

**UNITED STATES DISTRICT COURT
SOUTHERN DISTRICT OF NEW YORK**

SECURITIES AND EXCHANGE COMMISSION,

Plaintiff,

v.

RIPPLE LABS INC., BRADLEY
GARLINGHOUSE, and CHRISTIAN A.
LARSEN,

Defendants.

Case No. 20-CV-10832 (AT) (SN)

**DEFENDANTS' REPLY MEMORANDUM OF LAW IN SUPPORT OF THEIR
MOTION TO EXCLUDE THE TESTIMONY OF [REDACTED] PH.D.**

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INTRODUCTION

██████ opinions must be excluded on reliability grounds, as part of this Court's gatekeeper function. ██████ created a four-factor test as the basis for his decentralization opinion, but then admitted under oath that *three of his four* so-called test factors do not bear on whether a blockchain is decentralized. Those admissions are so fatal that the SEC tries to rewrite ██████ report in its Opposition Brief by saying that his factors do not actually relate to his opinion on whether the XRP Ledger ("XRPL") is decentralized. But that argument does not help the SEC, both because it is demonstrably false on the face of ██████ report, and because it leaves ██████ with no methodology to support his conclusions about the decentralization of the XRPL, Bitcoin or Ethereum blockchains. What is clear is that ██████ methodology fails to satisfy the basic requirement that, "[t]o warrant admissibility, . . . it is critical that an expert's analysis be reliable at every step." *Amorgianos v. Nat'l R.R. Passenger Corp.*, 303 F.3d 256, 267 (2d Cir. 2002). There is a profound "analytical gap" between his methodology and his conclusions, *id.* at 270, requiring that ██████ decentralization opinion be excluded.

As to ██████ remaining opinions (about Ripple's "efforts" with regard to the XRPL and what would happen to the XRPL if Ripple "disappeared"), there is another serious methodological flaw: ██████ based those opinions on a partial and incomplete review, without any testing, of software code not in effect during the period of the SEC's allegations in this case. The SEC now tries to salvage his conclusions with a six-page "Appendix" of 77 computer software code cites that ██████ himself never reviewed in preparing his opinions, coupled with lawyer assertion (Opp. at 13) that the relevant parts of this additional code are "materially identical" to the code ██████ did review. The SEC does not and cannot say that ██████ looked at any of this in reaching his opinions; that he could not have done so; or even that he has since looked at the Appendix and the code it cites. It instead leaves the Court to go forth and perform

the analysis of source code ██████ could not be bothered to do himself. This astonishingly improper maneuver defies both *Daubert*, because it implicitly concedes that ██████ actual work is too incomplete to support his conclusions, and Rule 37, because the SEC is “not allowed to use that information” that ██████ neglected to consider or analyze in his report “to supply evidence on a motion.” Fed. R. Civ. P. 37(c)(1). The Court should (and indeed must) decline to consider it, and exclude ██████ opinions because they are manifestly not the product of rigorous analysis.

Finally, the SEC concedes that decentralization is not relevant to its claims in this case—a concession the SEC had to make because its own Complaint admits, and Ripple’s Answer agrees, that XRPL technology *is* decentralized. The SEC seeks to have ██████ testify to the *opposite* of what the SEC said in its own pleading, where there is no factual dispute to resolve in the first place—an effort that will only serve to confuse the jury. More confusingly, the SEC claims that ██████ testimony is relevant because of Defendants’ reference to the Hinman Speech and the “economic realities” of XRP in their defenses—but ██████ expressly offers *no* opinions on the Hinman Speech or the economic realities of XRP. His opinions are irrelevant and prejudicial.

ARGUMENT

I. ██████ Decentralization Opinion Must Be Excluded As Unreliable.

A. The defects in ██████ methodology are serious and undisputed.

The SEC does not deny that ██████ testified that three of the four test factors he used as the basis for his decentralization opinion do not actually bear on decentralization. *See* ECF No. 591 at 8-9 (“Opp.”); *see also* ██████ Tr. 184:25-188:7; 243:9-25; 261:13-15; 264:25-265:8, 381:7-18 (admitting, respectively, that the Inclusiveness, Resilience, and In-Protocol Incentives factors of this four-factor test are not necessary to, or do not bear on, whether a blockchain

system is decentralized). Those admissions are devastating, yet the SEC avoids addressing that testimony and instead elusively claims (with neither basis nor explanation) that Defendants have somehow “mischaracterize[d]” ██████ testimony. Opp. at 8. We have not. Defendants quoted ██████ exact words, in context.¹ ██████ testimony is clear and fatally damages the reliability of his methodology. See ECF No. 541 (“Def. Br.”) at 6-9.

