No. 14-___

IN THE

Supreme Court of the United States

STEPHEN DOMINICK MCFADDEN,

Petitioner,

v.

UNITED STATES OF AMERICA,

Respondent.

On Petition for a Writ of Certiorari
to the United States Court of Appeals
for the Fourth Circuit

PETITION FOR A WRIT OF CERTIORARI

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QUESTIONS PRESENTED

Federal law criminalizes "knowingly or intentionally" manufacturing, distributing, or dispensing "a controlled substance." 21 U.S.C. § 841(a). Prohibited "controlled substance[s]" ordinarily are listed in schedules updated through notice-and-comment rulemaking. *See id.* §§ 802(6), 811-12. However, the Controlled Substance Analogue Enforcement Act of 1986 provides that a "controlled substance analogue" also shall be treated as a Schedule I controlled substance. 21 U.S.C. § 813. A "controlled substance analogue" is defined as a substance with a chemical structure that is "substantially similar" to a schedule I or II drug and has a "substantially similar" effect on the user (or is believed or represented by the defendant to have such a similar effect). *Id*. § 802(32)(A). The Government does not publish lists of controlled substance analogues; instead, it prosecutes individuals who sell what prosecutors believe to be substances meeting the statutory definition, leaving lay juries to decide whether any given alleged analogue is substantially similar in chemical structure and effect to a scheduled controlled substance, often on the basis of conflicting expert testimony.

The Question Presented is:

Whether, to convict a defendant of distribution of a controlled substance analogue, the government must prove that the defendant knew that the substance constituted a controlled substance analogue, as held by the Second, Seventh, and Eighth Circuits, but rejected by the Fourth and Fifth Circuits.

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PETITION FOR A WRIT OF CERTIORARI

Petitioner Stephen Dominick McFadden respectfully petitions for a writ of certiorari to review the judgment of the United States Court of Appeals for the Fourth Circuit.

OPINIONS BELOW

The opinion of the United States Court of Appeals for the Fourth Circuit (Pet. App. 1a-27a) is published at 753 F.3d 432. The district court's opinion (Pet. App. 44a-68a) is unpublished, but available at 2013 WL 8339005.

JURISDICTION

The judgment of the court of appeals was entered on May 21, 2014. Pet. App. 1a. The court of appeals denied petitioner's timely petition for rehearing en banc on June 17, 2014. Pet. App. 69a. On August 21, 2014, the Chief Justice extended the time to file this petition through October 14, 2014. No. 14A199. This Court has jurisdiction pursuant to 28 U.S.C. § 1254(1).

RELEVANT STATUTORY PROVISIONS

Section 841(a) of Title 21 provides in relevant part:

(a) Unlawful acts

Except as authorized by this subchapter, it shall be unlawful for any person knowingly or intentionally –

(1) to manufacture, distribute, or dispense, or possess with intent to manufacture, distribute, or dispense, a controlled substance . . . .

Section 813 of Title 21 provides:

A controlled substance analogue shall, to the extent intended for human consumption, be treated, for the purposes of any Federal law as a controlled substance in schedule I.

Section 802(32) of Title 21 provides:

(A) Except as provided in subparagraph (C), the term "controlled substance analogue" means a substance--

(i) the chemical structure of which is substantially similar to the chemical structure of a controlled substance in schedule I or II;

(ii) which has a stimulant, depressant, or hallucinogenic effect on the central nervous system that is substantially similar to or greater than the stimulant, depressant, or hallucinogenic effect on the central nervous system of a controlled substance in schedule I or II; or

(iii) with respect to a particular person, which such person represents or intends to have a stimulant, depressant, or hallucinogenic effect on the central nervous system that is substantially similar to or greater than the stimulant, depressant, or hallucinogenic effect on the central nervous system of a controlled substance in schedule I or II.

(B) The designation of gamma butyrolactone or any other chemical as a listed chemical pursuant to paragraph (34) or (35) does not preclude a finding pursuant to subparagraph (A) of this paragraph that the chemical is a controlled substance analogue.

(C) Such term does not include--

(i) a controlled substance;

(ii) any substance for which there is an approved new drug application;

(iii) with respect to a particular person any substance, if an exemption is in effect for investigational use, for that person, under section 355 of this title to the extent conduct with respect to such substance is pursuant to such exemption; or

(iv) any substance to the extent not intended for human consumption before such an exemption takes effect with respect to that substance.

STATEMENT OF THE CASE

This case presents the Court an opportunity to resolve an acknowledged and long-standing 3-2 circuit conflict over the scienter requirement for criminal violation of the Controlled Substance Analogue Enforcement Act of 1986 (Analogue Act), Pub. L. No. 99-570, tit. I, § 1202, 100 Stat. 3207-13.

I. Legal Background

Federal law criminalizes "knowingly or intentionally" manufacturing, distributing, or dispensing "a controlled substance." 21 U.S.C. § 841(a). The statute defines a "controlled substance" as a substance listed on a schedule described in the statute, as those schedules may be amended by the Attorney General through notice-and-comment rulemaking. *See* 21 U.S.C. §§ 802(6), 811-12. Accordingly, anyone wishing to know whether a particular substance is a prohibited controlled substance may consult the Code of Federal Regulations or the Department of Justice's website. *See* 21 C.F.R. §§ 1308.11-1308.15; Office of Diversion Control, Drug Enforcement Admin. (DEA), *Lists of: Scheduling Actions[,] Controlled Substances[,] Regulated Chemicals* (2014), *available at* http://www.deadiversion.usdoj.gov/schedules/orangebook/orangebook.pdf.

In 1984, Congress gave the Attorney General emergency authority to add new substances to schedule I on an expedited basis whenever he finds that doing so "is necessary to avoid an imminent hazard to the public safety." 21 U.S.C. § 811(h)(1).

Two years later, Congress supplemented that power through the Analogue Act. The new statute

provided that a "controlled substance analogue shall, to the extent intended for human consumption, be treated for the purposes of any Federal law as a controlled substance in schedule I." 21 U.S.C. § 813. Consequently, distribution of a controlled substance analogue is punishable by up to twenty years' imprisonment (or, if death or substantial bodily injury results, a mandatory minimum sentence of twenty years and up to life imprisonment). *Id.* § 841(b)(1)(C).

As relevant here, a "controlled substance analogue" is defined as a substance:

> (i) the chemical structure of which is *substantially similar* to the chemical structure of a controlled substance in schedule I or II;
>
> (ii) which has a stimulant, depressant, or hallucinogenic effect on the central nervous system that is *substantially similar* to or greater than the stimulant, depressant, or hallucinogenic effect on the central nervous system of a controlled substance in schedule I or II; or
>
> (iii) with respect to a particular person, which such person represents or intends to have a stimulant, depressant, or hallucinogenic effect on the central nervous system that is *substantially similar* to or greater than the stimulant, depressant, or hallucinogenic effect on the central nervous system of a controlled substance in schedule I or II.

21 U.S.C. § 802(32)(A) (emphasis added).[1]

Unlike controlled substances, the Attorney General is not required to define and publicize in advance what constitutes a controlled substance analogue. As a consequence, a "substance's legal status as a controlled substance analogue is not a fact that a defendant can know conclusively *ex ante*; it is a fact that the jury must find at trial." *United States v. Turcotte*, 405 F.3d 515, 526 (7th Cir. 2005). Generally, to decide whether a substance is "substantially similar" to a scheduled controlled substance, juries must resolve the conflicting claims of expert witnesses on complex matters of scientific methodology, chemistry, and biology. *See, e.g.*, *United States v. Brown*, 415 F.3d 1257, 1261-63 (11th Cir. 2005) (describing relevant testimony in one trial); *United States v. Forbes*, 806 F. Supp. 232, 237 (D. Colo. 1992) (noting defendant was prosecuted despite fact that the "government's own chemists cannot agree" on whether the substance at issue met the "substantial similarity" test, perhaps in part because the "scientific community cannot even agree on a methodology to use to determine structure similarity").

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[1] The definition also sets out certain exclusions that are not relevant to this case. *See id*. §§ 802(32)(B)-(C). Although the statute is confusingly worded, the "vast majority of federal courts" construe it to require the government to satisfy subsection (i) *and* either subsection (ii) or (iii). Pet. App. 47a n.2 (quoting *United States v. Turcotte*, 405 U.S. 515, 522 (7th Cir. 2005) (collecting cites)).

II. Factual And Procedural Background

1. In 2007, petitioner, a construction worker, began operating a small business buying overstocked items and reselling them on the internet. *See* C.A. J.A. 634, 814, 842. In early 2011, he noticed that a variety of businesses in his Staten Island neighborhood were openly selling products referred to as "bath salts" that petitioner believed to be aroma therapy products that, when burned, produced a stimulating vapor. *See id*. 633, 634-37, 842-44.

Prior to selling bath salts himself, on the advice of his brother, a federal Immigration and Customs Enforcement officer, petitioner researched the legality of the substances by examining the online list of controlled substances on the DEA's website. *See* C.A. J.A. 633, 635, 638-39, 844-46. Finding nothing to indicate that the substance he intended to sell were illegal, petitioner began selling bath salts containing various ingredients. *See id.* 634-39, 846-47. When the Government subsequently listed two of the compounds in some of his products on the controlled substances schedule, petitioner flushed his supply of the affected products down the toilet. *See id*. 640-41.[2] And when an undercover DEA agent subsequently attempted to purchase the illegal

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[2] In October 2011, the DEA used its emergency scheduling authority to classify several chemical compounds found in some bath salts as schedule I controlled substances. *See* Pet. App. 6a n.2, 45a n.1; *see also* Michael McLaughlin, *Bath Salts Incidents Down Since DEA Banned Synthetic Drug*, Huffington Post (Sep. 4, 2012), http://www.huffingtonpost.com/2012/09/04/bath-salts-ban_n_1843420.html.

substances from him, petitioner refused on the ground that the compounds were illegal. *See id*. 847-50.

2. Nevertheless, in November, 2012, a grand jury indicted petitioner for distributing, and conspiring to distribute, products containing 4–methylethyl-cathinone, 3, 4–methylenedioxypyrovalerone, and/or 3, 4–methylenedioxymethcathinone. Pet. App 5a. During the relevant time periods, none of these substances was listed as a controlled substance. *Id*. 6a n.2, 45a & n.1. The Government nonetheless insisted that these compounds were substantially similar to controlled substances, and therefore that petitioner had committed a criminal violation of the Analogue Act.

The ensuing "four-day jury trial focused primarily on the issue [of] whether" the chemicals at issue "constitute[d] controlled substances analogues." Pet. App. 7a. The jury heard from competing expert witnesses, including a chemist, a drug science specialist, and a pharmacist. *Id*. 7a-8a. The experts based their conflicting conclusions in significant part on their review of the scientific literature, animal studies, and their own analyses of the chemical structure of the substances. *Id*. 11a-12a, 24a, 64a-65a. The parties' experts disagreed about how to compare chemicals for "substantial similarity," whether the chemicals were in fact "substantially similar," and even on whether scientists can offer an opinion on "substantial similarity," when that phrase is not a scientific term. *See, e.g.*, Pet. App. 7a-8a, 24a, 64a-66a; C.A. J.A. 523-25, 551-53, 557, 574-78.

At the close of evidence, the district court rejected petitioner's request that the jury be

instructed that the Government was "required to prove that he knew, had a strong suspicion, or deliberately avoided knowledge that the [substances at issue] possessed the characteristics of controlled substance analogues." Pet. App. 21a. Instead, over petitioner's objection, the court gave a jury instruction under which the only state of mind requirement relating to the nature of the substance was that petitioner "intended for the mixture or substance to be consumed by humans." *Id.* 56a.[3]

After the jury convicted petitioner on all counts, the district court denied petitioner's motion for judgment of acquittal. Pet. App. 44a-68a. As relevant here, the court rejected petitioner's claim that the Analogue Act was unconstitutionally vague

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[3] Specifically, the court instructed the jury that it must find:

> FIRST: That the defendant knowingly and intentionally distributed a mixture or substance that has an actual, intended, or claimed stimulant, depressant, or hallucinogenic effect on the central nervous system that is substantially similar to or greater than the stimulant, depressant, or hallucinogenic effect on the central nervous system of a controlled substance in Schedule I or II of the Controlled Substances Act;
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> SECOND: That the chemical structure of the mixture or substance is substantially similar to the chemical structure of a controlled substance in Schedule I or II of the Controlled Substances Act; and
>
> THIRD: That the defendant intended for the mixture or substance to be consumed by humans.

Pet. App. 56a.

as applied to him. *Id*. 46a-54a. It further rejected petitioner's argument that the court had improperly instructed the jury on the elements of a controlled substance analogue offense. *Id*. 54a-61a. The court acknowledged that the instructions did not require the Government to prove that petitioner "knew that the alleged analogues have a chemical structure that is substantially similar to the chemical structure of a controlled substance and, thus, that they were, in fact, controlled substance analogues under the Act." *Id*. 57a-58a. But it concluded that it was bound by the Fourth Circuit's decision in *United States v. Klecker*, 348 F.3d 69 (4th Cir. 2003), which it read to require proof only that the substance in question was intended for human consumption. Pet. App. 57a.

The district court recognized that this interpretation of the statute, while consistent with the law of the Fourth and Fifth Circuits, conflicted with precedent from the Seventh Circuit. *See id*. 58a.

2. The Fourth Circuit affirmed. Pet. App. 2a. The court agreed with the district court that under its prior decision in *Klecker*, the only "scienter requirement" for an Analogue Act conviction is "that the defendant intended that the substance at issue be consumed by humans." *Id*. 22a. As a consequence, the court reaffirmed, "the Act may be applied to a defendant who lacks actual notice that the substance at issue could be a controlled substance analogue." *Id*.

