Bullcoming*, 564 U.S. at 654; see also *id.* at 660 (“[R]epresentations, relating to past events and human actions not revealed in raw, machine-produced data, are meet for cross-examination.”).

111. *United States v. Charles*, 722 F.3d 1319, 1329–30 (11th Cir. 2013).

112. See *id.* at 1330.

or her understanding of the defendant's statements.¹¹³ Therefore, the *Charles* court concluded that "[u]nder *Crawford's* framework," the defendant had "a Sixth Amendment right to confront the [translator], who [was] the declarant of the out-of-court testimonial statements that the government sought to admit through the testimony of the [officer]."¹¹⁴

The *Charles* court has received support from scholars, who have similarly recognized the transformative power of translation.¹¹⁵ Some, for instance, posit that translation is a complex, contextually-dependent process that "involves inherent subjectivity and discretion because a translator chooses how best to communicate the speaker's message."¹¹⁶ And like the *Charles* court, other scholars have also explained:

The conventional understanding of interpretation is that it is a mathematical formulae process whereby a word in one language has an "exact, corresponding word in another." According to this understanding, the process of interpretation is a simple matter of "decoding, or transliteration." However, language involves "ambiguous processes not susceptible of mathematical solution."¹¹⁷

Although translators aim to produce "the most accurate translation without 'embellishing, omitting, or editing,'" literal

113. *Id.* at 1324–25.

114. *Id.* at 1323.

115. See, e.g., Younger, *supra* note 84; Bolitho, *supra* note 84, at 232–34; Klubok, *supra* note 84, at 1412–14, 1427; Ross, *supra* note 20, at 1981, 1988–89.

116. Ross, *supra* note 20, at 1967; see also *Charles*, 722 F.3d at 1324–25.

117. Lisa C. Wood, *Translation Protocols: The Time Has Come*, 29 ANTITRUST 67, 68 (2015); Annette Wong, *A Matter of Competence: Lawyers, Courts, and Failing to Translate Linguistic and Cultural Differences*, 21 S. CAL. REV. L. & SOC. JUST. 431, 435 (2012); see also *United States v. Orm Hieng*, 679 F.3d 1131, 1149 (9th Cir. 2012) (Berzon, J., concurring) ("Translation from one language to another is much less of a science than conducting laboratory tests, and so much more subject to error and dispute."); Daniel Benoit, *Constitutional Law/Evidence—United States v. Charles: A Post-Crawford Analysis of an Interpreter as a Declarant: Did the Eleventh Circuit Take Its Decision a Bridge Too Far?*, 37 W. NEW ENG. L. REV. 301, 307 (2015).

translations “should be avoided, as they tend to distort the real meaning [of the interpretation].”¹¹⁸

The next Section will evaluate whether machines should similarly be considered declarants under the hearsay rules and subject to the Confrontation Clause.

C. Machines as Declarants Under the Confrontation Clause

This Section discusses whether machines can generate testimonial hearsay under the Sixth Amendment’s Confrontation Clause. Some examples of machine assertions that may be “covered” under the Confrontation Clause doctrine include: “digital infrared spectrometers and gas chromatographs reporting drug levels in blood; DNA typing results; breath test results; Google Earth location data and satellite images; [and] red light camera timestamp data.”¹¹⁹ Most commentators contend when a person testifies against a criminal defendant about a machine assertion for the truth of the matter asserted, there is no hearsay problem because humans create machines, so they are the “true accusers” or declarants of any machine statements.¹²⁰

Supporters of this view stress that the hearsay rules only apply to human-generated hearsay¹²¹ and “narrowly construe”

118. Wong, *supra* note 117, at 435.

119. Andrea Roth, *Machine Testimony*, 126 YALE L. J. 1972, 2047 (2017).

120. See, e.g., Karen Neville, *Programmers and Forensic Analyses: Accusers Under the Confrontation Clause*, DUKE L. & TECH. REV., 2011, at 9 (alleging that “the programmer [is] the ‘true accuser’—not the machine merely following the protocols he created”); Erick J. Poorbaugh, *Interfacing Your Accuser: Computerized Evidence and the Confrontation Clause Following Melendez-Diaz*, 23 REGENT U. L. REV. 213, 224–25 (2010) (arguing machines are not declarants under the Confrontation Clause because they cannot “[s]peak for [t]hemselves”); United States v. Washington, 498 F.3d 225, 227, 229 (4th Cir. 2007) (ruling machine-generated “raw data” was not testimonial hearsay of the forensic analysts who conducted the testing).

