OPINION TESTIMONY BEFORE THE US SENTENCING COMMISSION

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Introduction

In this statement, I provide personal opinions and recommendations on various ways to improve consistency, clarity, and coverage in the Sentencing Guidelines. I address several points, as highlighted in the outline below. These opinions are informed by the scientific literature, careful review of the current Sentencing Guidelines, and analysis and observations from having served as an expert witness at sentencing hearings over the past few years. The Sentencing Guidelines are generally logical and internally consistent in the structured guidance they provide for sentencing in cases involving drug-related offenses. However, there are specific areas in which the internal consistency and/or clarity can be improved, as well as additional coverage that is made necessary by emerging designer drugs. I focus my attention on a few of these areas. Specific recommendations include:

1. Remove inconsistencies and perceived ambiguities; provide disambiguation instruction
    a. THC vs. marijuana
    b. Synthetic cannabinoid substance vs. synthetic marijuana
    c. What if two or more substances can be identified as the "most closely related"?
2. Add representative new designer drugs (synthetic cannabinoids and cathinones)
    a. Synthetic cannabinoids: JWH-018 and AB-FUBINACA
    b. Synthetic cathinones: Methylone, MDPV, alpha-PVP
3. Reconsider the "marihuana equivalency" standard

Summary of proposed revisions (Executive Summary)

In conjunction with opinions and recommendations outlined above and discussed herein, I propose the following specific changes to the Sentencing Guidelines:

Under Application Note 6, addition of the italicized text is proposed:

"In the case of a controlled substance that is not specifically referenced in this guideline, determine the base offense level using the marihuana equivalency of the most closely related controlled substance referenced in this guideline. *If an unlisted substance is closely related to two or more listed substances, then the Rule of Lenity shall apply, and the lowest marijuana equivalency of the closely related substances shall be applied to the unlisted substance.* In determining the most closely related controlled substance, the court shall, to the extent practicable, consider…"

Under Cocaine and Other Schedule I and II Stimulants (and their immediate precursors)*, I propose the following additions:*

- *1 gm of 3,4-Methylenedioxymethcathinone/Methylone = 100 gm of marijuana*
- *1 gm of α-pyrrolidinovalerophenone/alpha-PVP = 100 gm of marijuana*
- *1 gm of 3,4-Methylenedioxy-α-pyrrolidinovalerophenone/MDPV = 40 gm of marijuana*
- *1 gm of Other Synthetic Cathinone Substances (unless covered elsewhere in these Guidelines) = 100 gm of marijuana*

Under Schedule I Marijuana *and other Cannabinoids (note the broader classification to include other cannabinoids) I propose the following revisions:*

- 1 gm of Marijuana/Cannabis, granulated, powdered, etc. = 1 gm of marijuana
- ~~1 gm of Hashish Oil = 50 gm of marijuana~~
- 1 gm of Cannabis Resin or Hashish = 5 gm of marijuana
- *1 gm of Tetrahydrocannabinol (natural or synthetic) = 7 gm of marijuana*
- *1 gm of Synthetic Marijuana ("Spice", "fake pot" etc.; a smokeable mixture comprising plant material and a Schedule I or II synthetic cannabinoid substance) = 1 gm of marijuana*
- *1 gm of JWH-018, a synthetic cannabinoid substance = 14 gm of marijuana*
- *1 gm of AB-FUBINACA, a synthetic cannabinoid substance = 14 gm of marijuana*
- *1 gm of Synthetic Cannabinoid Substance (unless otherwise listed, when possessed for the purpose of making synthetic marijuana) = 14 gm of marijuana*

1. Remove perceived ambiguities and inconsistencies; provide disambiguation instruction.

The Guidelines should provide clear and unambiguous guidance on a sentencing structure that promotes logical and consistent sentences. Inconsistencies and logical disconnects translate into increased risk of unnecessary sentencing disparities.