The SEC tries to limit that damage by parsing ██████ decentralization opinion into two, claiming that ██████ four-factor test applies only to his analysis of *comparative* decentralization (*i.e.*, the Bitcoin blockchain is more decentralized than the XRPL), and not to his analysis of XRPL decentralization standing alone. Opp. at 9. This after-the-fact attempt at compartmentalization is of no help to the SEC. *First*, it is disingenuous and contradicted by his report: ██████ report makes clear that he was asked *one* question on decentralization, and devised *one* methodology—his four-factor test—to answer it. Report at 3 (█████ stating he was asked a single question in “E.1”); *id.* at 5 (specifically invoking his four-pronged test in summarizing his methodology for how he answered that one question: “I evaluated the decentralization of the XRP Ledger (*i.e.*, its Resilience, Inclusiveness, In-Protocol Incentives, and Governance aspects) and compared it to the decentralization of the Bitcoin . . . and Ethereum . . . blockchains.”).

¹ Tr. 184:25-188:7 (“Q. “[S]o do I understand you to be saying that inclusiveness is not a necessary requirement to decentralization; rather, a decentralized system can be inclusive or not inclusive? A. You got it right.”); *id.* at 261:13-15 (“Q. How does the safety of a system [for your ‘Resilience’ factor] bear on whether it is decentralized? A. It does not.”); *id.* at 264:25-265:8 (“Q. Can a centralized system have liveness? A. It can. Q. So how does measuring liveness [for your ‘Resilience’ factor] tell you whether a system is . . . decentralized? . . . A. It doesn’t. I didn’t say it does. It doesn’t.”); *id.* at 381:12-18 (“Q. So in your view, in-protocol incentives are not necessary to whether a blockchain is decentralized, but a blockchain system with in-protocol incentives may be more decentralized than others? A. I think that fairly summarizes my standpoint, yes.”).

Second, the SEC’s attempted compartmentalization necessarily concedes that [REDACTED] four-factor test *cannot* be reliably used to measure decentralization as to any single blockchain. But that only begs the question of how [REDACTED] self-created test could reliably measure decentralization in three blockchains and then compare their results. That is like arguing that a test that admittedly cannot measure iron in any single blood sample can nevertheless effectively compare iron levels in different blood samples. [REDACTED] and the SEC are silent on this vast analytical gap.² *See Amorgianos*, 303 F.3d at 266 (exclusion is “mandate[d]” when analytical gap between expert’s methodology and proffered opinions “is simply too great”).

The SEC also incorrectly argues (Opp. at 6, 9-10) that the serious flaws in [REDACTED] methodology go only to weight, not to admissibility, by engaging in the same overreading of a passage in *McCullock v. H.B. Fuller Co.*, 61 F.3d 1038, 1044 (2d Cir. 1995), that the Second Circuit expressly rejected nearly 20 years ago. Opp. at 6; *see Ruggiero v. Warner-Lambert Co.*, 424 F.3d 249, 255 (2d Cir. 2005). *Ruggiero* reaffirmed that when an expert’s methodology is simply inadequate to support the conclusions reached exclusion is “mandate[d],” and it deemed any contrary reading of *McCullock* as both “unpersuasive” and “precluded by” controlling authority. *Id.* Here, [REDACTED] methodology is unreliable and that requires exclusion.

B. *Daubert* and its progeny preclude [REDACTED] from opining that the XRPL is centralized based on his own say-so, without any methodology.

Because of the serious problems with [REDACTED] four-part test set forth by Defendants in their Opening Brief, the SEC tries in its opposition to divorce him from it—to no avail. First, the

² The SEC leapfrogs right over this issue to instead argue that [REDACTED] faithfully *applied* his test. Opp. at 9-11. While he did not do that either (*see* Def. Br. at 10-12), even fair application of the test could not cure its fundamental unsoundness. The SEC also tries to distract the Court by arguing this is simply a “battle of the experts” between [REDACTED] and Professor Adriaens. Opp. at 6-8. But it is not. Adriaens offers no opinion about the decentralization of the XRPL from the perspective of computer science, which is the basis for [REDACTED] flawed methodology. *See* Defs.’ Opp. to SEC’s Omnibus Mot. to Exclude (ECF No. 596) at 97.