121. See, e.g., Natalie F. Pike, *When Discretion to Record Becomes Assertive: Body Camera Footage as Hearsay*, 20 VAND. J. ENT. & TECH. L. 1259, 1263 (2018) (asserting policy body camera footage “is inadmissible hearsay that may be offered either as a present sense impression or as corroborative evidence of an officer’s in-court testimony”); Peter Nicolas, *But What If the Court Reporter Is Lying? The Right to Confront Hidden Declarants Found in Transcripts of Former Testimony*, 2010 BYU L. REV. 1149, 1190–91 (2010) (arguing that machines are not declarants under the hearsay rules and thus are not subject to the Confrontation Clause); see also, e.g., FED. R. EVID. 801–04.

confrontation rights “as guaranteeing only the courtroom safeguards of the oath, physical confrontation, and cross-examination.”¹²² These courts and scholars reason that machines are “simply the products of mechanical processes” and “human design, input, and operation are integral to a machine’s credibility.”¹²³ They do not generate testimonial hearsay since “they do not create data with any primary purpose of their own” or “act under oath or solemnly in the traditional understandings of those terms.”¹²⁴ Therefore, because “machines are not declarants,” it is not hearsay when humans testify to out-of-court machine statements.¹²⁵

In contrast, other scholars and courts argue that hearsay rules and confrontation rights should be expanded to include machines because the purpose of the Confrontation Clause was to “ensure [the] reliability of evidence.”¹²⁶ Human experts, they contend, serve as “mere scrivener[s],” merely “regurgitating the conveyances of machines [and potentially] creat[ing] a veneer of scrutiny when in fact the actual source of the information, the machine, remains largely unscrutinized.”¹²⁷

122. Roth, *supra* note 119, at 2048; *see, e.g.*, Brian Sites, *Machines Ascendant: Robots and the Rules of Evidence*, 3 GEO. L. TECH. REV. 1, 5 (2018) [hereinafter *Machines Ascendant*]; Brian Sites, *Rise of the Machines: Machine-Generated Data and the Confrontation Clause*, 16 COLUM. SCI. & TECH. L. REV. 36, 51–57 (2014) (collecting Confrontation Clause “jurisprudence that address[es] analogous areas to the machine-generated testimony doctrine: photographs, videos, interpreters, and dog-handler testimony”) [hereinafter *Rise of the Machines*]; Katherine E. Tapp, *Smart Devices Won’t Be “Smart” until Society Demands an Expectation of Privacy*, 56 U. LOUISVILLE L. REV. 83, 104 (2017) (arguing digital data from personal smart devices “fall[s] within the purview of hearsay”); George Cornell, *The Evidentiary Value of Automatically Transcribed Voicemail Messages*, 17 B.U. J. SCI. & TECH. L. 259, 283 & n.185 (2011) (maintaining automatically transcribed voicemails should be classified as hearsay); Teppler I, *supra* note 9, at 20; *see also, e.g.*, FED. R. EVID. 802 (generally prohibiting hearsay); FED. R. EVID. 601–03 (listing requirements for the oath and foundation to determine the competency of witnesses to testify).

123. *See* Roth, *supra* note 119, at 1975 (explaining the Ninth Circuit’s reasoning in *United States v. Lizarraga-Tirado*, 789 F.3d 1107 (9th Cir. 2015), where the court held machine-generated statements are not hearsay).

124. *Rise of the Machines*, *supra* note 122, at 68.

125. *Id.* at 63, 68.