The court acknowledged that in "contrast to our decision in *Klecker*, the Seventh Circuit has imposed a strict knowledge requirement before a defendant may be convicted of violating the Act," demanding proof that "the defendant knew the substance in

question was a controlled substance analogue." Pet. App. 22a (quoting *Turcotte*, 405 F.3d at 527). But "[b]ecause we have not imposed such a knowledge requirement," the Fourth Circuit held, "the district court properly denied McFadden's requested jury instruction." *Id.*[4]

3. The Fourth Circuit subsequently denied a timely petition for rehearing. Pet. App. 69a.

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[4] The court also rejected petitioner's other claims on appeal, including his argument that the statute was unconstitutionally vague as applied to him in this case. Pet. App. 9a-16a.

REASONS FOR GRANTING THE WRIT

As the district court and court of appeals both acknowledged, the mental state required to commit a violation of the Controlled Substance Analogue Enforcement Act is the subject of a long-standing circuit conflict. In fact, division is deeper than the courts below acknowledged: three circuits hold that the defendant must know that the substance he distributed was a controlled substance analogue, while two others have directly rejected that rule. The circuit conflict compounds the risk of arbitrary treatment already endemic in the statute, under which the lawfulness of distributing any given alleged analogue is decided on a case-by-case basis by lay jurors under a vague "substantial similarity" standard, relying on competing expert testimony regarding complex scientific questions. This case presents the Court an ideal opportunity to resolve that uncertainty and diminish the risk of arbitrary treatment by correcting the Fourth Circuit's unduly narrow construction of the statute's scienter element.

I. The Circuits Are Divided 3-2 Over The Mental State Required For A Criminal Violation Of The Controlled Substance Analogue Act.

The Analogue Act does not itself directly criminalize sale of analogues. Instead, it directs that a "controlled substance analogue shall, to the extent intended for human consumption, be treated, for the purposes of any Federal law as a controlled substance in schedule I." 21 U.S.C. § 813. Accordingly, the elements of criminal distribution of an analogue arise from two sources: (1) the Analogue Act itself (which

defines "controlled substance analogue" and provides, as just quoted, that the analogue must be "intended for human consumption"); and (2) the general criminal distribution provision of the Controlled Substances Act, 18 U.S.C. § 841(a).

Section 841(a), in turn, provides that "it shall be unlawful for any person *knowingly* or *intentionally*" to distribute "a controlled substance." *Id*. (emphasis added). To knowingly or intentionally distribute a controlled substance like cocaine, the lower courts have held, the defendant "must know that the substance in question is a controlled substance," that is, that the substance "was some kind of prohibited drug." *United States v. Turcotte*, 405 F.3d 515, 525 (7th Cir. 2005).[5] Under this standard, it is not necessary that the defendant "know the *type* of controlled substance he possesses." *Id*. (emphasis added) (quoting *United States v. Barlow*, 310 F.3d 1007, 1012 (7th Cir. 2002)). But he must know that the substance he possesses is *a* controlled substance. *Id*.

The courts are divided, however, over whether and how to apply this standard to controlled substance analogues. The circuits fall into two basic camps.

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[5] *See also, e.g.*, *United States v. Serrano-Lopez*, 366 F.3d 628, 634 (8th Cir. 2004); *United States v. Gamez-Gonzalez*, 319 F.3d 695, 700 (5th Cir. 2003); *United States v. Kairouz*, 751 F.2d 467, 468-69 (1st Cir. 1985); *United States v. Morales*, 577 F.2d 769, 775-76 (2d Cir. 1978); *United States v. Jewell*, 532 F.2d 697, 698 (9th Cir. 1976).

The Majority Rule. The Second, Seventh, and Eighth Circuits hold that the defendant must know that the substance in question is a controlled substance analogue (and thus, by definition, a controlled substance). *See United States v. Roberts*, 363 F.3d 118, 123 n.1 (2d Cir. 2004) (prosecution in analogue case must prove defendants acted "with the knowledge that they were in possession of a controlled substance"); *United States v. Turcotte*, 405 F.3d 515 (7th Cir. 2005) (the "defendant must know that the substance at issue meets the definition of a controlled substance analogue set forth in § 802(32)(A)"); *United States v. Sullivan*, 714 F.3d 1104, 1107 (8th Cir. 2013) (the jury must find that the defendant "knew he was in possession of a controlled substance analogue").[6]

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[6] In one passage of its decision in *Turcotte*, the Seventh Circuit seemingly suggested that its standard is different from the one applied by the Second Circuit in *Roberts*. *See* 405 F.3d at 526-27. But that disagreement appears to be based on an unduly strict interpretation of the Second Circuit's opinion. That is, the Seventh Circuit noted that *Roberts* requires proof that the defendants knew "they were in possession of a *controlled substance*." *Id*. at 526 (emphasis added) (quoting *Roberts*, 363 F.3d at 123 n.1). The Seventh Circuit remarked that read literally, this standard "is nonsensical since controlled substance analogs are, by definition, not 'controlled substances'" but rather are sufficiently similar to controlled substances to meet the definition of a "controlled substance analogue." Turcotte, 405 F.3d at 526. But precisely because that reading would make no sense, the Second and Eighth Circuit's decisions are better read to apply the same standard as the Seventh, requiring that the defendant know that he is possessing a controlled substance *in the sense that* he knows he is possessing a substance that has the features required to make it a

These courts have explained that their reading is consistent with the general scienter requirement of the Controlled Substances Act and also serves to mitigate the vagueness concerns that would otherwise arise under the statute. *See Turcotte*, 405 F.3d at 527; *Roberts*, 363 F.3d at 123 & n.1.

The Minority Rule. The Fourth and Fifth Circuits have rejected the majority rule.

In this case, for example, the Fourth Circuit directly rejected petitioner's assertion "that the district court erred in refusing to instruct the jury that the government was required to prove that he knew, had a strong suspicion, or deliberately avoided knowledge that the alleged CSAs possessed the characteristics of controlled substance analogues." Pet. App. 21a. Instead, the Fourth Circuit emphasized that the statute's *only* scienter element going to the nature of the substances was the requirement that the defendant intend the substance to be consumed by humans. *Id*.; *see also id*. 4a. Accordingly, as one district court in the Fourth Circuit has put it, citing the decision in this case, in "an Analogue Act prosecution, a defendant's knowledge that a substance possesses the characteristics of a controlled substance analogue is

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controlled substance analogue, which the statute then treats as a controlled substance. *See, e.g.*, *United States v. Franklin*, No. 12-03085-01/10-CR-S-MDH, 2014 WL 1953077, at * 7 (W.D. Mo. May 15, 2014) (explaining that the "Eighth Circuit has adopted the Seventh Circuit's requirement, first explained in *United States v. Turcotte*, that the defendant must have known that the substance(s) at issue was a controlled substance analogue").

not a prerequisite for conviction." *United States v. Dau*, No. 7:13-cr-00082, 2014 WL 4187327, at *4 (W.D. Va. Aug. 22, 2014).

The Fifth Circuit has likewise rejected the claim that the Government must prove the defendant's knowledge that the substance he distributed was a controlled substances analogue. In *United States v. Desurra*, 865 F.2d 651 (5th Cir. 1989), the defendant argued that the Government was required to prove that he "understood MDMA [the alleged analogue] to be a chemical analogue of MDA [a scheduled controlled substance]." *Id*. at 653. The Fifth Circuit concluded that this "argument misunderstands the intent requisite to convictions under" the Analogue Act. *Id*. "If a defendant possesses an analogue, with intent to distribute or import, the defendant need not know that the drug he possesses is an analogue." *Id*. Instead, it "suffices that he know what drug he possesses and that he possess it with the statutorily defined bad purpose," *i.e.*, with intent to distribute or import it. *Id*.;[7] *see also United States v. Petree*, No. 13-50946, 2014 WL 4413263, at *1 (5th Cir. Sep. 9, 2014) (rejecting claim that district court committed reversible plain error by failing to find that the defendant "knew the substances were controlled substance analogues" because under *Desurra* if "a defendant possesses an analogue, with intent to distribute . . . defendant need not know that the drug

[7] The court acknowledged elsewhere in its opinion that the defendant must also intend that the substance be used for human consumption, consistent with the Fourth Circuit's rule. *See id*. at 654.

. . . is an analogue") (alteration in original) (quoting *Desurra*, 865 F.2d at 653 (alteration in original)).

II. The Circuit Conflict Warrants This Court's Review.

The circuit conflict is intolerable and should be resolved by this Court in this case.

The question that divides the circuits is recurring and important. The Government has acknowledged that it frequently prosecutes individuals under the Analogue Act rather than wait even the limited time required to invoke the emergency procedures Congress provided for expedited listings of new controlled substances.[8] As the broad circuit conflict illustrates, the proper construction of the Act's scienter element is a critical question in such prosecutions.

Moreover, the division among the circuits could hardly be more stark – three circuits hold that the Government must prove that the defendant knew he was possessing a substance that has the characteristics required by statute for classification as a controlled substance analogue, while two others

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[8] *See, e.g.*, *DEA News: Huge Synthetic Drug Takedown* (May 7, 2014), http://wew.justice.gov/dea/divisions/hq/2014/hq050714.shtml (noting that prosecutions under the Analogue Act "have grown steadily in recent years."); Lisa N. Sacco & Kristin Finklea, Cong. Research Serv., *Synthetic Drugs: Overview and Issues for Congress* 17 (Aug. 15, 2014), *available at* http://fas.org/sgp/crs/misc/R42066.pdf ("Over the last several years, the DEA has led major enforcement efforts against the synthetic drug industry," a number of which rely on the Analogue Act for prosecution).

hold that the Government need prove nothing about the defendant's knowledge of the nature of the substance he possesses, only that he intend for it to be consumed by humans.

There is no genuine prospect of the circuit conflict being resolved without this Court's intervention. The disagreement among the circuits is widely acknowledged. *See, e.g.*, Pet. App. 22a (court of appeals acknowledging conflict between Fourth and Seventh Circuits); *id*. 55aa (district court acknowledging conflict between Fourth, Fifth, and Seventh Circuits); *Turcotte*, 405 F.3d at 526 (describing various approaches among the courts); Gregory Kau, *Flashback to the Federal Analog Act of 1986: Mixing Rules and Standards in the Cauldron,* 156 U. PA. L. REV. 1077, 1106-07 (2008) (student comment) (discussing split); Hari K. Sathappan, *Slaying the Synthetic Hydra: Drafting A Controlled Substances Act That Effectively Captures Synthetic Drugs*, 11 OHIO ST. J. CRIM. L. 827, 840 & nn.90-92 (2014) (student note) (same).

There is no trajectory toward uniformity. Indeed, the Fourth Circuit adopted the minority position in this case even while acknowledging it was in conflict with the Seventh Circuit's *Turcotte* decision. *See* Pet. App. 22a. Petitioner asked for rehearing en banc, pointing to the circuit conflict, *see* Pet. for Reh'g En Banc § I, but the petition was denied, *see* Pet. App. 69a. At the same time, there is no reason to think that all three circuits on the other side of the conflict will grant rehearing en banc and reverse course, particularly given the Seventh Circuit's thoughtful consideration of the alternative

interpretations of the statute. *See Turcotte*, 405 F.3d at 526.

Finally, further percolation would serve no purpose. The conflict has existed for a decade and the arguments on both sides have been thoroughly explored. There is every reason to expect that the remaining circuits will simply pick sides without providing any additional insight.

III. The Fourth Circuit's Decision Is Wrong.

The decision below also warrants review because it is wrong, ignoring the plain language of the statute and long-standing legal tradition, while unnecessarily casting grave constitutional doubt on the Analogue Act.

1. The Fourth Circuit's narrow scienter requirement ignores that the intent element for an analogue substances conviction is set forth in two separate provisions of the Controlled Substances Act. The Fourth Circuit focused on Section 813, which provides that controlled substance analogues are to be treated as schedule I controlled substances to the extent "intended for human consumption." 21 U.S.C. § 813; *see* Pet. App. 3a-4a; *Klecker*, 348 F.3d at 71. But Section 813 does not itself make possession or distribution of controlled substance analogues a crime, even if intended for human consumption. It simply directs that an analogue be treated like any other controlled substance, the possession and sale of which is prohibited by Section 841(a). And Section 841(a) does not criminalize all sale or possession of controlled substances – it makes it a crime "*knowingly* or *intentionally* . . . to manufacture, distribute, or dispense, or possess with intent to

manufacture, distribute, or dispense, a controlled substance." (emphasis added).

"As a matter of ordinary English grammar, it seems natural to read [a] statute's word 'knowingly' as applying to all the subsequently listed elements of the crime." *Flores-Figueroa v. United States*, 556 U.S. 646, 650 (2009). This is particularly true of a criminal statute. *Id*. at 652 ("[C]ourts ordinarily read a phrase in a criminal statute that introduces the elements of a crime with the word 'knowingly' as applying that word to each element."). Consequently, Section 841(a) is most reasonably read to require not only that the defendant know that he is distributing *something* (which he may or may not know is a controlled substance) but also that he know that the *something* has the characteristics that render it an illegal controlled substance.

That conclusion is buttressed by legal tradition. Congress enacted the Analogue Act against the backdrop of this Court's practice of construing "criminal statutes to include *broadly applicable* scienter requirements." *United States v. X-Citement Video, Inc.*, 513 U.S. 64, 70 (1994) (emphasis added). Absent significant reason to believe that Congress intended otherwise, "a conventional *mens rea* element . . . require[s] that the defendant know the facts that make his conduct illegal." *Staples v. United States*, 511 U.S. 600, 605 (1994); *see also Dixon v. United States*, 548 U.S. 1, 5 (2006) ("[U]nless the text of the statute dictates a different result, the term 'knowingly' merely requires proof of knowledge of the facts that constitute the offense." (quoting *Bryan v. United States*, 524 U.S. 184, 193 (1998) (footnote omitted))); *Rogers v. United States*, 522 U.S.