SEC claims that ██████ never relied on his own test to reach the opinion that XRPL is centralized. Opp. at 8-9. That is revisionist history; he clearly did. *Supra* at 3; Report at 3, 5. Next, the SEC alleges that ██████ can opine that the XRPL is centralized based only on (i) the one-line definition of decentralization that he found in the Troncoso paper in July 2021 or (ii) his qualifications alone. Opp. at 7. Those arguments amount to asking this Court to embrace ██████ *ipse dixit*, without any reliable methodology. *Daubert* and its progeny preclude such an approach and the Court should reject the invitation.

██████ testified that, after he was retained by the SEC in this case in mid-2021, he started searching for a definition of decentralization. Tr. 110:14-20. He selected the Troncoso definition, which he had never seen before he was retained by the SEC, because he “liked” it. Tr. 121:7-14. His report did not examine other definitions. It did not explain why the Troncoso definition is reliable. His claim that the Troncoso definition has been generally accepted by the scientific community is unsupported by any evidence besides his say-so. In fact, ██████ testified that the scientific community did not “need to adopt” the Troncoso definition and that *he* adopted that definition after “reviewing and discussing with myself.” Tr. 120:19-20; 124:20-21. He further conceded that the only scientific paper endorsing his view that the Troncoso definition sets a “minimum bar” for a system to be decentralized is *his own 2022 paper*. Tr. 218:12-219:19. And he told an audience in October 2021, in public remarks made shortly after he submitted his report, that he “had an impression that there was no consensus in how do you define decentralization”—that is, right up until *he* found the Troncoso definition (just a few months earlier). Tr. 119:20-120:12. This is not a reliable scientific method; it is *ipse dixit* requiring exclusion. *See U.S. CFTC v. Wilson*, 2016 WL 7229056, at *9, *11 (S.D.N.Y. Sept.

30, 2016) (Torres, J.) (excluding opinion where expert “provide[d] no support for his testimony” and “all evidence in the record suggests that it is not a generally accepted method”).³

Moreover, and critically, the Troncoso definition provides *no criteria* for its application. It is not a methodology at all—just a sentence—which is why ██████ report described his methodology as adopting the Troncoso definition as a “basic” starting point and then “refin[ing]” it by creating his four-factor test. Rep. at 5. In the still-emerging computer science study of blockchain, with its active debates about what decentralization means and how to measure it (*see* Def. Br. at 4-5), *Daubert* and Rule 702 require any proffered computer science expert to provide a methodology that is “the product of reliable principles and methods” and “based on sufficient facts and data.” Fed. R. Civ. P. 702. It cannot be enough for ██████ to point to a one-sentence definition he likes out of the entire body of academic literature and simply declare that the XRPL doesn’t meet it. *See Gen. Elec. Co. v. Joiner*, 522 U.S. 136, 146 (1997) (“[N]othing in either *Daubert* or the Federal Rules of Evidence requires a district court to admit opinion evidence which is connected to existing data only by the *ipse dixit* of the expert.”); *Wilson*, 2016 WL 7229056, at *9 (excluding expert opinion supported “only with his own *ipse dixit*”).

³ To bolster ██████ unsupported claim that the Troncoso definition has “consensus,” the SEC offers lawyer argument that Troncoso’s definition is “perfectly consistent” with other decentralization definitions. (Opp. at 6). But that contention is directly at odds with ██████ own testimony. He acknowledged the existence of varying definitions of decentralization, and admitted that the comprehensive 2021 scientific paper from A.R. Sai *et al.* that he repeatedly cited in his report provided a “different” definition than Troncoso. Tr. 136:6-11; 137:24-138:7. In fact, the Sai study grappled with the existence of “multiple definitions and measurements,” “the lack of an encompassing framework,” and the absence of metrics needed to measure decentralization in blockchains. *See* ECF No. 542-5, A.R. Sai *et al.*, *Taxonomy of Centralization in Public Blockchain Systems: A Systematic Literature Review*, 58 INFO. PROCESSING & MGMT. 102584, at 1, 30 (Mar. 31, 2021). The Sai study also included a literature review of 89 research papers over 10 years to address the taxonomy of blockchain decentralization and it did not even deem the Troncoso definition (or paper) worthy of inclusion (*id.* at 1, 32-35), further evidence that ██████ claim of “consensus” for the Troncoso definition is *ipse dixit*.