126. *Crawford*, 541 U.S. at 61; *see* Roth, *supra* note 119, at 2048; Steven W. Teppler, *Testable Reliability: A Modernized Approach to ESI Admissibility*, 12 AVE MARIA L. REV. 213, 244 (2014); *see also, e.g.*, *Machines Ascendant*, *supra* note 122, at 5; Teppler I, *supra* note 9, at 20; *Rise of the Machines*, *supra* note 122, at 51–57.

127. *See* Roth, *supra* note 119, at 1979.

This is especially true for machine programming that creates a risk of error “by design.”¹²⁸ For instance, some machines—such as machine translators—employ “machine learning,” which is defined as “computer algorithms that have the ability to ‘learn’ or improve in performance over time on some task.”¹²⁹ As a result, machine assertions “might be false or misleading because the machine is *programmed to render false information (or programmed in a way that causes it to learn to do so), is inarticulate, or has engaged in analytical missteps.*”¹³⁰ Hence, these commentators argue because machine errors are more likely to go undiscovered if the prosecution has the “ability to hide behind [machine] accusations without robust credibility testing,”¹³¹ machines can generate testimony and are subject to confrontation.¹³²

The next Part analyzes whether machine translations may constitute hearsay and whether the Confrontation Clause of the Sixth Amendment grants criminal defendants the right to confront machine translator testimony.

III. ADAPTING THE HEARSAY RULES TO MACHINE TRANSLATORS

Courts that follow the language conduit theory view translation as a mechanical operation, in which statements in one language are supposed to be perfectly and consistently translated to another language.¹³³ This is wrong. Machine translators, as this Note argues, are prone to more severe

128. *See id.* at 1977–78.

129. *Id.* at 1978 n.19 (quoting Harry Surden, *Machine Learning and Law*, 89 WASH. L. REV. 87, 88 (2014)).

130. *Id.* at 1990 (emphasis added).

131. *Id.* at 2052.

132. *See id.* at 2044–45.

133. *See generally* United States v. Shubin, 722 F.3d 233 (4th Cir. 2013) (concluding that the translator was simply a language conduit, ruling against the defendant); United States v. Orm Hieng, 679 F.3d 1131, 1139 (9th Cir. 2012); United States v. Romo-Chavez, 681 F.3d 955, 961 (9th Cir. 2012); United States v. Sanchez-Gondinez, 444 F.3d 957, 960–61 (8th Cir. 2006); *see also* United States v. Budha, 495 F. App'x 452, 454 (5th Cir. 2012); *see also* Ross, *supra* note 20, at 1965; *see also supra* Section II.B.1.

problems and limitations than those faced by human translators.

Because human translators will likely “fail to fully address” all future translation needs of courts and law enforcement due to “human error and expense to the [government],” more sophisticated and less machine-like machine translation technology will be developed.¹³⁴ Yet, machine translators’ quick but “literal,” “nonsensical” translations are constitutionally and practically problematic for the criminal justice system.¹³⁵ As a result, this Note proposes that the Advisory Committee on Evidence Rules should amend the hearsay rules to restrict the ability of machine translators—essentially, flawed robots—to speak for criminal defendants.

First, this Part discusses common errors in machine translations. Second, it explores the similarities between human and machine translators and argues how machine translators conform to current Confrontation Clause precedent as declarants that produce testimonial hearsay. Third, it offers a solution for criminal defendants to confront machine translator testimony through human translators. Fourth, this Part defends this Note’s proposal against potential opposition.

A. Machine Translation Errors

Many lawyers are suspicious of translators because mistranslations are fairly common.¹³⁶ When faced with a choice between human and machine, we are more likely, however, to assume a human translator will precisely and reliably convey the ideas of non-English-speaking defendants.¹³⁷ And for good reason.

134. Brian A. Shue, *Rights to Language Assistance in Florida: An Argument to Remedy the Inconsistent Provisions of Court Interpreters in State and Federal Courts*, 6 FLA. INT’L U. L. REV. 387, 428–29 (2011).