252, 254-55 (1998) (plurality) (applying presumption to federal firearms statute).

Accordingly, in *Staples*, this Court interpreted a federal statute that criminalized possession of an unregistered "machinegun." 511 U.S. at 602 (describing 26 U.S.C. § 5845(a)(6)). The statute defined a "machingun" as a weapon that shoots "automatically more than one shot, without manual reloading, by a single function of the trigger." *Id*. (quoting 26 U.S.C. § 5845(b)). Although the statute did not contain an express mens rea element, this Court held that one was reasonably implied. *Id*. at 605-06. Consistent with tradition, that mens rea element required that the defendant "knew the weapon he possessed had the characteristics that brought it within the statutory definition of a machine gun." *Id*. at 602. Thus, if the defendant knew he possessed a rifle, but did not know that it would fire multiple rounds with a single pull of the trigger, he could not be convicted of knowingly possessing an unregistered machinegun. He might have knowingly possessed a rifle, which was in fact a machine gun; but he could not knowingly possess a machine gun unless he was knew that it had the features (*i.e.*, the capacity to fire multiple rounds with a single trigger pull) that makes owning it potentially illegal.

The same reasoning applies to controlled substance analogues. It is not enough that the defendant know he possesses a particular compound that (unbeknownst to him) constitutes a controlled substance analogue. He must know that the substance "he possessed had the characteristics that brought it within the statutory definition" of a

controlled substance analogue, *Staples*, 511 U.S. at 602, namely that it is substantially similar in chemical structure and effect to a schedule I controlled substance. After all, that substantial similarity is the "fact[] that make[s] his conduct illegal." *Id*. at 605. To hold a criminal defendant strictly liable for the chemical structure and effects on a substance in his possession is no different from holding a defendant strictly liable for the operation of his firearm.

If there were any ambiguity in the statute, it would be resolved in favor of lenity. *See, e.g.*, *United States v. Wiltberger*, 18 U.S. 76, 95 (1820) ("The rule that penal laws are to be construed strictly, is perhaps not much less old than construction itself.").

2. A narrower scienter requirement, although facilitating prosecutions, could cast serious constitutional doubt on the Analogue Act.

The Due Process Clause requires that "a penal statute define the criminal offense with sufficient definiteness that ordinary people can understand what conduct is prohibited and in a manner that does not encourage arbitrary and discriminatory enforcement." *Kolender v. Lawson*, 461 U.S. 352, 357 (1983). The Analogue Act gives rise to those risks in spades. Congress defined the unlawful conduct in opaque terms, based on criteria that are generally inaccessible to ordinary citizens. The critical phrase "substantially similar" is inherently uncertain. That is doubtless why legislatures rarely criminalize "trespassing and substantially similar conduct" or sales of "machineguns and substantially similar weapons." The vagueness difficulty is only exacerbated by defining the illegal conduct through

reference to a substance's chemical structure, a fact (unlike the mechanics of a firearm) that cannot easily be determined without the use of sophisticated equipment and analysis.

Moreover, even if one knows the chemical structure of a substance and its allegedly similar controlled substance counterpart, the DEA itself has acknowledged to congressional researchers that the "threshold for 'substantially similar' is subjective and may differ from expert to expert."[9] In fact, the "scientific community cannot even agree on a methodology to use to determine structure similarity." *United States v. Forbes*, 806 F. Supp. 232, 237 (D. Colo. 1992). That is hardly surprising – "substantial similarity" is a legal construct, not a scientific term of art.

The risk of arbitrary enforcement is further enhanced by the fact that the substantial similarity test is applied not by an expert agency issuing regulations to provide citizens advanced notice of what the law requires, but by lay jurors after the

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[9] *See* Sacco & Finklea, *supra* note 8, at 16. A DEA official likewise testified before Congress that substantial similarity is "by its nature an 'opinion' and therefore subject to opposing views from other expert chemists." *Bioterrorism, Controlled Substances, and Public Health Issues: Hearing Before the H. Subcomm. on Health, Comm. on Energy and Commerce*, 112th Cong. 17 (July 21, 2011) (statement of Joseph T. Rannazzisi, Deputy Assistant Administrator, Office of Diversion Control, DEA) (hereinafter "DEA Congressional Statement"), *available at* http://www.gpo.gov/fdsys/pkg/CHRG-112hhrg73892/pdf/CHRG-112hhrg73892.pdf.

fact, in decisions that have no effect beyond each individual case. *See* DEA Congressional Statement, *supra* note 9, at 17.

Accordingly, even if ordinary citizens could be expected to be able to discover the chemical structure of alleged analogue substances, they would still be left to guess whether the inevitable combination of similarities and dissimilarities render the substance "substantially similar" to a controlled substance in the minds of a jury faced with competing expert testimony. *Cf. Crutchfield v. Alaska*, 627 P.2d 196, 200 (Alaska 1980) (holding state controlled substance analogue statute unconstitutionally vague as applied where defendant "had no way of discovering the prohibited character of the drug until expert testimony at trial indicated that it had a composition similar to valium," a controlled substance).

In this context, a robust scienter requirement is imperative. A scienter element "may mitigate a law's vagueness, especially with respect to the adequacy of notice to the complainant that his conduct is proscribed." *Vill. of Hoffman Estates v. Flipside Hoffman Estates, Inc.*, 455 U.S. 489, 499 (1982). Contrary to the Fourth Circuit's position, *see Klecker*, 348 F.3d at 71, simply requiring proof that the defendant intended a substance for human consumption will not suffice. The Analogue Act permits sale for human consumption of a wide range of substances, criminalizing only sales of compounds that have a substantially similar chemical structure and effect as a controlled substance. Thus, the Fourth Circuit's interpretation still risks "impos[ing] criminal sanctions on a class of persons whose mental state – ignorance of the characteristics of the

[substances] in their possession – makes their actions entirely innocent." *Staples*, 511 U.S. at 614-15.

While some may be unsympathetic to those attempting to sell otherwise lawful products intended to produce altered psychological states – just as some disapprove of sales of alcohol, tobacco or, for that matter, firearms – we expect the law to clearly define the boundary between legal and illegal conduct, reserving criminal punishment for those who knowingly cross that line. Because the Fourth Circuit's interpretation of the Analogue Act fails that basic standard of our legal tradition, it should be reviewed and reversed.

CONCLUSION

For the foregoing reasons, the petition for a writ of certiorari should be granted.

Respectfully submitted,

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October 2, 2014

APPENDIX A

PUBLISHED

UNITED STATES COURT OF APPEALS
FOR THE FOURTH CIRCUIT

No. 13-4349

UNITED STATES OF AMERICA,
Plaintiff–Appellee,

v.

STEPHEN DOMINICK MCFADDEN, a/k/a Stephen Domin McFadden,
Defendant–Appellant.

Appeal from the United States District Court for the Western District of Virginia, at Charlottesville. Glen E. Conrad, Chief District Judge. (3:12-cr-00009-GEC-1)

Argued: March 19, 2014 Decided: May 21, 2014

Affirmed by published opinion. Judge Keenan wrote the opinion, in which Chief Judge Traxler and Judge Wilkinson joined.

ARGUED: J. Lloyd Snook, III, SNOOK & HAUGHEY, PC, Charlottesville, Virginia, for Appellant. Jean Barrett Hudson, OFFICE OF THE UNITED STATES ATTORNEY, Charlottesville, Virginia, for Appellee. **ON BRIEF:** Timothy J. Heaphy, United States Attorney, Roanoke, Virginia, Ronald M. Huber, Assistant United States Attorney, OFFICE OF THE UNITED STATES ATTORNEY, Charlottesville, Virginia, for Appellee.

BARBARA MILANO KEENAN, Circuit Judge:

This appeal concerns a defendant's convictions involving the sale of "designer drugs," in violation of the Controlled Substance Analogue Enforcement Act of 1986 (the Act), 21 U.S.C. §§ 802(32)(A), 813. Stephen D. McFadden was convicted by a jury of nine charges stemming from his distribution of substances that the government alleged were prohibited by the Act. On appeal, McFadden primarily asserts that the Act is unconstitutionally vague as applied to him, that the district court abused its discretion in making certain evidentiary rulings at trial, and that the government failed to prove that the substances McFadden distributed qualified as controlled substance analogues under the Act. Upon our review, we affirm the district court's judgment.

I.

Before addressing the facts of this case and McFadden's challenges to his convictions, we first provide a brief overview of the Act. Congress enacted

the Act to prevent "underground chemists" from creating new drugs that have similar effects on the human body as drugs explicitly prohibited under the federal drug laws. *See United States v. Klecker,* 348 F.3d 69, 70 (4th Cir. 2003); *see also United States v. Hodge,* 321 F.3d 429, 432, 437 (3d Cir. 2003) (purpose of the Act is to "make illegal the production of designer drugs and other chemical variants of listed controlled substances that otherwise would escape the reach of the drug laws"). To achieve that purpose, Congress mandated that a "controlled substance analogue," when intended for human consumption, be treated under federal law as a Schedule I controlled substance. 21 U.S.C. § 813.

Subject to certain exceptions not at issue in this case, a "controlled substance analogue" is defined under the Act as:

> a substance—
>
> (i) the chemical structure of which is substantially similar to the chemical structure of a controlled substance in schedule I or II;
>
> (ii) which has a stimulant, depressant, or hallucinogenic effect on the central nervous system that is substantially similar to or greater than the stimulant, depressant, or hallucinogenic effect on the central nervous system of a controlled substance in schedule I or II; or
>
> (iii) with respect to a particular person, which such person represents or intends to have a stimulant, depressant, or hallucinogenic effect on

> the central nervous system that is substantially similar to or greater than the stimulant, depressant, or hallucinogenic effect on the central nervous system of a controlled substance in schedule I or II.

21 U.S.C. § 802(32)(A).

Accordingly, an individual may be convicted for an offense involving a controlled substance analogue under 21 U.S.C. § 841 if the government establishes that: (1) the alleged analogue substance has a chemical structure that is substantially similar to the chemical structure of a controlled substance classified under Schedule I or Schedule II (*the chemical structure element*);[1] (2) the alleged analogue substance has an actual, intended or claimed stimulant, depressant, or hallucinogenic effect on the central nervous system that is substantially similar to or greater than such effect produced by a Schedule I or Schedule II controlled substance (*the pharmacological similarity element*); and (3) the analogue substance is intended for human consumption (*the human consumption element*). *See Klecker,* 348 F.3d at 71 (construing 21 U.S.C. §§ 802(32)(A), 813).

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[1] Controlled substances are classified under one of five schedules, which are set forth in 21 U.S.C. § 812 and 21 C.F.R. §§ 1308.11 through 1308.15.

II.

In July 2011, police investigators in the Charlottesville, Virginia area began investigating the use and distribution of certain synthetic stimulants commonly known as "bath salts." When ingested into the human body, bath salts are capable of producing similar effects as certain controlled substances, including cocaine, methamphetamine, and methcathinone.

The police investigation revealed that bath salts were being sold from a video rental store in Charlottesville, which was owned and operated by Lois McDaniel. Using confidential informants, investigators purchased bath salts from McDaniel, which later were analyzed by the United States Drug Enforcement Administration (DEA). The chemical analysis performed by the DEA showed that these bath salts contained 3, 4–methylenedioxypyrovalerone (MDPV) and 3, 4–methylenedioxymethcathinone (methylone, or MDMC). Government agents later seized from McDaniel's store additional bath salts that contained a combination of MDPV, methylone, and 4–methylethylcathinone (4–MEC).

McDaniel agreed to cooperate with the investigators, and informed them that the bath salts she distributed from her store were supplied by McFadden. At the investigators' direction, McDaniel initiated recorded telephone conversations with McFadden in which she placed orders for bath salts. During these conversations, McFadden discussed the potency and duration of the "high" experienced by

users of the substances he was distributing. He also compared the effects of those substances to certain controlled substances, including cocaine and methamphetamine.

As a result of these transactions, investigators received bath salts supplied by McFadden on five separate occasions. The DEA's analysis showed that two batches of these bath salts contained 4–MEC, MDPV, and methylone. The three other batches contained 4–MEC, but not MDPV or methylone.[2] Based on the findings of this investigation, the grand jury issued a superseding indictment in November 2012, charging McFadden with nine offenses, including one count of conspiracy to distribute substances containing the alleged controlled substance analogues 4–MEC, MDPV, and methylone (collectively, the alleged CSAs), and eight additional counts of distributing these substances.[3]

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[2] During the course of the government's investigation, the DEA, under its emergency temporary scheduling powers in 21 U.S.C. § 811(h), classified MDPV and methylone as Schedule I controlled substances. Schedules of Controlled Substances, 76 Fed.Reg. 65371, 65372 (amending 21 C.F.R. § 1308.11) (Oct. 21, 2011). The government did not allege that McFadden distributed MDPV or methylone after this classification.

[3] The indictment contained the following charges: conspiracy to distribute a substance or mixture containing the controlled substance analogues 4–MEC, MDPV, and methylone, in violation of 21 U.S.C. §§ 841(a)(1), (b)(1)(c) and 846 (Count One); two counts of distribution of a substance or mixture containing MDPV and methylone, in violation of 21 U.S.C. §§ 841(a)(1) and (b)(1)(c) (Counts Two and Three); three counts

The four-day jury trial focused primarily on the issue whether 4–MEC, MDPV, and methylone constitute controlled substance analogues under the Act. To prove the chemical structure element, the government presented the testimony of Dr. Thomas DiBerardino, a chemist employed by the DEA, who qualified as an expert in the field of chemical structures of drugs. Using chemical diagrams as demonstrative exhibits, Dr. DiBerardino testified that the chemical structures of 4–MEC and MDPV are each substantially similar to methcathinone, a Schedule I controlled substance. Dr. DiBerardino further testified, based on the chemical diagrams, that the chemical structure of methylone is substantially similar to ecstasy, which also is a Schedule I controlled substance.