1a. THC vs marijuana: *The Drug Equivalency of THC should be 1:7, to reflect better the amount of THC in actual marijuana*. The current marijuana equivalency of THC is inconsistent with the amount of THC in marijuana. Illicit marijuana today is commonly ≥12% THC by weight. Thus, 1 gram of THC is contained in as little as 7-8 grams of marijuana. However, the Drug Equivalency Tables identify 1 gram of THC as equivalent to 167 grams of marijuana. The amount of THC often found in only 7-8 grams of marijuana is thus treated as the equivalent of 167 grams of marijuana. The arbitrarily high marijuana equivalency of THC has created problems when considering sentences for cannabinoid substances that can be ambiguously compared to either THC or marijuana.

There are other pairs of substances in which an active ingredient and its natural source are treated consistently. Just like THC is the active ingredient in marijuana, psilocin and psilocybin are active ingredients in hallucinogenic mushrooms. Likewise, mescaline is the active ingredient in peyote. In these sets of substances, the marijuana equivalencies of the pure active ingredient and the source material scale roughly according to the doses. For example, psilocin and psilocybin each has a marijuana equivalency of 1:500 and a standard dose of 10 mg. The marijuana equivalencies of dry and wet hallucinogenic mushrooms are 1:1 and 1:0.1, respectively, with standard doses of 5 grams and 50 grams. Thus, one could start with 50 grams of wet mushrooms, dry it down to 5 grams of dry mushrooms, and then extract out ca. 10 mg of psilocin and/or psilocybin. (These ballpark numbers chosen based on the dosage chart in the Sentencing Guidelines are consistent with the actual range of concentrations found in the mushroom.) At any point in the process, the marijuana equivalency of the substance in question would be 5 grams of marijuana. However, one could start with 5 grams of actual marijuana, extract out <1 gram of THC, and in so doing increase the marijuana equivalency to >100 grams of marijuana. In other words, 5 grams of marijuana has the potential to equal >100 grams of marijuana if one extracts the active ingredient.

If THC is adjusted as proposed, then the marijuana equivalency of Hashish Oil (1:50) should also be adjusted. I suggest removing Hashish Oil as a specific line item and allow it to be treated as a "*mixture or substance containing a detectable quantity of* [THC]"; marijuana equivalency = 1:7. Thus, Hashish Oil would be treated as pure concentrated THC.

If one treats marijuana itself as a "*mixture or substance containing a detectable quantity of* [THC]", then 5 grams of marijuana could be treated as 5 grams of THC, and 5 grams of THC equals 835 grams of marijuana using the 1:167 ratio. Confusion surrounding the statement that "the weight of a controlled substance set forth in the table refers to the entire weight of any mixture or substance containing a detectable amount of the controlled substance" is addressed in the next section.

1b. Synthetic cannabinoid substance vs. synthetic marijuana. "Synthetic marijuana" is a mixture or substance containing plant material and a detectable quantity of a synthetic cannabinoid substance that is intended for smoking as an alternative to marijuana. It is reasonable and logical that a substance intended to mimic marijuana should be assigned a marijuana equivalency ratio of 1:1.

According to the DEA, "synthetic marijuana" is generally prepared by mixing 1 part of a synthetic cannabinoid substance with 13 parts of an inert plant material. Therefore, 1 gram of a pure synthetic cannabinoid substance can be (and perhaps typically is) used to produce 14 grams of synthetic marijuana. If the "object of the attempt" is to produce 14 grams of synthetic marijuana from 1 gram of synthetic cannabinoid substance, then the appropriate marijuana equivalency ratio for a pure synthetic cannabinoid substance is 1:14. In other words, if the active ingredient of synthetic marijuana represents $1/14^{th}$ of the total weight, then the marijuana equivalency of various synthetic cannabinoid substances should be 1:14.

There should be separate listings for synthetic marijuana and for the specific synthetic cannabinoid substances, just as there are separate listings for THC and marijuana, for mescaline and peyote, and for psilocin and psilocybin and hallucinogenic mushrooms. Some courts have treated synthetic marijuana as if it were pure THC (i.e., a "*mixture or substance containing a detectable quantity of* [synthetic cannabinoid substance]"), resulting in penalties based largely on the weight of the inert plant carrier material. Other courts have focused on the amount of the pure synthetic cannabinoid substances involved. In my opinion, reasonable and consistent penalties should focus on the amount of the controlled substance, not the inert plant carrier material.