Nor can the SEC salvage [REDACTED] decentralization opinion with a plea to his credentials. Opp. at 7. No matter how emphatically the SEC praises [REDACTED] qualifications, it is well-settled law that an expert's credentials cannot salvage an opinion that is based on unreliable methodology, as is the case here. *See Alto v. Sun Pharm. Indus., Inc.*, 2021 WL 4803582, at *7 (S.D.N.Y. Oct. 13, 2021) (excluding expert opinion "in the absence of some recognizable, describable methodology beyond an appeal to the expert's qualifications") (cleaned up); *Nimely v. City of New York*, 414 F.3d 381, 396 n.11 (2d Cir. 2005) ("The relevance and reliability inquiries . . . are separate from the threshold question of whether a witness is qualified as an expert.") (cleaned up).

II. [REDACTED] "Efforts" and "Disappearance" Opinions Are Unreliable and Should Be Excluded.

The methodology [REDACTED] used for his second and third opinions was not rigorous or reliable and, on that basis, the opinions should be excluded. As the SEC concedes, [REDACTED] conducted a partial review of one version of the XRPL's software code that post-dates the SEC's Complaint (without any testing and without himself ever using the XRPL) and, based on that partial review, opined that the XRPL might not function absent Ripple's "efforts" or if Ripple "disappeared." Report at 25-26. When shown additional XRPL software code at his deposition that he had not previously considered, [REDACTED] acknowledged it could affect his opinions. Tr. 160:25-161:4; 169:3-20.

The SEC tries to rectify the inadequacy of [REDACTED] methodology by asking the Court to do the analysis that [REDACTED] failed to do, submitting 77 new pieces of code that [REDACTED] did not consider in a six-page "Appendix A" attached to the SEC's brief and asking the Court to examine it and determine whether it is "materially identical" to the code [REDACTED] did review. The SEC doesn't define "materially identical," and it is not proper for the Court to wade through

77 new pieces of computer code outside of ██████ work on the case during discovery to test counsel's assertions. *See LaSalle Bank Nat'l Ass'n v. CIBC Inc.*, 2012 WL 466785, at *9 (S.D.N.Y. Feb. 14, 2012) (excluding opinions not set forth in an expert's report). This attempted fix only confirms that ██████ existing opinions rest on an inadequate methodological basis. And it is too late to fix. The Court should disregard this additional, improperly submitted material. Rules 26 and 37 bar supplementation of ██████ expert report at the *Daubert* stage. *See Fed. R. Civ. P. 26(a)(2)(B)* (requiring expert's report to disclose all opinions and all facts considered); *Fed. R. Civ. P. 37(c)(1)* (providing that a party is "not allowed" to supply evidence not disclosed in compliance with Rule 26 in connection with a motion).⁴ Moreover, the "Appendix" is not even presented as a supplemental expert report; rather the SEC asks the Court "via [counsel] memorandum" to accept "argument which is necessarily expert testimony that cannot be cross-examined." *See Graessle v. Nationwide Credit Inc.*, 2007 WL 1514003, at *15 (S.D. Ohio May 22, 2007). This is wholly improper.

In addition, ██████ third opinion—that if Ripple disappeared, certain XRPL validators "might" stop operating, such that risks to the XRPL "may" arise (Rep. at 25-26)—should be excluded as rife speculation. The SEC invokes the unremarkable proposition that experts may be asked hypothetical questions (Opp. at 14) but fails to address that ██████ response to the hypothetical question was premised on no methodology, no data, no facts, and no studies. Although his report identifies some companies and universities with historical ties to Ripple, ██████ offers nothing to support his speculation about the behavior of those entities, nor could he. He spoke to none, collected no data, cited no studies, has no experience operating an XRPL

⁴ This is not the first time the SEC has improperly attempted to supplement an expert's report in this litigation. *See ECF No. 469, Order*, at 4 (sanctioning the SEC pursuant to Rule 37 for having "conducted itself improperly by serving an unauthorized supplemental report on the last day of discovery").

validator, and cited no practical experience with university grant funding. Tr. 356:24-357:17; 358:10-360:10. He even doubted his own ability to offer the heavily caveated opinion he provides. Tr. 354:22-25 (“I am not sure even that I am an expert to quantify that risk”); 359:4-6 (“I’m not saying it will happen, I’m saying it might happen.”). This requires exclusion. *See United States v. Percoco*, 2018 WL 879499, at *3-*8 (S.D.N.Y. Feb. 13, 2018) (expert opinion about what someone “‘might’ do,” unsupported by studies, facts or data, was “pure conjecture” for which exclusion was required, lest the court “abandon[] [its] role as a gatekeeper”).