To establish the pharmacological similarity element, the government presented the testimony of Dr. Cassandra Prioleau, a drug science specialist employed by the DEA, who qualified as an expert in the field of pharmacological effects of drugs. Dr. Prioleau testified that 4–MEC and MDPV each would have a pharmacological effect on the central nervous system substantially similar to the effect produced by

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of distribution of a substance or mixture containing 4–MEC, MDPV, and methylone, in violation of 21 U.S.C. §§ 841(a)(1) and (b)(1)(c) (Counts Four, Five, and Six); and three counts of distribution of a substance or mixture containing 4–MEC, in violation of 21 U.S.C. §§ 841(a)(1) and (b)(1)(c) (Counts Seven, Eight, and Nine).

methcathinone. Dr. Prioleau further testified that methylone would have a substantially similar pharmacological effect on the central nervous system as ecstasy.[4]

In his defense, McFadden presented the testimony of Dr. Matthew C. Lee, a primary care physician and pharmacist, who qualified as an expert in the field of pharmacology and the effects of medication. Dr. Lee criticized the methodology used by Dr. DiBerardino in reaching his conclusions regarding the chemical structure element, and further stated that MDPV and methcathinone are not similar in chemical structure.[5] Dr. Lee also criticized the methodology employed by Dr. Prioleau in reaching her conclusions with respect to the pharmacological similarity element. Dr. Lee testified that methylone did not produce similar pharmacological effects as ecstasy, and that there was insufficient scientific data to draw a conclusion that 4–MEC and MDPV produce similar pharmacological effects in humans as methcathinone.

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[4] Dr. Prioleau acknowledged during cross-examination that methylone generally produced only about one-half the stimulant effect of ecstasy, but also noted that at a "maximum dosage" level methylone and ecstasy would have equivalent stimulant effects.

[5] Dr. Lee did not make an explicit conclusion during his testimony about whether 4–MEC and methcathinone, or methylone and ecstasy, were substantially similar in their respective chemical structures.

After hearing this and other evidence, the jury returned a verdict finding McFadden guilty of each of the nine counts alleged in the indictment. At a sentencing hearing, the district court found that McFadden's advisory sentencing guidelines range was between 51 months' and 63 months' imprisonment. After considering the factors set forth in 18 U.S.C. § 3553(a), the court imposed a below-guidelines sentence of 33 months' imprisonment for each conviction, to run concurrently, and a 30–month period of supervised release. McFadden filed a timely notice of appeal.

III.

A.

We first consider McFadden's argument that the Act is unconstitutional as applied to him. This argument presents the central theme that the Act failed to provide a person of ordinary intelligence notice that the conduct at issue was unlawful.

McFadden argues that the Act fails to meet the constitutional requirement of notice because: (1) the Act uses a "standards-based" scheme, employing general terms such as "substantially similar" and "human consumption," and lacks a list of prohibited substances; (2) the Act is subject to arbitrary and discriminatory enforcement in the absence of statutory guidance concerning prohibited conduct; and (3) despite significant efforts on his part to learn about prohibited conduct, McFadden was unable to determine "what he can and cannot do," and was

unaware that the distribution of controlled substance analogues is prohibited under federal law.

We review de novo a challenge to the constitutionality of a federal statute. *United States v. Gibert,* 677 F.3d 613, 618 (4th Cir. 2012). As a general matter, a criminal statute is unconstitutionally vague if it does not sufficiently define an offense such that ordinary people can understand what conduct is prohibited. *Kolender v. Lawson,* 461 U.S. 352, 357 (1983). This inquiry generally requires an examination of what a person of "common intelligence" would reasonably understand the statute to prohibit, rather than what a particular defendant understood the statute to mean. *See United States v. Washam,* 312 F.3d 926, 930 (8th Cir. 2002) (citing *United States v. Nat'l Dairy Prods.,* 372 U.S. 29, 32–33 (1963) and *Connally v. Gen. Constr. Co.,* 269 U.S. 385, 391 (1926)). Additionally, a statute is unconstitutionally vague if its definition of the prohibited conduct encourages arbitrary and discriminatory enforcement. *Kolender,* 461 U.S. at 357–58.

In our decision in *Klecker,* we rejected a nearly identical constitutional challenge as that raised by McFadden. *See* 348 F.3d at 71–72. There, a defendant challenged his convictions for distributing a chemical compound commonly known as "Foxy." *Id.* at 71. The government alleged that Foxy was an analogue of a Schedule 1 controlled substance, diethyltryptamine (DET). *Id.* at 70. We held that the Act was not unconstitutionally vague in its use of the term "substantially similar" with respect to a defendant who lacked actual notice that a substance was a

controlled substance analogue. *Id.* at 72. We observed that the considerable similarities, found from a comparison of chemical diagrams of the alleged analogue substance and the controlled substance, were sufficient to "put a reasonable person on notice" of Foxy's composition as a DET analogue. *Id.*

This holding in *Klecker* defeats McFadden's argument that the term "substantially similar," as used in 21 U.S.C. § 802(32)(A), is unconstitutionally vague when applied to the chemical compounds at issue here. The testimony of Dr. DiBerardino comprehensively addressed the chemical diagrams comparing the chemical structures of 4–MEC and MDPV with methcathinone, and methylone with ecstasy.

Presenting two-dimensional diagrams in which the chemical structures of 4–MEC and MDPV were displayed in an overlapping manner with the chemical structure of methcathinone, Dr. DiBerardino explained that these substances share a core chemical structure, namely that of a compound called phenethylamine. Although the overlapping diagrams showed that the substances each have some unique features in their respective chemical compositions, Dr. DiBerardino testified that these unique features do not affect the chemical core of the substances. Rather, he stated that the diagrams reflected that "[e]verything that's different is on the periphery" of the respective chemical structures. Dr. DiBerardino made the same type of comparison examining the chemical structures of methylone and ecstasy, during which he explained that those substances share the same core chemical structure,

phenethylamine, and that the structural differences between methylone and ecstasy are insignificant.

Based on his evaluation of these diagrams of the chemical compounds at issue, Dr. DiBerardino concluded that the controlled substances and the respective alleged CSAs have substantially similar chemical structures. Thus, Dr. DiBerardino applied the statutory term "substantially similar" in evaluating the core chemical structures of the substances at issue, and was able to distinguish the differences in those structures as peripheral and inconsequential. After reviewing these chemical diagrams, we agree with the district court's conclusion that for purposes of satisfying the constitutional requirement of notice, there are substantial similarities in the chemical structures between the alleged CSAs and their controlled substance counterparts.

We also view the chemical diagrams and Dr. DiBerardino's testimony in light of the evidence concerning McFadden's intent that the alleged CSAs be consumed by humans to produce a stimulant effect. *See Klecker,* 348 F.3d at 72 (observing that defendant's intent that Foxy be ingested as a hallucinogen reinforced the conclusion that the defendant had adequate notice that Foxy would be regarded as a DET analogue). As stated above, McFadden informed McDaniel during recorded telephone conversations that the substances he was distributing produced effects similar to certain

controlled substances.[6] The fact that McFadden intended that the substances he was distributing be used as alternatives to controlled substances further demonstrates that a reasonable person in his position would understand that his conduct was prohibited by the Act. *See id.* In view of this evidence, the district court did not err in concluding that the statutory term "substantially similar," as applied here, would put a reasonable person on notice concerning the proscribed conduct.

We further disagree with McFadden's argument that the statutory term "human consumption" is unconstitutionally vague. *See* 21 U.S.C. § 813. Although McFadden notes correctly that this term is not defined in the Act, the lack of a statutory definition does not render the Act unconstitutional per se. *See Chapman v. United States,* 500 U.S. 453, 462, 467–68 (1991) (holding that 21 U.S.C. § 841(b)(1)(B) is not unconstitutionally vague despite lack of statutory definition of the terms "mixture" and "substance"). A statute need not contain a definition of every term within its text, and, in the absence of a statutory definition, courts will give terms their ordinary meaning. *See United States v. Day,* 700 F.3d 713, 725 (4th Cir. 2012) (citing *Chapman,* 500 U.S. at 462, 467–68).

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[6] As discussed later in this opinion, we disagree with McFadden's argument that the district court erred in admitting the recorded telephone conversations into evidence. *See infra* at 443.

We agree with the district court that, in the context of the Act, the ordinary meaning of the term "human consumption" plainly encompasses the use of a substance by a human being in a manner that introduces the substance into the body. *See* Black's Law Dictionary 359 (9th ed. 2009) (defining "consumption" as "the use of a thing in a way that exhausts it"). We therefore conclude that there is no ambiguity or vagueness in the Act's use of the term "human consumption."

Additionally, we reject McFadden's argument that the Act is unconstitutionally vague because it does not provide a list of substances that qualify as controlled substance analogues. Because the Act provides for the comparison of different chemical compounds to determine whether they are "substantially similar," a list of particular chemical compounds could not encapsulate the variety of substances potentially covered by the Act. Moreover, such a requirement would undermine the very purpose of the Act, which is to prevent individuals from creating slightly modified versions of controlled substances that produce similar effects and entail similar dangers as those controlled substances. *See Klecker,* 348 F.3d at 70; *Hodge,* 321 F.3d at 432, 437.

Given the creativity of individuals manufacturing these analogue substances, *see United States v. Hofstatter,* 8 F.3d 316, 322 (6th Cir. 1993), there is genuine potential that the creation of such substances could outpace any efforts by authorities to identify and catalog them. Thus, we decline to extend our holding in *Klecker* by imposing a constitutional notice requirement that the Act contain a list of

prohibited substances. *See United States v. Fisher,* 289 F.3d 1329, 1337 n. 11 (11th Cir. 2002) (rejecting vagueness challenge and noting that "[n]o list of controlled substance analogues is necessary").

We also find no merit in McFadden's argument that the Act is subject to arbitrary and discriminatory enforcement. We held in *Klecker* that the Act's "intent requirement alone tends to defeat any vagueness challenge based on the potential for arbitrary enforcement." 348 F.3d at 71. We explained that this intent element requires that the government prove that the defendant meant for the substance at issue to be consumed by humans. *Id.; see also United States v. Roberts,* 363 F.3d 118, 126 (2d Cir. 2004) (holding that the "intended for human consumption" element protects against arbitrary enforcement). Arbitrary and discriminatory enforcement further is prevented by the additional statutory requirements that the government prove (1) substantial chemical similarity between the alleged analogue substance and the controlled substance, and (2) actual, intended, or claimed pharmacological similarity of the alleged analogue substance and the controlled substance. *See Klecker,* 348 F.3d at 71. Accordingly, we reject McFadden's arguments that the Act failed to provide him adequate notice of the prohibited conduct and was subject to arbitrary and discriminatory enforcement.

We likewise find no merit in McFadden's argument that the Act is unconstitutional as applied because he "took reasonable steps to inform himself as to the legality of the chemicals that he was selling," and did not find any information indicating

that his actions were illegal. In support of this argument, McFadden relies on the fact that he visited the DEA's website to determine whether the substances at issue were prohibited, but that he did not see the disclaimers on the website discussing the Act and controlled substance analogues.

McFadden's argument fails because it flouts the wellsettled general principle that "ignorance of the law is no excuse." *See United States v. Mitchell,* 209 F.3d 319, 323 (4th Cir. 2000) (citation omitted). Moreover, McFadden provides no authority supporting his novel proposition that we should depart from this general rule because he unsuccessfully sought to determine whether his conduct was lawful. Accordingly, we reject McFadden's argument that the Act is unconstitutional because he lacked notice that the distribution of controlled substance analogues is prohibited under federal law.

B.

We next address McFadden's arguments concerning certain rulings made by the district court during the trial. McFadden contends that the district court erred: (1) in permitting the testimony of Toby Sykes, an individual who purchased bath salts from McDaniel; (2) in admitting into evidence recordings of McFadden's telephone conversations with McDaniel; and (3) in declining to instruct the jury that the government was required to prove that McFadden effectively knew that the substances at issue had the essential characteristics of controlled substance analogues.

1.

The government offered the testimony of Toby Sykes as evidence supporting the pharmacological similarity element. Sykes testified that he was a former methamphetamine addict who purchased bath salts from McDaniel, and that his use of these bath salts produced a far more potent effect on his body than his use of methamphetamine.[7]

McFadden objected to Sykes' testimony on the ground of relevance, because it was uncertain whether the bath salts that Sykes consumed had been supplied by McFadden or were in the same form and doses as those delivered to McDaniel. The district court overruled McFadden's objection, but granted him "great latitude" to cross-examine Sykes concerning whether he could state that the substances he purchased were distributed by McFadden.[8]

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[7] Although Sykes compared the bath salts to methamphetamine rather than methcathinone, Dr. Prioleau testified that various studies showed that MDPV and methylone produce a similar pharmacological effect in laboratory animals as the effect generated by methamphetamine. Accordingly, as the district court found, Sykes' comparison of the bath salts to methamphetamine was consistent with Dr. Prioleau's testimony.

[8] On appeal, McFadden bases his argument concerning Sykes' testimony on relevancy grounds, and does not argue that the testimony should have been struck under Federal Rule of Evidence 403 as having a probative value substantially outweighed by the danger of unfair prejudice.

We review for abuse of discretion a district court's ruling concerning the admissibility of evidence. *United States v. Summers,* 666 F.3d 192, 197 (4th Cir. 2011). Under Rule 402 of the Federal Rules of Evidence, all "relevant" evidence is admissible unless specifically prohibited by the Constitution, a federal statute, or another evidentiary rule. Evidence is relevant if it has a tendency to make a fact pertinent to the case "more or less probable than [the fact] would be without the evidence." Fed. R. Evid. 401; *United States v. Powers,* 59 F.3d 1460, 1465 (4th Cir. 1995). We have observed that the determination of relevance "presents a low barrier to admissibility," and that evidence need only be "worth consideration by the jury" to be admissible. *United States v. Leftenant,* 341 F.3d 338, 346 (4th Cir. 2003) (citation omitted). Accordingly, a district court has broad discretion in determining whether certain evidence is relevant. *United States v. Queen,* 132 F.3d 991, 998 (4th Cir. 1997).