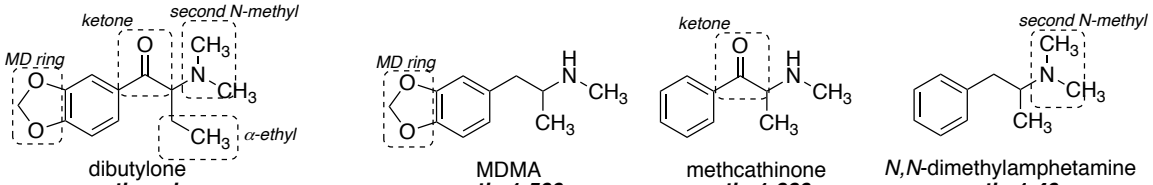
The Department of Justice recommends a 4-fold increase in penalty for synthetic cannabinoids relative to THC. In my efforts to craft an internally consistent and logical set of marijuana equivalencies for various cannabinoid substances, I effectively recommend a 2-fold increase in penalty for synthetic cannabinoids relative to THC — the marijuana equivalency of the synthetic cannabinoids should be 1:14, whereas THC should be 1:7. Note that based on current estimates, the amount of the active synthetic cannabinoid substance in synthetic marijuana ($1/14^{th}$; or about 7%) is less than the amount of THC in actual marijuana by roughly a factor of 2. Thus, assigning synthetic marijuana a marijuana equivalency ratio of 1:1 also captures the approximately 2-fold increase in penalty for synthetic cannabinoids relative to THC.

I recommend that the active ingredients of synthetic marijuana (e.g., JWH-018, AM-2201, and/or other synthetic cannabinoid substance) should be categorically listed with a marijuana equivalency of 1:14. Specific examples of synthetic cannabinoid substances should be provided to avoid confusion and to convey the intent of the categorical listing. As discussed later, I suggest listing JWH-018 and AB-FUBINACA, along with a categorical listing of synthetic cannabinoid substances.

I suggest that "synthetic marijuana" be listed in the Guidelines and defined as "a smokeable mixture comprising plant material and a Schedule I or II synthetic cannabinoid substance". Synthetic marijuana, which is intended to mimic the effects of actual marijuana, should be assigned a marijuana equivalency of 1:1. There is evidence to suggest that some of the synthetic cannabinoids are more potent than THC, but this potency is offset by preparations of synthetic marijuana with lower levels of active ingredient (assuming the DEA is correct in their statement on the general preparation).

Another way to achieve the same outcome is to list synthetic cannabinoids twice: once when found in smokeable form mixed with plant material (e.g., JWH-018, smokeable; marijuana equivalency 1:1), and again when found in pure form (e.g., JWH-018, actual; marijuana equivalency 1:14) to denote the molecular substance prior to production of the smokeable product.

1c. What if two or more substances can be identified as the "most closely related"? Application Note 6 in the Guidelines reads, "In the case of a controlled substance that is not specifically referenced in this guideline, determine the base offense level using the marihuana equivalency of the most closely related controlled substance referenced in this guideline." However, "most closely related" can be ambiguous. If two or more substances could reasonably be identified as the "most closely related controlled substance", then the Rule of Lenity should apply. One example is synthetic marijuana, which can be compared to either THC or marijuana. Another example is dibutylone, below.



The synthetic cathinone substance dibutylone is similarly comparable in chemical structure to MDMA, dimethylamphetamine, and methcathinone. Like dibutylone, all three of these listed substances have stimulant properties, and they share elements of the phenethylamine core, with each sharing an additional structural feature in common: the MD ring (MDMA), the dimethylamino (dimethylamphetamine), or the beta-ketone (methcathinone). At the present time, there is no reasonable, reliable, and consistent way to determine which substance is most similar to dibutylone.