135. See *United States v. Cruz-Zamora*, 318 F. Supp. 3d 1264, 1267–68 (D. Kan. 2018).

136. See Wood, *supra* note 117, at 67; Wahler, *supra* note 38, at 131.

137. Sharon Zhou, *Has AI Surpassed Humans at Translation? Not Even Close!*, SKYNET TODAY (July 25, 2018), https://www.skynettoday.com/editorials/state_of_nmt; see also Roth, *supra* note 119, at 1190; Wahler, *supra* note 38, at 121.

Translation always entails a level of subjectivity and, as a result, a risk of error.¹³⁸ Although machine translators purport to provide “fast—yet accurate—translations at a much lower cost than human translators,”¹³⁹ their literal, out-of-context translations are plagued by errors that human translators would be likely to prevent or at least correct.¹⁴⁰ This Section highlights three common machine translator errors.

First, unlike human translations, machine translations often contain major grammatical errors because machine translators are constrained by the rules, norms, and idiosyncrasies of the “source” and “target” languages.¹⁴¹ To start, machine translators have difficulty with sentences that have multiple meanings.¹⁴² For example, imagine a scenario where a non-English-speaking person witnesses a hit-and-run accident and is giving this statement to the police: “A girl hit by car in street.” This could mean that a girl who was hit by a car is now lying the street or it could mean that a girl was hit by a car while she was in the street. The difference could be significant—if the driver intentionally swerved onto the sidewalk to hit the girl, that might constitute homicide. If the driver simply hit the girl who ran into the street, it might have been an accident. Or, imagine a prosecutor informing a non-English-speaking defendant that the “court [will] try shooting defendant.”¹⁴³ This sentence could literally mean that the court will try to shoot the

138. See, e.g., *Cruz-Zamora*, 318 F. Supp. 3d at 1271; *United States v. Charles*, 722 F.3d 1319, 1324 (11th Cir. 2013); see also Ross, *supra* note 20, at 1967.

139. Wahler, *supra* note 38, at 117.

140. *Human Translators Are Still on Top—For Now*, MIT TECH. REV. (Sept. 5, 2018), <https://www.technologyreview.com/s/611957/human-translators-are-still-on-top-for-now/>.

141. Tya Vidhayasai, Sonthida Keyuravong & Thanis Bunsom, *Investigating the Use of Google Translate in “Terms and Conditions” in an Airline’s Official Website: Errors and Implications*, 49 PAASA 137, 140, 159 (2015) (outlining common machine translation errors with Google Translate’s former statistical model); *The Evolution of Machine Translation*, *supra* note 41. This Section discusses general machine translation errors that pose potential evidentiary reliability issues. For a brief overview of the different types of errors between statistical and neural machine translators, see Wahler, *supra* note 38, at 120–23.

142. See *supra* note 141 and accompanying text.

143. See Jean Mark Gawron, *Syntax*, SAN DIEGO ST. UNIV. 14, https://gawron.sdsu.edu/intro/course_core/lectures/syntax_1ec.pdf (last visited Feb. 19, 2020).

defendant with a gun or that the court will have a trial to adjudicate the defendant's crime involving a shooting. One statement might cause the non-English-speaking defendant to feel unduly coerced.

Additionally, machine translators have great difficulty with the different levels of formality among languages.¹⁴⁴ For example, in Spanish, *tú* and *usted* both technically mean "you" in English.¹⁴⁵ But *tú* is used when talking to someone who is of a similar age or status, and is closer to a second-person singular English language subject pronoun of "you."¹⁴⁶ And *usted* is used as a sign of respect when talking to someone who is of a greater age and status and is a closer to the third-person singular English language subject pronouns of "he," "she," or "it."¹⁴⁷ Consider the legal distinction between a police officer typing into Google Translate, "Did she hit the girl with the car?" and "Did you hit the girl with the car?" In the former question, the defendant might feel like he or she was simply a witness giving a statement. And in the latter, the defendant might feel like a suspect.