Applying this deferential standard of review, we conclude that the district court did not abuse its discretion in admitting Sykes' testimony. As McFadden concedes, there was some overlap between the period in which Sykes purchased bath salts from McDaniel and the period in which McFadden supplied McDaniel with such substances. Also, importantly, Sykes' description of the packaging of the bath salts he purchased from McDaniel matched the description of the packaging used by McFadden

in distributing the substances. Sykes was shown several exhibits of "blue baggies" containing substances that the government agents had purchased from McDaniel and, on at least one occasion, directly from McFadden. Sykes testified that he recognized the packaging of those exhibits because he had purchased bath salts from McDaniel in similar blue baggies.[9]

Given this foundation evidence tending to show that some of the bath salts consumed by Sykes were supplied by McFadden, Sykes' testimony concerning the bath salts' effect on his body properly was submitted to the jury for purposes of establishing the pharmacological similarity element. Although there were flaws in Sykes' testimony relating to the time period at issue and whether McDaniel altered the substances after receiving them from McFadden, such flaws were explored during cross-examination and were relevant to the weight to be given Sykes' testimony, not to its admissibility. *See Ziskie v. Mineta,* 547 F.3d 220, 225 (4th Cir. 2008) (noting that determining the weight of evidence entails a different inquiry than the relevance inquiry required by Rules 401 and 402 of the Federal Rules of Evidence).

2.

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[9] McDaniel was also shown these exhibits during her testimony, during which she stated that she recognized those items as originating from McFadden because of their distinctive packaging.

We next consider McFadden's challenge to the admission of evidence of recorded telephone conversations between him and McDaniel. In the district court, McFadden objected to this evidence on the ground that the comparisons he made during these conversations were irrelevant to the crimes charged, because he claimed that 4–MEC produced effects similar to cocaine and methamphetamine, controlled substances not used for comparison under the chemical structure element. The district court overruled McFadden's objection, finding that this evidence was relevant to both the pharmacological similarity element and the human consumption element.

On appeal, McFadden argues solely that the district court erred in concluding that the recordings were relevant to the pharmacological similarity element. McFadden does not address the district court's separate conclusion that this evidence was relevant to the human consumption element, nor does he raise an argument that admission of this evidence was unduly prejudicial under Rule 403. Because the human consumption element was an independent basis for the district court's admission of this evidence, we affirm the court's ruling on that basis and do not address McFadden's argument whether the recordings were relevant to proof of the pharmacological similarity element. *See United States v. Hatchett,* 245 F.3d 625, 644–45 (7th Cir. 2001) (holding defendant waived argument concerning district court's ruling on admissibility of evidence by failing to challenge on appeal one of two independent grounds for court's ruling).

3.

McFadden next asserts, on the basis of out-of-circuit precedent, that the district court erred in refusing to instruct the jury that the government was required to prove that he knew, had a strong suspicion, or deliberately avoided knowledge that the alleged CSAs possessed the characteristics of controlled substance analogues. *See United States v. Turcotte,* 405 F.3d 515, 527 (7th Cir. 2005). We review for abuse of discretion the district court's denial of the requested instruction. *United States v. Bartko,* 728 F.3d 327, 343 (4th Cir. 2013). To show an abuse of discretion, a defendant must establish that the proffered instruction: "(1) was correct, (2) was not substantially covered by the charge that the district court actually gave to the jury, and (3) involved some point so important that the failure to give the instruction seriously impaired the defendant's defense." *Id.*

McFadden's argument fails at the outset because he cannot satisfy the first requirement of this test. The instruction he proposed is not a correct statement of the law in this Circuit. In *Klecker,* we set forth the elements that the government was required to prove to obtain a conviction under the Act, including the scienter requirement that the defendant intended that the substance at issue be consumed by humans. 348 F.3d at 71. We further stated that the Act may be applied to a defendant who lacks actual notice that the substance at issue could be a controlled substance analogue. *Id.* at 72.

In contrast to our decision in *Klecker,* the Seventh Circuit has imposed a strict knowledge requirement before a defendant may be convicted of violating the Act. In its decision in *Turcotte,* the court stated that "our precedents demand a showing that the defendant knew the substance in question was a controlled substance analogue." 405 F.3d at 527. Because we have not imposed such a knowledge requirement, and have not included the concepts of "strong suspicion" or "deliberate avoidance" in framing the scienter requirement under the Act, we hold that the district court properly denied McFadden's requested jury instruction.

C.

Finally, we address McFadden's argument challenging the sufficiency of the evidence and the district court's denial of his motion for judgment of acquittal. McFadden's sufficiency argument is limited to his contention that the government failed to satisfy its evidentiary burden of demonstrating that 4–MEC, MDPV, and methylone qualify as controlled substance analogues. McFadden does not otherwise contest the jury's verdict with respect to the conspiracy offense and the substantive counts of distributing controlled substance analogues in violation of the Act.

We review de novo the district court's denial of a motion for judgment of acquittal. *United States v. Hamilton,* 699 F.3d 356, 361 (4th Cir. 2012). In considering a defendant's argument that the evidence was insufficient to support his convictions, we will uphold a jury's verdict if, viewing the evidence in the

light most favorable to the government, there is substantial evidence in the record to support the verdict. *Id.* "Substantial evidence" is "evidence that a reasonable finder of fact could accept as adequate and sufficient to support a conclusion of a defendant's guilt beyond a reasonable doubt." *United States v. Green,* 599 F.3d 360, 367 (4th Cir. 2010).

In conducting this review, we afford the jury's verdict deference because "it is the jury's province to weigh the credibility of the witnesses, and to resolve any conflicts in the evidence." *United States v. Dinkins,* 691 F.3d 358, 387 (4th Cir. 2012) (citation omitted). Accordingly, a defendant challenging the sufficiency of the evidence on appeal bears a "heavy burden," and we will reverse a conviction for insufficient evidence "only in the rare case when the prosecution's failure is clear." *Hamilton,* 699 F.3d at 361–62 (citation and internal quotation marks omitted).

For ease of review, we restate the elements of the distribution offenses for which McFadden was convicted. In addition to proving that McFadden distributed the substances at issue, the government was required to prove that those substances: (1) have a substantially similar chemical structure as a Schedule I or II controlled substance; (2) have a substantially similar or greater pharmacological effect on the human central nervous system as a Schedule I or II controlled substance, which effect was either actual, intended, or represented by the defendant; and (3) were intended by the defendant to be consumed by humans. *See Klecker,* 348 F.3d at 71.

As stated above, the government presented the testimony of Dr. DiBerardino, who concluded that 4–MEC and MDPV are substantially similar in chemical structure as methcathinone, a Schedule I controlled substance. The government also presented the testimony of Dr. Prioleau, who concluded that 4–MEC and MDPV produce a substantially similar pharmacological effect as methcathinone. McFadden asks us to cast aside Dr. DiBerardino and Dr. Prioleau's opinions and adopt the conflicting views of McFadden's expert witness, Dr. Lee. According to Dr. Lee, the scientific methods employed by Dr. DiBerardino and Dr. Prioleau were inadequate to reach their respective conclusions, with which Dr. Lee disagreed.

We recognized long ago that "[a]n appellate court is not the proper forum to refight a battle of expert witnesses." *Connorton v. Harbor Towing Corp.,* 352 F.2d 517, 518 (4th Cir. 1965) (per curiam), *quoted in United States v. Wood,* 741 F.3d 417, 425 (4th Cir. 2013). That fight was waged in the district court in this case, and the jury chose to accept the conclusions of Dr. DiBerardino and Dr. Prioleau, despite defense counsel's vigorous cross-examination of those witnesses and the opposing testimony of Dr. Lee.

It would be improper under our standard of review to elevate Dr. Lee's opinion over the opinions of Dr. DiBerardino and Dr. Prioleau, because it is the jury's function to weigh witnesses' credibility, to determine the weight to be accorded their testimony, and to resolve conflicts in the evidence. *Dinkins,* 691 F.3d at 387; *United States v. Maceo,* 873 F.2d 1, 7 (1st

Cir. 1989). Therefore, based on the record before us, we conclude that the government presented sufficient evidence that 4–MEC and MDPV are substantially similar in chemical structure as methcathinone, a Schedule 1 substance. We further conclude that the government presented sufficient evidence that 4–MEC and MDPV produce actual pharmacological effects on the central nervous system substantially similar to the effects produced by methcathinone.[10] In light of this conclusion concerning "actual" pharmacological similarity, we need not address McFadden's argument that there was insufficient proof that he "represented or intended" that 4–MEC and MDPV would have substantially similar pharmacological effects as a controlled substance.[11] *See Klecker,* 348 F.3d at 71 (government may establish the pharmacological similarity element by showing "actual, intended, *or* claimed" similarity) (emphasis added).

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[10] We note that because the jury's verdict is well-supported by Dr. DiBerardino and Dr. Prioleau's testimony, we need not consider Sykes' testimony in determining whether the government proved actual pharmacological similarity of these substances at issue.

[11] We therefore need not reach McFadden's arguments concerning his statements to McDaniel that 4–MEC and mixtures containing 4–MEC have an effect similar to substances other than methcathinone, and do not decide whether the pharmacological similarity element may be established by comparing the alleged analogue substance to a different controlled substance than used for comparison under the chemical structure element.

Having reached this conclusion with respect to 4–MEC and MDPV, we need not address whether there was sufficient evidence in the record to conclude that methylone qualified as a controlled substance analogue. Each of the charges in the superseding indictment relating to methylone also alleged in the conjunctive that McFadden distributed MDPV or 4–MEC with respect to those counts. In other words, none of the charges hinged on a finding that methylone qualified as a controlled substance analogue.[12] Accordingly, even if we agreed with McFadden's arguments relating to methylone, we nevertheless would affirm each of his convictions. *See Turner v. United States,* 396 U.S. 398, 420 (1970) (reaffirming the general rule that if an indictment charges several acts in the conjunctive, a guilty verdict stands if the evidence is sufficient with respect to any one of the acts); *United States v. Bollin,* 264 F.3d 391, 412 n. 14 (4th Cir. 2001) (in case involving perjury allegation charged in the conjunctive pertaining to two alleged false statements, holding that Court need not reach arguments pertaining to the first alleged false statement because evidence supported jury verdict relating to the second alleged false statement).

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[12] We further observe that because the government agreed to remove methylone from the calculation of drug weight for purposes of determining McFadden's advisory sentencing guidelines range, methylone was not a factor in the court's determination of McFadden's sentence.

IV.

For these reasons, we affirm the district court's judgment.

AFFIRMED.

APPENDIX B

UNITED STATES DISTRICT COURT
Western District of Virginia

UNITED STATES OF AMERICA

v.

Stephen Dominick McFadden

JUDGEMENT IN A CRIMINAL CASE

Case Number: DVAW312CR000009-001

Case Number:

USM Number: 65902-053

John Lloyd Snook III, Esq. and Louis Elias Diamond, Esq.

Defendant's Attorney

THE DEFENDANT:

☐ pleaded guilty to count(s)_____

☐ pleaded nolo contendere to count(s) which was accepted by the court. _____

☒ was found guilty on count(s) after a plea of not guilty, 1, 2, 3, 4, 5, 6, 7, 8 and 9_____

The defendant is adjudicated guilty of these offenses:

Title & Section	**Nature of Offense**	**Offense Ended**	**Count**
21 U.S.C. §§ 846 and 841(b)(1)(C)	Conspiracy to Distribute MDPV, MDMC and 4-MEC, Controlled Substance Analogues	02/15/2012	1
21 U.S.C. §§ 841(a)(1) and(b)(1)(C)	Distribution of MDPV and MDMC, Controlled Substance Analogues	07/25/2011	2
21 U.S.C. §§ 841(a)(1) and(b)(1)(C)	Distribution of MDPV and MDMC, Controlled Substance Analogues	08/11/2011	3

The defendant is sentenced as provided in pages 2 through _7_ of this judgment. The sentence is imposed pursuant to the Sentencing Reform Act of 1984.

☐ The defendant has been found not guilty on count(s) _____

☐ Count(s) _____☐ is ☐ are dismissed on the motion of the United States.

It is ordered that the defendant must notify the United States attorney for this district within 30 days of any change of name, residence or mailing address until all fines, restitution, costs, and special assessments imposed by this judgment are fully paid. If ordered to pay restitution, the defendant must notify the court and United States attorney of material changes in economic circumstances.

April 29, 2013
Date of Imposition of Judgment

/s/ Glen E. Conrad
Signature of Judge

Glen E. Conrad, Chief United States District Judge
Name and Title of Judge

April 30, 2013
Date

ADDITIONAL COUNTS OF CONVICTION

Title & Section	**Nature of Offense**	**Offense Ended**	**Count**
21 U.S.C. §§ 841(a)(1) and(b)(1)(C)	Distribution of MDPV and MDMC, and 4-MEC, Controlled Substance Analogues	08/24/2011	4
21 U.S.C. §§ 841(a)(1) and(b)(1)(C)	Distribution of MDPV and MDMC, and 4-MEC, Controlled Substance Analogues	08/26/2011	5
21 U.S.C. §§ 841(a)(1) and(b)(1)(C)	Distribution of MDPV and MDMC, and 4-MEC, Controlled Substance Analogues	09/16/2011	6
21 U.S.C. §§ 841(a)(1) and(b)(1)(C)	Distribution 4-MEC, Controlled Substance Analogues	10/27/2011	7

21 U.S.C. §§ 841(a)(1) and(b)(1)(C)	Distribution 4-MEC, Controlled Substance Analogues	01/06/2012	8
21 U.S.C. §§ 841(a)(1) and(b)(1)(C)	Distribution 4-MEC, Controlled Substance Analogues	02/02/2012	9

IMPRISONMENT

The defendant is hereby committed to the custody of the United States Bureau of Prisons to be imprisoned for a total term of:
Thirty Three (33) Months as to each of Counts One through Nine (1-9), to run concurrently.