III. ██████████ Testimony Is Not Relevant and Should Be Excluded Under Rule 403.

The pleadings in this case establish that decentralization of the XRPL is an uncontested fact: the SEC alleged the XRP Ledger was decentralized technology in its Complaint; Defendants’ Answer did as well. ECF No. 46, ¶ 382; ECF No. 51, ¶ 13. The SEC does not deny this. This fact settles that ██████████ opinion is wholly irrelevant. The SEC also does not claim that “decentralization” is relevant to any of its own claims in this action. Rather, the SEC tries to shoehorn ██████████ testimony into the case by arguing it is relevant “to rebut Defendants’ defenses,” supposedly because ██████████ testimony concerns either the “economic realities” of whether XRP is decentralized, or the meaning of decentralization in a speech given by former SEC Director William Hinman in 2018. Opp. at 14. Not so.

██████████ expressly disavowed having any opinion on either of the two points the SEC raises. That is dispositive of this issue. On the first point, ██████████ admitted that he has no degree or training in economics and no qualifications to offer any opinion about economic realities, and he offered no such opinion. Tr. 93:18-22. On the second, ██████████ testified that he is not offering any opinion on what the Hinman Speech means or on what the SEC (through Director Hinman or anyone else) or any other U.S. regulator may have meant when using the

term “decentralization.”⁵ The SEC’s current assertion (Opp. at 3-4) that Hinman was not talking about technical blockchain decentralization in his Speech only further confirms the irrelevance of [REDACTED] technical, computer science testimony.⁶ [REDACTED] testimony also has absolutely nothing to do with the internal Ripple communications that the SEC gratuitously attached to its brief; [REDACTED] never saw them or opined about them.

[REDACTED] testimony will, however, confuse the trier of fact and prejudice Defendants. His unreliable opinions about the computer science meaning of decentralization, and his speculation about Ripple’s hypothetical demise, will serve only to confuse the jury and lead it to find against Defendants based on improper considerations about what might result if Ripple disappears. His testimony has no relevance at all, and even if it were relevant, it would be far outweighed by those undue risks of confusion and prejudice. *See In re Rezulin Prods. Liab. Litig.*, 309 F. Supp. 2d 531, 545 (S.D.N.Y. 2004) (excluding testimony under Rule 403 that would “likely” confuse the jury “by introducing the ‘experts’ opinions and rhetoric” as

⁵ Tr. 220:7-23 (“Q. . . . Are you offering any opinion in this case regarding how the term ‘decentralized’ has been used by the SEC as relates to blockchain systems? A. I do not. . . . Q. I take it, then, you’re also not offering an opinion regarding what any SEC employee may have meant or not in using the term ‘decentralized’? A. That is correct. Q. Okay. More broadly, are you offering an opinion about how any United States regulators have used the term ‘decentralized’? A. I’m definitely not an expert on U.S. regulations. And, no, I’m not doing that.”).

⁶ The Opposition Brief is the SEC’s latest attempt of many to interpret and rewrite the Hinman Speech. *See also, e.g.*, ECF Nos. 255, 351, 473, 575 (prior, conflicting characterizations of the Hinman Speech); ECF No. 531, at 6 (Judge Netburn writing that the SEC’s inconsistent approach to the Hinman Speech “suggests that the SEC is adopting its litigation positions to further its desired goal, and not out of a faithful allegiance to the law”). The SEC now contends that when he said “sufficiently decentralized,” Hinman was actually talking about whether the “entire ecosystem” was “sufficiently dispersed”—swapping in new terms that Hinman never used in the Speech, while distancing itself from his statement regarding the Ethereum blockchain. Opp. at 3-4. The SEC’s ever-changing approach to the Hinman Speech’s meaning and import has been on broad public display in this case, yet ironically, the SEC dismisses out-of-hand Defendants’ allegation that the Speech caused confusion. *Id.* at 4.

“alternative and improper grounds for decision on bases other than the pertinent legal standard.”).

CONCLUSION

For the foregoing reasons, [REDACTED] testimony should be excluded in its entirety.

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Respectfully submitted,

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