Second, unlike human translators, machine translators often fail to recognize and consider "the nuances or context that makes a passage accurate and relevant."¹⁴⁸ One reason machine translators may be unable to render a correct, word-for-word match in the target language is that many words have more

144. See Vidhayasai, Keyuravong & Bunsom, *supra* note 141, at 153–54; see also Ross, *supra* note 20, at 1969 (discussing human translation errors in the context of the language conduit theory); Heather Pantoga, *Injustice in Any Language: The Need for Improved Standards Governing Courtroom Interpretation in Wisconsin*, 82 MARQ. L. REV. 601, 637–39 (1999) (explaining the complexities and formalities involved in the English legal language).

145. See Bill Ong Hing, *Raising Personal Identification Issues of Class, Race, Ethnicity, Gender, Sexual Orientation, Physical Disability, and Age in Lawyering Courses*, 45 STAN. L. REV. 1807, 1830 (1993).

146. See Diane R. Uber, *Spanish Forms of Address in Advertising and Marketing in Madrid: Respect and Politeness*, HAW. U. INT'L CONFS. ARTS, HUMAN. & SOC. SCI. 1–3 (2014), https://www.huichawaii.org/assets/uber_diane_spanish_forms_of_address_in_advertising_ahs2014.pdf.

147. See *id.*; Hing, *supra* note 145, at 1830.

148. Nick McGuire, *9 Common Pitfalls of Machine Translation*, ARGOTRANSLATION (Nov. 7, 2019), <https://www.argotrans.com/blog/9-common-pitfalls-machine-translation/>.

than one definition.¹⁴⁹ For example, the word “bank” could mean a “financial institution” or “the side of a river.”¹⁵⁰ A statement from a defendant that he “took \$10,000 from the side of the bank” may implicate him as a suspect in a robbery if the police officer conducting an interrogation understood the defendant to mean the term “bank” as a financial institution.

Machine translators may also make contextual errors by improperly translating the meaning of idioms or slang.¹⁵¹ For example, picture that a criminal defendant during a police interrogation types into Google Translate, “I was buying ice.” The defendant could mean to say that he was buying illegal drugs—“ice” is a slang term for crack cocaine—or frozen water cubes.¹⁵² Under the former meaning, the defendant could be prosecuted for possession of an illicit drug.

Third, perhaps the most significant limitation of machine translators is that their human programmers cannot clearly explain why a machine translator produced an incorrect or out-of-context translation because the “inner workings” of machine translators are “inscrutable.”¹⁵³ As described in Part I above, the neural machine translation process requires statements in the source language to undergo a “complex series of cascading transformations” to be transformed into the closest target

149. See Vidhayasai, Keyuravong & Bunsom, *supra* note 141, at 142–43, 146–50; Wong, *supra* note 117, at 435.

150. Jennifer Rodd, *Lexical Ambiguity*, in THE OXFORD HANDBOOK OF PSYCHOLINGUISTICS 96–99 (Shirley-Ann Rueschemeyer & M. Gareth Gaskell eds., 2d ed. 2018).

151. See Vidhayasai, Keyuravong & Bunsom, *supra* note 141, at 151–52; Nick McGuire, *The Truth About Machine Translation*, ARGO TRANSLATION (Jun. 19, 2018), <https://www.argotrans.com/blog/truth-about-machine-translation/>; see also Ross, *supra* note 20, at 1969, 1985.

152. See DRUG ENF’T ADMIN., SLANG TERMS AND CODE WORDS: A REFERENCE FOR LAW ENFORCEMENT PERSONNEL 3 (2018), <https://ndews.umd.edu/sites/ndews.umd.edu/files/dea-drug-slang-terms-and-code-words-july2018.pdf>.