☒ The court makes the following recommendations to the Bureau of Prisons: Placement as near as possible to defendant's home in Staten Island, New York.

☐ The defendant is remanded to the custody of the United States Marshal.

☐ The defendant shall surrender to the United States Marshal for this district:

- ☐ at _____ ☐ a.m. ☐ p.m. on _____
- ☐ as notified by the United States Marshal.

☒ The defendant shall surrender for service of sentence at the institution designated by the Bureau of Prisons:

- ☐ before _____ on _____
- ☒ as notified by the United States Marshal.
- ☐ as notified by the Probation or Pretrial Services Office.

RETURN

I have executed this judgment as follows:

Defendant delivered on _____ to _____ a _____, with a certified copy of this judgment.

_____
United States Marshal

By _____
Deputy United States Marshall

SUPERVISED RELEASE

Upon release from imprisonment, the defendant shall be on supervised release for a term of:

Thirty (30) Months as to each of Counts One through Nine (1-9), to run concurrently.

The defendant must report to the probation office in the district to which the defendant is released within 72 hours of release from the custody of the Bureau of Prisons.

The defendant shall not commit another federal, state or local crime.

The defendant shall not unlawfully possess a controlled substance. The defendant shall refrain from any unlawful use of a controlled substance. The defendant shall submit to one drug test within 15 days of release from imprisonment and at least two periodic drug tests thereafter, as determined by the court.

☐ The above drug testing condition is suspended, based on the court's determination that the defendant poses a low risk of future substance abuse. (*Check, if applicable.)*

☒ The defendant shall not possess a firearm, ammunition, destructive device, or any other dangerous weapon. *(Check, if applicable.)*

☒ The defendant shall cooperate in the collection of DNA as directed by the probation officer. *(Check, if applicable.)*

☐ The defendant shall comply with the requirements of the Sex Offender Registration and Notification Act (42 U.S.C. § 16901, *et seq.*) as directed by the probation officer, the Bureau of Prisons, or any state sex offender registration agency in which he or she resides, works, is a student, or was convicted of a qualifying offense. *(Check, if applicable)*

☐ The defendant shall participate in an approved program for domestic violence. *(Check, if applicable.)*

If this judgment imposes a fine or restitution, it is a condition of supervised release that the defendant pay in accordance with the Schedule of Payments sheet of this judgment.

The defendants must comply with the standard conditions that have been adopted by this court as well as with any additional conditions on the attached page.

STANDARD CONDITIONS OF SUPERVISION

1) the defendant shall not leave the judicial district without the permission of the court or probation officer;
2) the defendant shall report to the probation officer in a manner and frequency directed by the court or probation officer;

3) the defendant shall answer truthfully all inquiries by the probation officer and follow the instructions of the probation officer;
4) the defendant shall support his or her dependents and meet other family responsibilities;
5) the defendant shall work regularly at a lawful occupation, unless excused by the probation officer for schooling, training, or other acceptable reasons;
6) the defendant shall notify the probation officer at least ten days prior to any change in residence or employment;
7) the defendant shall refrain from excessive use of alcohol and shall not purchase, possess, use, distribute, or administer any controlled substance or any paraphernalia related to any controlled substances, except as prescribed by a physician;
8) the defendant shall not frequent places where controlled substances are illegally sold, used, distributed, or administered;
9) the defendant shall not associate with any persons engaged in criminal activity and shall not associate with any person convicted of a felony, unless granted permission to do so by the probation officer;
10) the defendant shall permit a probation officer to visit him or her at any time at home or elsewhere and shall permit confiscation of any contraband observed in plain view of the probation officer;
11) the defendant shall notify the probation officer within seventy-two hours of being arrested or questioned by a law enforcement officer;

12) the defendant shall not enter into any agreement to act as an informer or a special agent of a law enforcement agency without the permission of the court; and
13) as directed by the probation officer, the defendant shall notify third parties of risks that may be occasioned by the defendant's criminal record or personal history or characteristics and shall permit the probation officer to make such notifications and to confirm the defendant's compliance with such notification requirement.

SPECIAL CONDITIONS OF SUPEVISION

1. The defendant shall pay any special assessment and fine that are imposed by this judgment.
2. The defendant shall reside in a residence free of firearms, ammunition, destructive devices, and dangerous weapons.
3. The defendant shall submit to warrantless search and seizure of person and property as directed by the probation officer, to determine whether the defendant is in possession of firearms and illegal controlled substances.

CRIMINAL MONETARY PENALTIES

The defendant must pay the total criminal monetary penalties under the schedule of payments on Sheet 6.

	Assessment	Fine	Restitution
TOTALS	$900.00	$1,000.00	$

☐ The determination of restitution is deferred until _____. An *Amended Judgment in a Criminal Case* (AO 245C) will be entered after such determination.

☐ The defendant must make restitution (including community restitution) to the following payees in the amount listed below.

If the defendant makes a partial payment, each payee shall receive an approximately proportioned payment, unless specified otherwise in the priority order or percentage payment column below. However, pursuant to 18 U.S.C. § 3664(i), all nonfederal victims must be paid before the United States is paid.

Name of Payee	**Total Loss***	**Restitution Ordered**	**Priority or Percentage**
TOTALS	$0.00	$0.00	

☐ Restitution amount ordered pursuant to please agreement $ _____

☐ The defendant must pay interest on restitution and a fine of more than $2,500, unless the restitution or fine is paid in full before the fifteenth day after the date of the judgment, pursuant to 18 U.S.C. § 3612(f). All of the payment options on Sheet 6 may be subject to penalties for delinquency and default, pursuant to 18 U.S.C. § 3612(g).

☐ The court determined that the defendant does not have the ability to pay interest and it is ordered that:

  ☐ the interest requirement is waived for the ☐ fine ☐ restitution.

  ☐ the interest requirement for the ☐ fine ☐ restitution is modified as follows:

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* Findings for the total amount of losses are required under Chapters 109A, 110, 110A, and 113A of Title 18 for offenses committed on or after September 13, 1994, but before April 13, 1996.

SCHEDULE OF PAYMENTS

Having assessed the defendant's ability to pay, the total criminal monetary penalties are due immediately and payable as follows:

A ☒ Lump sum payment of $900.00 immediately, balance payable

☐ not later than _____, or

☐ in accordance ☐ C, ☐ D, ☐ E, ☒ F or, ☐ G below); or

B ☐ Payment to begin immediately (may be combined with ☐ C, ☐ D, ☐ F, or ☐ G below); or

C ☐ Payment in equal _____ (e.g., weekly, monthly, quarterly) installments of $_____ over a period of _____ (e.g., months or years), to commence _____ (e.g., 30 or 60 days) after the date of this judgment; or

D ☐ Payment in equal _____ (e.g., weekly, monthly, quarterly) installments of $_____ over a period of _____ (e.g., months or years), to commence _____ (e.g., 30 or 60 days) after release from imprisonment to a term of supervision; or

E ☐ Payment during the term of supervised release will commence within _____ (e.g., 30 or 60 days) after release from imprisonment. The court will set the payment plan based on an assessment of the defendant's ability to pay at that time; or

F ☒ During the term of imprisonment, payment in equal _monthly_ (e.g., weekly, monthly, quarterly) installments of $_50_, or _50_% of the defendant's income, whichever is _less_ to commence _60 days_ (e.g., 30 or 60 days) after the date of this judgment; AND payment in equal _monthly_ (e.g., weekly, monthly, quarterly) installments of $_100_ during the term of supervised release, to commence _60 days_ (e.g., 30 or 60 days) after release from imprisonment.

G ☐ Special instructions regarding the payment of criminal monetary penalties:

Any installment schedule shall not preclude enforcement of the restitution or fine order by the United States under 18 U.S.C. §§ 3613 and 3664(m).

Any installment schedule is subject to adjustment by the court at any time during the period of imprisonment or supervision, and the defendant shall notify the probation officer and the U.S. Attorney of any change in the defendant's economic circumstances that may affect the defendant's ability to pay.

All criminal monetary penalties shall be made payable to the Clerk, U.S. District Court, P.O. Box 1234, Roanoke, Virginia 24006, for disbursement.

The defendant shall receive credit for all payments previously made toward any criminal monetary penalties imposed.

Any obligation to pay restitution is joint and several with other defendants, if any, against whom an order of restitution has been or will be entered.

☐ Joint and Several
Defendant and Co-Defendant Names and Case Numbers (including defendant number), Total Amount, Joint and Several Amount, and corresponding payee, if appropriate.

☐ The defendant shall pay the cost of prosecution.

☐ The defendant shall pay the following court cost(s):

☒ He defendant shall forfeit the defendant's interest in the following property to the United States:
as noted in the attached order of forfeiture.

Payments shall be applied in the following order: (1) assessment, (2) restitution principal, (3) restitution interest, (4) fine principal, (5) fine interest, (6) community restitution, (7) penalties, and (8) costs, including cost of prosecution and court costs.

APPENDIX C

MAY 10, 2013

UNITED STATES DISTRICT COURT, FOR THE WESTERN DISTRICT OF VIRGINIA CHARLOTTESVILLE DIVISION

UNITED STATES OF AMERICA	)	Criminal Action No. 3:12CR00009
	)	
v.	)	**MEMORANDUM OPINION**
	)	
STEPHEN DOMINICK McFADDEN,	)	By: Hon. Glen E. Conrad, Chief United States District Judge
	)	
Defendant,	)	
	)	

This case is presently before the court on the defendant's motion for judgment of acquittal. For the reasons set forth below, the motion will be denied.

Background

On November 14, 2012, the defendant, Stephen Dominick McFadden, was charged in a nine-count superseding indictment returned by a grand jury in the Western District of Virginia. Count One charged the defendant with conspiring to distribute and possess with intent to distribute, for human consumption, controlled substance analogues, in violation of 21 U.S.C. § 841(a)(1) and 846. Counts Two through Nine charged the defendant with

distributing controlled substance analogues, for human consumption, in violation of 21 U.S.C. § 841(a)(1).

The charges stemmed from McFadden's sale and distribution of products marketed as "bath salts," which contained one or more of the following substances: 3,4–methylenedioxymethcathinone (commonly known as "methylone" or "MDMC"); 3,4–methylenedioxypyrovalerone (commonly known as "MDPV"); and 4–methyl–ethylcathinone (commonly known as "4–MEC"). The indictment alleged that methylone, MDPV, and 4–MEC were controlled substance analogues during the time periods charged in the indictment, and that McFadden's activities were therefore unlawful under the Controlled Substance Analogue Enforcement Act of 1986 ("Analogue Act"). *See* 21 U.S.C. §§ 802(32), 813.[1]

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[1] On October 21, 2011, the Drug Enforcement Administration exercised its emergency scheduling authority to designate methylone and MDPV as Schedule I controlled substances for at least one year. *See* 76 Fed.Reg. 65371 (Oct. 21, 2011) (amending 21 C.F.R. § 1308.11(g) to include methylone and MDPV). The superseding indictment reflected these amendments. Count One charged that, prior to October 21, 2011, the defendant conspired to distribute a mixture or substance containing methylone, MDPV, and 4–MEC, and that from October 21, 2011 until February 15, 2012, the defendant conspired to distribute a mixture or substance containing 4–MEC. Likewise, Counts Seven, Eight, and Nine, which charged conduct occurring after October 21, 2011, related solely to the distribution of 4–MEC, which remains unscheduled.

McFadden's co-defendant, Lois McDaniel, began selling bath salts from her video store in Charlottesville, Virginia in 2011. During the course of investigating McDaniel, law enforcement agents determined that she was purchasing the bath salts from a supplier in New York, later identified as McFadden. On February, 15, 2012, a search warrant was executed at an office unit occupied by McFadden in Staten Island, New York. During the search, agents recovered bath salts, scales, plastic bags, and other items associated with the distribution of these substances.

McFadden went to trial, and, on January 10, 2013, a jury returned a verdict of guilty on all nine counts. McFadden subsequently filed a motion for judgment of acquittal, in which he challenges the constitutionality of the Analogue Act; the propriety of the court's instructions to the jury; the admission of certain expert testimony; and the sufficiency of the evidence to support his convictions.

Discussion

I. *The Constitutionality of the Analogue Act*

McFadden contends that the Analogue Act is unconstitutionally vague as applied to him. The Act defines a "controlled substance analogue" as:

> a substance—
> (i) the chemical structure of which is substantially similar to the chemical structure of a controlled substance in schedule I or II;

> (ii) which has a stimulant, depressant, or hallucinogenic effect on the central nervous system that is substantially similar to or greater than the stimulant, depressant, or hallucinogenic effect on the central nervous system of a controlled substance in schedule I or II;
>
> or
>
> (iii) with respect to a particular person, which such person represents or intends to have a stimulant, depressant, or hallucinogenic effect on the central nervous system that is substantially similar to or greater than the stimulant, depressant, or hallucinogenic effect on the central nervous system of a controlled substance in schedule I or II.

21 U.S.C. § 802(32)(A).[2] The Act further provides that "[a] controlled substance analogue shall, to the extent intended for human consumption, be treated, for the purposes of any Federal law as a controlled substance in schedule I." 21 U.S.C. § 813.

---

[2] Although § 802(32)(A) contains the word "or" between clauses (ii) and (iii), the "vast majority of federal courts ... have adopted [a] conjunctive reading," which requires a controlled substance analogue to satisfy both clause (i) and either clause (ii) or (iii). *United States v. Turcotte,* 405 F.3d 515, 522 (7th Cir. 2005) (citing cases). Since both parties advocated for a conjunctive reading of the statute, the court assumed, for purposes of this case, that it is the correct one.

"Due process requires that a criminal statute provide adequate notice to a person of ordinary intelligence that his contemplated conduct is illegal, 'for no man shall be held criminally responsible for conduct which he could not reasonably understand to be proscribed.' " *Buckley v. Valeo,* 424 U.S. 1, 77 (1976) (quoting *United States v. Harriss,* 347 U.S. 612, 617 (1954)). Thus, "[t]he void-for-vagueness doctrine requires that penal statutes define the criminal offense with sufficient definiteness that ordinary people can understand what conduct is prohibited and in a manner that does not encourage arbitrary and discriminatory enforcement." *Kolender v. Lawson,* 461 U.S. 352, 357 (1983). "[V]agueness challenges to statutes which do not involve First Amendment freedoms must be examined in the light of the facts of the case at hand." *United States v. Mazurie,* 419 U.S. 544, 550 (1975).

Under existing circuit precedent interpreting the Analogue Act, McFadden is unable to establish that the Act lends itself to arbitrary enforcement. In *United States v. Klecker,* 348 F.3d 69 (4th Cir. 2003), the United States Court of Appeals for the Fourth Circuit held that "[t]he requirement of preventing arbitrary enforcement is easily satisfied" by the Analogue Act. *Id.* at 71. In reaching this conclusion, the Fourth Circuit explained as follows:

> In order to show an Analogue Act violation, the Government must prove (1) substantial *chemical* similarity between the alleged analogue and a controlled substance; *see* 21 U.S.C. § 802(32)(A)(i); (2) actual, intended, or claimed *physiological* similarity (in other

> words, that the alleged analogue has effects similar to those of a controlled substance or that the defendant intended or represented that the substance would have such effects), *see id.* § 802(32)(A)(ii), (iii); and (3) *intent* that the substance be consumed by humans, *see id.* § 813. The intent requirement alone tends to defeat any vagueness challenge based on the potential for arbitrary enforcement.

Id. (emphasis in original) (additional internal citations omitted); *see also United States v. Hofstatter,* 8 F.3d 316, 322 (6th Cir. 1993) (rejecting a similar vagueness challenge and holding that the intent requirement set forth in 21 U.S.C. § 813 "sufficiently constrains law enforcement officials and discourages arbitrary or discriminatory application of the laws").

The court also rejects McFadden's argument that the Analogue Act fails to provide adequate notice that distributing a mixture or substance containing methylone, MDPV, or 4–MEC would be unlawful. In reaching this decision, the court is again guided by the Fourth Circuit's opinion in *Klecker.* While *Klecker* involved substances other than methylone, MDPV, and 4–MEC, its analysis is instructive. Specifically, in addressing the issue of adequate notice, the Fourth Circuit determined that it was "useful to compare chemical diagrams of the controlled substance and the alleged analogue." *Id.* at 72 (citing *United States v. McKinney,* 79 F.3d 105, 108 (8th Cir. 1996), *vacated on other grounds,* 520 U.S. 1226 (1997)). The diagrams admitted into evidence in *Klecker* demonstrated similarities between DET, a controlled

substance, and Foxy, the alleged analogue. *Id.* Although there were "important differences" between the two substances, the Fourth Circuit held that "the similarities in their structures would put a reasonable person on notice that Foxy might be regarded as a DET analogue, particularly if that person intended (as Klecker plainly did) that Foxy be ingested as a hallucinogen." *Id. Accord McKinney,* 79 F.3d at 108 (rejecting the defendant's vagueness challenge to the Analogue Act and emphasizing that "a reasonable layperson could, for example, have examined a chemical chart and intelligently decided for himself or herself, by comparing their chemical diagrams, whether the chemical structure of two substances were substantially similar"). While the record in *Klecker* contained evidence indicating that the defendant was aware that Foxy was a controlled substance analogue, the Fourth Circuit concluded that "the Analogue Act would not be unconstitutionally vague as applied to Foxy even with respect to a defendant who lacked actual notice." *Klecker,* 348 F.3d at 72.

In this case, one of the government's experts, Tom DiBerardino, a chemist with the Drug Enforcement Administration, testified regarding the chemical structures of MDPV, 4–MEC, and methylone. DiBerardino opined that the chemical structures of MDPV and 4–MEC are substantially similar to that of methcathinone, a Schedule I controlled substance, and that the chemical structure of methylone is substantially similar to that of MDMA, which is also known as ecstasy. During DiBerardino's testimony, the government presented

diagrams of each substance's chemical structure for the jury to compare. The government also presented diagrams on which the chemical structures of the alleged analogues were superimposed on the respective controlled substances to further emphasize their common features. Having examined the chemical diagrams, the court is convinced that they would put a reasonable person on notice that MDPV and 4–MEC might be regarded as analogues of methcathinone, given the considerable similarities in their chemical structures. The court likewise concludes that the similarities between the chemical structures of methylone and MDMA would put a reasonable person on notice that methylone might be regarded as an MDMA analogue. This is particularly true if that person intended for the analogues to be consumed as alternatives to illicit stimulants, and, in this case, the government's evidence, viewed in its favor, established that this was McFadden's intention.

McFadden's remaining statutory challenges fare no better. The fact that the Analogue Act "does not specify any particular drug that may not be sold" does not render it unconstitutionally vague. (Docket No. 134 at 8.) As other courts have recognized, "[t]he object of the Analogue Act is to prevent underground chemists from producing slightly modified drugs that are legal but have the same effects and dangers as scheduled controlled substances." *United States v. Hodge,* 321 F.3d 429, 432 (3d Cir. 2003); *see also United States v. Washam,* 312 F.3d 926, 933 (8th Cir. 2002) ("One of Congress's purposes for passing the Analogue Statute was to prohibit innovative drugs

that are not yet listed as controlled substances."). Under the existing law, "all substances that meet the definition of a controlled substance analogue are illegal" and, thus, "[n]o list of controlled substance analogues is necessary." *United States v. Fisher,* 289 F.3d 1329, 1337 (11th Cir. 2002). Indeed, "[g]iven the creativity of amateur chemists, such a list might well be impossible to compile." *Hofstatter,* 8 F.3d at 322. Accordingly, the court agrees with the government that the failure to specifically list controlled substance analogues does not render the Analogue Act impermissibly vague.

The court is also unpersuaded by the defendant's argument that the failure to define the term "human consumption" renders the Analogue Act void for vagueness. It is well settled that "a criminal statute need not define explicitly every last term within its text, for as the Supreme Court has repeatedly explained, where 'terms used in a statute are undefined, we give them their ordinary meaning.'" *United States v. Day,* 700 F.3d 713, 725 (4th Cir. 2012) (quoting *Jones v. United States,* 529 U.S. 848, 855 (2000)); *see also Chapman v. United States,* 500 U.S. 453, 462 (1991) (construing the undefined term "mixture" in 21 U.S.C. § 841(b)(1)(B)(v) by looking to its ordinary meaning and holding that such a construction did not leave the statute unconstitutionally vague).

Here, the court is convinced that the ordinary meaning of the term "human consumption," as it is used in the context of the Analogue Act, clearly encompasses the use of a substance, by a human being, in a manner that would introduce the

substance into the body. This conclusion is supported by legal dictionaries, which define "consumption" to include "use." *See, e.g., Black's Law Dictionary* 359 (9th ed. 2009) (defining "consumption" as "the use of a thing in a way that exhausts it"); *Ballentine's Law Dictionary* (3d ed. 2010) (available on LEXIS) (defining "consumption" as "use of a thing, sometimes, but not necessarily, to the complete extermination of the thing."). The conclusion is further supported by case law and statutes from other jurisdictions defining "consumption" and "human consumption," in the context of controlled substances. *See State v. Ireland,* 2005 UT App. 22, P19, 106 P.3d 753 (Utah Ct.App. 2005) (concluding that the term "consumption," as used in a state controlled substance statute, described the introduction of a substance into the body); *see also* Tex. Health & Safety Code § 481.002(21) (defining "human consumption" as "the injection, inhalation, ingestion, or application of a substance to or into the human body"); Mich. Comp. Laws Serv. § 333.7105(8) (defining "human consumption" to mean "application, injection, inhalation, or ingestion by a human being"); N.M. Stat. Ann. § 30–31–2(X) (defining "human consumption" to include "application, injection, inhalation, ingestion, or any other manner of introduction").

The court, thus, rejects McFadden's argument that "the only definition of [human consumption] that would seem to make sense in context would embrace the idea of 'eat or drink.' " (Docket No. 134 at 14.) Such a limited reading would be completely at odds with the purpose of the Analogue Act. As many

controlled substances are commonly used by injection and inhalation, the court does not think that Congress could have intended for the term "human consumption" to exclude such methods, or for the Act to otherwise extend only to analogues that are taken like food or drink. Instead, the court holds that other methods of introducing a substance into the body fall within the ordinary meaning of the term "human consumption," as that term is used in the statute.

For all of these reasons, the court concludes that the Analogue Act is not unconstitutionally vague as applied to methylone, MDPV, and 4–MEC.

II. *The Court's Instructions to the Jury*

McFadden next argues that the court improperly instructed the jury on the elements of the conspiracy and distribution offenses charged in the indictment. During trial, McFadden requested an instruction that would have (1) advised the jury that a substance does not qualify as a controlled substance analogue unless it is both chemically similar to a particular controlled substance and physiologically similar to the same controlled substance; and (2) specified the controlled substance to which each of the alleged analogues must be compared. McFadden also proposed an instruction that would have required the government to prove, inter alia, that the defendant knew that chemical structures of the substances at issue were substantially similar to the chemical structures of controlled substances in Schedule I or II. The court instead gave its own instructions, to which McFadden objected.

For the conspiracy offense charged in Count One of the indictment, the jury was instructed that it had to be convinced that the government had proven each of the following elements beyond a reasonable doubt:

> FIRST: That beginning in or around June 2011, and continuing until February 15, 2012, two or more persons, directly or indirectly, reached an agreement or understanding to accomplish a common plan;
>
> SECOND: That the defendant knew the purpose of the agreement, and joined in it willfully, that is, with the intent to further the purpose of the plan;
>
> THIRD: That the purpose of the plan was to distribute or possess with intent to distribute, for human consumption, a mixture or substance containing MDPV, MDMC/Methylone, or 4–MEC, which has an actual intended, or claimed stimulant, depressant, or hallucinogenic effect on the central nervous system that is substantially similar to that or greater than the stimulant, depressant, or hallucinogenic effect on the central nervous system of a controlled substance in Schedule I or II of the Controlled Substances Act; and
>
> FOURTH: That the chemical structure of MDPV, MDMC/Methylone, or 4–MEC is substantially similar to the chemical structure of a controlled substance in Schedule I or II of the Controlled Substances Act.

(Docket No. 152 at 23–24.)

For the offense of distributing a controlled substance analogue, as charged in Counts Two through Nine of the indictment, the jury was instructed that the government was required to prove, as to each count, the following essential elements beyond a reasonable doubt:

> FIRST: That the defendant knowingly and intentionally distributed a mixture or substance that has an actual, intended, or claimed stimulant, depressant, or hallucinogenic effect on the central nervous system that is substantially similar to or greater than the stimulant, depressant, or hallucinogenic effect on the central nervous system of a controlled substance in Schedule I or II of the Controlled Substances Act;
>
> SECOND: That the chemical structure of the mixture or substance is substantially similar to the chemical structure of a controlled substance in Schedule I or II of the Controlled Substances Act; and
>
> THIRD: That the defendant intended for the mixture or substance to be consumed by humans.

(*Id.* at 34.)

After further review, the court remains convinced that the foregoing instructions are consistent with the plain language of the Analogue Act and the Fourth Circuit's decision in *Klecker*. The

second and third clauses of § 802(32)(A), which relate to actual and claimed physiological effects, require the alleged analogue to be substantially similar to "*a* controlled substance," rather than "*the* controlled substance" used to prove chemical similarity in clause (i). 21 U.S.C. § 802(32)(A) (emphasis added). Likewise, in setting forth the elements that must be proven to establish an Analogue Act violation, the Fourth Circuit observed that the government must prove substantial chemical similarity between the alleged analogue and "a controlled substance," and "that the alleged analogue has effects similar to those of a controlled substance or that the defendant intended or represented that the substance would have such effects." *Klecker,* 348 F.3d at 71 (emphasis added). The court elected to use the same language in instructing the jury in this case, and the defendant has failed to persuade the court that the instructions were in error in this regard.

The court is also of the opinion that its instructions on the scienter elements of the conspiracy and distribution offenses were appropriate. As set forth above, the court's instructions required the government to prove that the defendant intended for the substances to be consumed by humans, in accordance with 21 U.S.C. § 813. The court's instructions also required the government to prove that the defendant knowingly and intentionally distributed a substance that had an actual, intended, or claimed physiological effect that was substantially similar to or greater than that of a controlled substance, and that the purpose of the conspiratorial agreement was to distribute or possess

with intent to distribute such substances. While McFadden would have also required the government to prove that he knew that the alleged analogues have a chemical structure that is substantially similar to the chemical structure of a controlled substance and, thus, that they were, in fact, controlled substance analogues under the Act, the court remains convinced that this is not required by the statute or Fourth Circuit precedent. *See Id.* at 71–72 (setting forth the elements of an Analogue Act violation and noting that the Act "would not be unconstitutionally vague as applied to Foxy even with respect to a defendant who lacked actual notice [that Foxy was a controlled substance analogue]"); *see also United States v. Desurra,* 865 F.2d 651, 653 (5th Cir. 1989) ("If a defendant possesses an analogue, with intent to distribute or import, the defendant need not know that the drug he possesses is an analogue. It suffices that he know what drug he possesses, and that he possess it with the statutorily defined bad purpose."); *but see United States v. Turcotte,* 405 F.3d 515, 522 (7th Cir. 2005) (holding that "[a] defendant must know that the substance at issue has a chemical structure substantially similar to that of a controlled substance, and he or she must either know that it has similar physiological effects or intend or represent that it has such effects").