153. Will Knight, *The Dark Secret at the Heart of AI*, MIT TECH. REV. (Apr. 11, 2017), <https://www.technologyreview.com/s/604087/the-dark-secret-at-the-heart-of-ai/>; see also David Schatsky & Rameeta Chauhan, *Machine Learning and the Five Vectors of Progress*, DELOITTE INSIGHTS (Nov. 29, 2017), <https://www2.deloitte.com/insights/us/en/focus/signals-for-strategists/machine-learning-technology-five-vectors-of-progress.html>.

language equivalent, with each step making the process more difficult to understand or to clearly explain.¹⁵⁴

Because a person's liberty may depend on the accuracy of machine translators in police interactions and the testimony of police officers would likely be insufficient to allow the factfinder to effectively evaluate machine translators' reliability, criminal defendants should be entitled to confront these machines to verify the accuracy of the translations.¹⁵⁵

The next Section will compare human and machine translation, and analyze how machine translators conform to current Confrontation Clause precedent as declarants that produce testimonial hearsay under the Confrontation Clause.

B. *Similarities Between Human and Machine Translation*

This Section will provide two reasons machine translators should be included as declarants under the hearsay rules and as generators of testimony against criminal defendants. The first reason the hearsay rules should be amended to include machine translators as declarants is machine translators would inevitably produce a different articulation of a non-English-speaking defendant's statements. The defendant would make an assertion in his or her spoken language, and the machine translator would make a different assertion by transforming the defendant's statements into another language.¹⁵⁶ Although ultimately machine-generated, machine translations are intended to be a roughly-accurate reflection of the human user's assertions.¹⁵⁷ However, because there is no "one-to-one correspondence between words or concepts in different languages," machine translations reflect the machine's

154. *Artificially Intelligent Design*, VITAL EDGE (Aug. 20, 2018), <https://www.the-vital-edge.com/artificially-intelligent-design/>; Joe Sommerlad, *Google Translate: How Does the Search Giant's Multilingual Interpreter Actually Work?*, INDEP. (June 19, 2018), <https://www.independent.co.uk/life-style/gadgets-and-tech/news/google-translate-how-work-foreign-languages-interpreter-app-search-engine-a8406131.html>; *see also supra* Part I.

155. Ross, *supra* note 20, at 1975.

156. *See supra* Section II.B.2.

157. *See id.*

assertions as to what the defendant intended to convey in his or her statements.¹⁵⁸

When translating, humans and machines must fill in the gaps among languages and express their understanding of the defendant's statements.¹⁵⁹ This involves processing the defendant's statements, analyzing the nuances of the defendant's source foreign language and the target English language, making judgment calls as to how to translate the content and meaning of the defendant's statements into English based on what they have learned, and then expressing their understanding of what the defendant has stated.¹⁶⁰ As such, machine translators are not simply "mere scrivener[s]"¹⁶¹ that solely report the user's statements verbatim.¹⁶²

The machine translation process requires the machine to apply what it has learned from texts that have been translated into the source and target languages, to recognize the similarities and relationships among words and phrases, and to make assumptions or predictions as to which words will best express the user's statements.¹⁶³ This is especially true when machines are prompted to translate words or phrases between unfamiliar language pairings.¹⁶⁴

The second reason the hearsay rules should be amended is machine translators can generate testimony. The Supreme Court in *Crawford* recognized that police interrogations are testimonial, regardless of whether a translator is involved.¹⁶⁵ It is expected that human translators will be used to ensure non-English-speaking defendants understand their rights and can

158. *United States v. Charles*, 722 F.3d 1319, 1324 (11th Cir. 2013) (citation omitted).

159. *See supra* Part I; *see also supra* Section II.B.2.

160. *See id.*; *Cuter*, *supra* note 43.

161. *Charles*, 722 F.3d at 1330; *see also Bullcoming v. New Mexico*, 564 U.S. 647, 657 (2011).

162. *See The Evolution of Machine Translation*, *supra* note 41.

163. *See Healy*, *supra* note 42.

164. *See Schuster, Johnson & Thorat*, *supra* note 39.