The court also declined to give the defendant's proposed instruction distinguishing a conspiracy from a buyer-seller relationship, and instead gave its own buyer-seller instruction to the jury. To the extent defendant maintains that this decision was erroneous, the court disagrees.

The court's instructions to the jury on the conspiracy count included the following:

> I ... tell you that the existence of a mere buyer-seller relationship alone is insufficient to support a conspiracy conviction, even if the buyer intends to resell the purchased drugs to others. However, you may consider the purchase of drugs for resale, along with all the other evidence, in determining whether there was a conspiratorial agreement between the buyer and seller, or other persons, to distribute or possess with intent to distribute, controlled substance analogues.

(Docket No. 152 at 29.) This instruction is clearly consistent with existing Fourth Circuit precedent. *See United States v. Hackley,* 662 F.3d 671, 679 (4th Cir. 2011) ("We have held that evidence of a continuing buy-sell relationship when coupled with evidence of large quantities of drugs, or continuing relationships and repeated transactions, creates a reasonable inference of [a conspiratorial] agreement.") (internal citation and quotation marks omitted); *United States v. Mills,* 995 F.2d 480, 485 n. 1 (4th Cir. 1993) (noting that "evidence of a buy-sell transaction is at least relevant (i.e. probative) on the issue of whether a conspiratorial relationship exists").

McFadden's proposed instruction, taken from a former edition of the Seventh Circuit Pattern Federal Jury Instructions, included a list of nine factors that the jury could consider in deciding whether a buyer

and a seller formed a conspiracy to distribute controlled substance analogues.[3] Based on the Seventh Circuit's criticism of the instruction in *United States v. Colon,* 549 F.3d 565, 570–571 (7th Cir. 2008), the instruction has been modified to delete the factors requested by McFadden. *See* Pattern Federal Jury Instructions for the Seventh Circuit—Criminal, No. 5.10(A) (2012 ed.) ("In *Colon,* the Seventh Circuit was critical of the previously-adopted pattern instruction on this point, which included a list of factors to be considered. The Committee has elected to simplify the instruction....").

Accordingly, for the reasons stated, the court concludes that McFadden's motion must be denied to the extent he argues that the court erred in rejecting his proffered jury instructions.

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[3] The requested factors were as follows: (1) whether the seller extended credit to the buyer for the purchase of the controlled substance analogues; (2) whether the seller instructed the buyer in how to distribute controlled substance analogues; (3) whether the seller had a shared stake in the buyer's resale of the controlled substance analogues; (4) whether the seller controlled the buyer in the conduct of his resale of the controlled substance analogues; (5) the quantity of controlled substance analogues sold; (6) the length of time over which the seller sold controlled substance analogues to the buyer; (7) whether one of the parties advised the other on the conduct of the other's business; (8) whether either had agreed to warn the other of threats to the business from competing dealers or from law-enforcement authorities; and (9) whether there was any understanding between them limiting how either conducted their business. (Docket No. 139 at 9.)

III. *Admissibility of Expert Testimony*

McFadden next argues that the court should not have permitted evidence concerning animal studies. At trial, McFadden moved to exclude testimony from one of the government's experts, Dr. Cassandra Prioleau, on the ground that her opinions were based on animal studies involving controlled substances. After considering the reliability and relevance standards set forth in Rule 702 of the Federal Rules of Evidence[4] and *Daubert v. Merrell Dow Pharmaceuticals, Inc.,* 509 U.S. 579 (1993),[5] the court

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[4] Rule 702 provides that a witness "who is qualified as an expert by knowledge, skill, experience, training, or education may testify in the form of an opinion or otherwise if: (a) the expert's scientific, technical, or other specialized knowledge will help the trier of fact to understand the evidence or to determine a fact in issue; (b) the testimony is based on sufficient facts or data; (c) the testimony is the product of reliable principles and methods; and (d) the expert has reliably applied the principles and methods to the facts of the case." Fed.R.Evid. 702.

[5] In *Daubert,* the Supreme Court announced five factors that the trial court may use in assessing the relevancy and reliability of proffered expert testimony: (1) whether the particular scientific theory "can be (and has been) tested"; (2) whether the theory "has been subjected to peer review and publication"; (3) the technique's "known or potential rate of error"; (4) the "existence and maintenance of standards controlling the technique's operation"; and (5) whether the technique has achieved "general acceptance" in the relevant scientific or "expert community." *Daubert,* 509 U.S. at 593–94. Rather than providing a definitive or exhaustive list, *Daubert* illustrates the types of factors that will "bear on the inquiry." *Id.* at 593. The Supreme Court emphasized that the analysis must be "a flexible one." *Id.* at 594; *see also Kumho Tire Co., Ltd. v.*

denied the motion in open court, finding that there was a sufficient basis for receipt of Dr. Prioleau's opinions.

For the reasons stated on the record, the court remains convinced that Dr. Prioleau's testimony was properly admitted, and that the alleged shortcomings identified by the defendant went to the weight it should be given rather than its admissibility. The animal studies relied upon by Dr. Prioleau were thoroughly challenged on cross-examination and by McFadden's own expert witness, and it was ultimately up to the jury to decide whether her testimony was credible and how much weight to give her opinions. Accordingly, the court concludes that it did not err in admitting Dr. Prioleau's testimony, and that the defendant's motion for judgment of acquittal on this ground must be denied. *See United States v. Moreland,* 437 F.3d 424, 431 (4th Cir. 2006) (emphasizing that "[t]he court need not determine that the proffered expert testimony is irrefutable or certainly correct," since "[a]s with all other admissible evidence, expert testimony is subject to testing by 'vigorous cross-examination, presentation of contrary evidence, and careful instruction on the burden of proof' ") (quoting *Daubert,* 509 U.S. at 596).

IV. *The Sufficiency of the Evidence*

Carmichael, 526 U.S. 137, 141–42 (1999) (holding that *Daubert's* factors neither necessarily nor exclusively apply to every expert).

Finally, McFadden challenges the sufficiency of the evidence to support his convictions. Specifically, McFadden argues that the evidence was insufficient to establish that methylone, MDPV, and 4–MEC have actual, intended, or claimed stimulant effects on the central nervous system that are substantially similar to or greater than the stimulant effects on the central nervous system of a controlled substance in Schedule I or II of the Controlled Substances Act. For the following reasons, the court is unable to agree.

When a motion for judgment of acquittal is based on a claim of insufficient evidence, the jury verdict "must be sustained if there is substantial evidence, taking the view most favorable to the Government, to support it." *Glasser v. United States,* 315 U.S. 60, 80 (1942). "Substantial evidence is evidence that a reasonable finder of fact could accept as adequate and sufficient to support a conclusion of a defendant's guilt beyond a reasonable doubt." *United States v. Green,* 599 F.3d 360, 367 (4th Cir. 2010). In determining whether substantial evidence supports the verdict, the court considers both circumstantial and direct evidence, drawing all reasonable inferences from such evidence in the government's favor. *United States v. Harvey,* 532 F.3d 326, 333 (4th Cir. 2008). The court does not reweigh the evidence or reassess the jury's determination of witness credibility, *United States v. Brooks,* 524 F.3d 549, 563 (4th Cir. 2008), and can overturn a conviction on insufficiency grounds "only when the prosecution's failure is clear," *United States v. Moye,* 454 F.3d 390, 394 (4th Cir. 2006) (internal quotation marks omitted).

Applying these principles, the court is convinced that the government presented sufficient evidence to establish actual, intended, or claimed physiological similarity between each of the alleged analogues and a controlled substance. Specifically, the jury heard sufficient evidence to find that methylone, MDPV, and 4–MEC have actual, intended, or claimed stimulant effects on the central nervous system that are substantially similar to or greater than the stimulant effects on the central nervous system of a controlled substance in Schedule I or II of the Controlled Substances Act.

Dr. Prioleau, a drug science specialist employed by the Drug Enforcement Administration, testified as an expert witness for the government on the physiological effects of the alleged analogues. Dr. Prioleau first summarized her evaluation of methylone. Based on her review of drug discrimination studies involving animals, as well as case reports and other scientific literature, Dr. Prioleau opined that methylone would have stimulant effects on the central nervous system that are substantially similar to that of MDMA (ecstasy), a Schedule I controlled substance.

In evaluating the effects of MDPV, Dr. Prioleau reviewed drug discrimination and locomotor studies involving animals, as well as case reports detailing the effects that people experienced when taking MDPV. Additionally, Dr. Prioleau performed a structural activity relationship analysis. Based on the results of that analysis, as well as the reports contained in the existing scientific literature, Dr. Prioleau opined that MDPV would have stimulant

effects on the central nervous system that are substantially similar to those of methcathinone, a Schedule I controlled substance.

With respect to 4–MEC, Dr. Prioleau testified that it was an emerging substance and, thus, that there were not yet any published studies on its pharmacological effects. Consequently, Dr. Prioleau performed a structural activity relationship analysis, which incorporated a review of relevant scientific literature. Based on that analysis, Dr. Prioleau opined that 4–MEC would also have stimulant effects on the central nervous system substantially similar to those of methcathinone.

The court is of the opinion that Dr. Prioleau's testimony, standing alone, was sufficient to allow a reasonable juror to find that methylone has stimulant effects substantially similar to or greater than those of MDMA, and that MDPV and 4–MEC have stimulant effects substantially similar to or greater than those of methcathinone.[6] While McFadden criticizes Dr. Prioleau's testimony on the basis that she relied on "qualitative" analyses, as

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[6] Thus, the court notes that, even if the defendant is correct in arguing that an alleged analogue must be both chemically and physiologically similar to the same controlled substance to meet the requirements of § 802(32)(A), the government's evidence was sufficient in this regard. As summarized above, the government's evidence established that the chemical structure of methylone is substantially similar to that of MDMA, and that MDPV and 4–MEC have chemical structures substantially similar to the chemical structure of methcathinone.

opposed to "quantitative" evaluations of the alleged analogues, McFadden's argument is unsupported by the existing case law applying the Analogue Act. *See, e.g., United States v. Brown,* 415 F.3d 1257, 1267–68, 1272 (11th Cir. 2005) (holding that the visual assessment method used by the governments' experts to assess substantial similarity under § 802(32)(A)(i), while not quantitative or testable by scientific method, was admissible, and that the expert testimony provided a reasonable basis for concluding beyond a reasonable doubt that the chemical structure of the alleged analogue was substantially similar to that of a controlled substance); *United States v. Klecker,* 228 F.Supp.2d 720, 729 (E.D.Va. 2002) (rejecting the defense expert's attempts "to apply the same test for finding a substantially similar stimulant, depressant or hallucinogenic effect under the statute as the medical community requires for the approval of new prescription drugs to be utilized in medical treatment"). Moreover, the fact that McFadden provided his own expert testimony from Dr. Matthew Lee does not undermine the court's conclusion as to the sufficiency of the government's evidence. *See Brown,* 415 F.3d at 1271 ("That a defendant has provided some testimony to support his theory of the case is not enough to show insufficient evidence, because the factfinder is free to reject that testimony.").

In addition to Dr. Prioleau's expert opinions, the government presented testimony from Toby Sykes, who purchased bath salts from Lois McDaniel, and consumed them by mixing the bath salts with water and injecting them into his body. Sykes testified that

he regularly used methamphetamine, a Schedule II controlled substance, from 1987 until 2006, and that the effects of the bath salts he purchased from McDaniel were more potent than those of methamphetamine.[7] While McFadden argues that there were no laboratory certificates confirming what Sykes consumed, there was sufficient evidence for the jury to infer that the substances consumed by Sykes were the same substances that McDaniel purchased from McFadden.

In addition to the foregoing testimony, the government played a recorded telephone call from August 25, 2011, during which McFadden compared one of his bath salt products containing 4–MEC to cocaine. During the same conversation, McFadden referenced MDPV when describing another bath salt product that he compared to crystal methamphetamine. The court agrees with the government that this evidence further supports the jury's findings with regard to physiological similarity under § 802(32)(A).

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[7] Sykes' comparison to methamphetamine was consistent with additional testimony provided by Dr. Prioleau. When asked to describe the actual effects that methylone, MDPV, and 4MEC would have on the central nervous system, Dr. Prioleau testified that the effects would include, among others, decreased appetite, restlessness, and increased blood pressure, heart rate, and body temperature. Dr. Prioleau noted that such effects are common characteristics of stimulants, and, thus, that other stimulants, such as cocaine and methamphetamine, have similar effects.

In sum, the evidence was sufficient to establish, beyond a reasonable doubt, that methylone, MDPV, and 4–MEC have actual, intended, or claimed stimulant effects on the central nervous system that are substantially similar to or greater than those of a controlled substance in Schedule I or II. In the absence of any other meritorious arguments, McFadden's convictions must be sustained.

Conclusion

For the reasons stated, McFadden's motion for judgment of acquittal will be denied. The Clerk is directed to send certified copies of this memorandum opinion to all counsel of record.

ENTER: This 10th day of May, 2013.

/s/ Glen Conrad

Chief United States District Judge

APPENDIX D

FILED: June 17, 2014

UNITED STATES COURT OF APPEALS
FOR THE FOURTH CIRCUIT

No. 13-4349

(3:12-cr-00009-GEC-1)

UNITED STATES OF AMERICA
Plaintiff – Appellee

v.

STEPHEN DOMINICK MCFADDEN, a/k/a/ Stephen Domin McFadden
Defendant – Appellant

ORDER

The petition for rehearing en banc was circulated to the full court. No judge requested a poll under Fed. R. App. P. 35. The court denies the petition for rehearing en banc.

For the Court

/s/ Patricia S. Connor, Clerk