165. *Crawford v. Washington*, 541 U.S. 36, 51 (2004).

participate meaningfully in their trials, but there is no such guarantee to human translators in police interrogations.¹⁶⁶

Similarly, it is also expected that machine translators will be used to convey a user's statements into other languages.¹⁶⁷ If the police increasingly utilize machine translators with non-English-speaking suspects, it is not a major jump in logic that machine translators may be used to translate a suspect's statements and generate testimony that may be used in a future criminal proceeding as in *United States v. Cruz-Zamora*.¹⁶⁸

Accordingly, this Note proposes the hearsay rules should be amended to recognize that machine translators are the declarants of their translations. Specifically, the rules should explain that a criminal defendant is the declarant of the statements he or she makes in his or her spoken language, but the machine translator is the declarant of the translations of the defendant's statements.

This amendment is warranted because machine translations inevitably produce a different articulation of a defendant's statements. Police may use machine translators in interrogations of non-English-speaking people, and the prosecution may use machine translations against criminal defendants at trial. Therefore, machine translations should not be treated as a non-English-speaking criminal defendant's own words. These machine translations should constitute testimonial hearsay if and when the prosecution offers the testimony of a police officer at the defendant's trial regarding the machine translations of the defendant's statements made to the officer during an interrogation. The next Section will discuss potential solutions as to how machine translators can be confronted under the Confrontation Clause.

166. See *supra* notes 53 and 78 and accompanying text; see also *supra* Part I.

167. See *id.*

168. 318 F. Supp. 3d 1264 (D. Kan. 2018) (demonstrating the use of Google Translate in criminal matters).

C. Confronting Machine Translators

There is a greater need to confront machine translators. Why? As discussed above, translation generally is subjective and machine translators are more likely to erroneously communicate a defendant's assertions.¹⁶⁹ Additionally, these inaccuracies would likely be highly relevant to the factfinder in making facts pertaining to key elements of the crime that a defendant is charged with more or less likely.¹⁷⁰

To take advantage of machine translators' cost and time savings and to minimize the risk of false convictions due to mistranslations, human translators should be retained to inspect and scrutinize machine translations that are used against defendants who are not proficient in English. This would require human translators to first examine the machine translations and then translate the translations back into the original source language.¹⁷¹ This would mean, for example, Spanish-speaking defendants would have their translated statements translated again from English back into Spanish and English-speaking police officers from Spanish to English.¹⁷² A human translator should compare these translations for accuracy, focusing on whether any mistranslations pose a serious risk of erroneously implicating the defendant, and should be called to testify regarding the reliability of the machine translations.

Machine translators have "improved leaps and bounds in recent years," but they "will primarily augment, rather than replace, human professionals."¹⁷³ As discussed in Parts I and III,

169. See *supra* Section III.A.

170. See *Crawford v. Washington*, 541 U.S. 36, 61 (2004) ("To be sure, the [Confrontation] Clause's ultimate goal is to ensure reliability of evidence."); see also *supra* Part II.

171. See *supra* Part I.

172. See generally *Cruz-Zamora*, 318 F. Supp. 3d 1264 (D. Kan. 2018) (highlighting police use of Google Translate between English and Spanish).

173. Bernard Marr, *Will Machine Learning AI Make Human Translators an Endangered Species?*, FORBES (Aug. 24, 2018, 12:24 AM), <https://www.forbes.com/sites/bernardmarr/2018/08/24/will-machine-learning-ai-make-human-translators-an-endangered-species/#1a553fff3902>; see Torbati, *supra* note 16; *Translation Platforms Cannot Replace Humans*, ECONOMIST (Apr. 29, 2017),

human translators are more likely than machine translators to catch and correct grammatical errors and to recognize the contextual and substantive meanings embedded in statements.¹⁷⁴ Where a defendant's freedom is at stake, humans should be required to examine and highlight the errors in machine translations.

By employing human translators to review machine translators' work for accuracy, defense lawyers will have a better ability to demonstrate to the factfinder that their client—the non-English-speaking defendant—did not, for example, make incriminating statements to the police and that the prosecution has failed to meet its burden of proof on that note. Similarly, police officers who seek to save time by using machine translators and to avoid having, for example, the evidence they seized suppressed based on non-consent, as in *United States v. Cruz-Zamora*,¹⁷⁵ should use human translators to review machine translations, or they should solely use human translators during traffic stops or interrogations.

Therefore, requiring a human translator to verify a machine translator's accuracy will protect non-English-speaking defendants' rights, expose flawed translations, and drastically diminish the risk of false convictions. The next Section will tackle the opposition to this Note's proposal.

D. Addressing the Opposition

An obvious reply to this Note's proposed amendment is that the hearsay rules could not be simply amended to recognize machines in general as declarants, let alone machine translators.¹⁷⁶ The support for this contention, as discussed in Part II, is that the hearsay rules were designed to prevent the admission of out-of-court statements by non-testifying *human*

<https://www.economist.com/books-and-arts/2017/04/29/translation-platforms-cannot-replace-humans>.

174. See *supra* Part I; see also *supra* Section III.A.

175. See 318 F. Supp. 3d at 1269.

176. See Roth, *supra* note 119, at 1980.

declarants without credibility assessments by the jury and cross-examination.¹⁷⁷ However, as examined in Part III, because machine translation inevitably produces a different articulation of a non-English-speaking defendant's assertions, machine translators should be considered declarants of their translations.¹⁷⁸

Another point in opposition to this Note's proposal is that the Advisory Committee continues to take "a conservative approach to proposing amendments to the Evidence Rules" because rule amendments cause great disruption to the status quo for lawyers, judges, and the legal profession generally.¹⁷⁹ Because it appears that the police's use of machine translators has not been challenged in many court decisions,¹⁸⁰ the short-term burden of this Note's proposal to players in the criminal justice system will likely be limited.

The long-term effects of this Note's proposal will be to preemptively address the potential constitutional violations surrounding machine translators that may be used in police interrogations. If the Committee does not act, machine translations—potentially riddled with errors—could be used against defendants as their own statements without giving them any opportunity to expose inaccuracies to the factfinder.

Machine translators may suffice for obtaining a "rough," "literal" understanding of someone's statements.¹⁸¹ Based on current technology, machine translators cannot produce flawless translations, let alone translations similar in quality to a qualified, experienced human translator.¹⁸² This Note should

177. See *supra* Sections II.A, II.C.

178. See *supra* Section III.B.

179. *Advisory Committee 10/24/14*, *supra* note 8, at 6; Daniel J. Capra, *Electronically Stored Information and the Ancient Documents Exception to the Hearsay Rule: Fix It Before People Find Out About It*, 17 *YALE J.L. & TECH.* 1, 12 (2015).

180. See *Cruz-Zamora*, 318 F. Supp. 3d at 1272 (holding "it is not reasonable for an officer to use and rely on Google Translate to obtain consent to a warrantless search").

181. Orin S. Kerr, "Google Translate" and the Law of Consent Searches, *VOLOKH CONSPIRACY* (June 21, 2018, 3:10 PM), <https://reason.com/2018/06/21/google-translate-and-the-law-of-consent/#>.

182. *Id.*

not be read to diminish machine translators' contributions to society in overcoming language barriers and making the world easier to navigate.¹⁸³ However, this Note recommends that machine translators should not be viewed as conduits for criminal defendants when it is foreseeable that incorrect translations will be generated.

CONCLUSION

The current hearsay rules as provided for in the Federal Rules of Evidence fail to give police departments and courts proper guidance on how to handle machine translations of non-English-speaking defendants' out-of-court statements. Although the Advisory Committee on Evidence Rules amends the Rules conservatively, it should take the opportunity to amend the hearsay rules to provide that machine translators cannot speak for non-English-speaking criminal defendants and that these defendants must be afforded the opportunity to confront the machine translators pursuant to the Confrontation Clause of the Sixth Amendment. As a result of this future amendment, a potential offshoot of the current circuit split involving the language conduit theory for human translators could be resolved preemptively for machine translators and vulnerable non-English-speaking defendants will be protected from possible constitutional violations caused by current machine translation technology.

183. Turovsky, *supra* note 11.