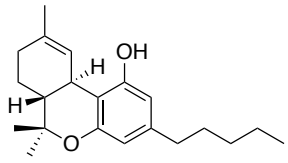
The Department of Justice references MDMA as the most closely related substance to dibutylone, although I contend that MDMA is least closely related of these three choices, because I subjectively consider the ketone and dimethylamino functional groups to be more important structural features than the MD ring. In my opinion, dimethylamphetamine and methcathinone are similarly related to dibutylone in terms of chemical structure; the ketone and dimethylamino are similarly important in my estimation. The Rule of Lenity resolves the dilemma over which of these two most closely related substances to choose. (Another example is that of ethylone, which has been compared to MDEA and to methcathinone, and there is ambiguity as to which is a better comparison.)

I suggest that the following directive be added to Application Note 6 of the Guidelines: "*If an unlisted substance is closely related to two or more listed substances, then the Rule of Lenity shall apply, and the lowest marijuana equivalency of the closely related substances shall be applied to the unlisted substance.*"

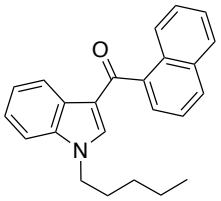
2. Add representative new designer drugs (synthetic cannabinoids and cathinones).

New designer drugs including synthetic cannabinoid substances and synthetic cathinones have been added to the list of controlled substances, and they should also be added—specifically and/or categorically—to the Drug Equivalency Tables in the Sentencing Guidelines.

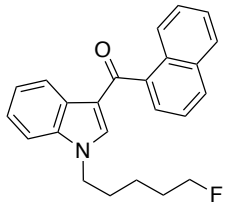
2a. Synthetic cannabinoids: JWH-018 and AB-FUBINACA. The Department of Justice suggests adding two synthetic cannabinoid substances — JWH-018 and AM-2201 — to the Drug Equivalency Tables. I agree with the proposed addition of JWH-018, and I suggest adding AB-FUBINACA (as opposed to AM-2201) as the second substance. There is a wide range of synthetic cannabinoid substances being used to produce "synthetic marijuana" in the emerging designer drug market. These substances should be treated categorically to the extent possible, but their diverse structures and properties require a thoughtful selection to provide unambiguous categorical coverage.



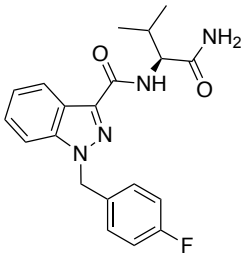
Δ^9-THC



JWH-018



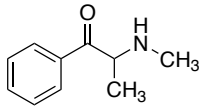
AM-2201



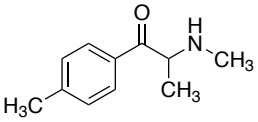
AB-FUBINACA

The categorical listing of "synthetic cannabinoids for the purpose of making synthetic marijuana" should be added to the Guidelines and assigned a marijuana equivalency of 1:14. (See section 1b above for the rationale as to why 1:14 is the appropriate ratio.) Examples of synthetic cannabinoids include JWH-018 and AB-FUBINACA. JWH-018 is arguably first and foremost among the synthetic cannabinoid substances; it is a logical choice to be listed in the Guidelines. The Department of Justice suggests listing AM-2201 as well. However, AM-2201 is "substantially similar" in chemical structure to JWH-018, and there is not much additional benefit to listing a second substance that is "substantially similar" to the first. In contrast, AB-FUBINACA diverges significantly from JWH-018. Providing AB-FUBINACA as the second example makes clear that coverage includes indoles and indazoles with different types of substituents at both the 1- and 3- positions. JWH-018 and AM-2201 define a very narrow range of structures because they themselves are so similar in structure.

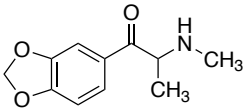
2c. Synthetic cathinones: Methylone, MDPV, alpha-PVP. The Department of Justice suggests adding three synthetic cathinone substances — methylone, mephedrone, and MDPV — to the Drug Equivalency Tables. Mephedrone need not be a high priority, in my opinion, because mephedrone is substantially similar in structure to methcathinone. Instead of mephedrone, I encourage the Commission to provide explicit sentencing guidance on alpha-PVP (aka "Flakka"). alpha-PVP is substantially similar in structure to pyrovalerone (a Schedule V substance), but alpha-PVP is now notorious as a stimulant drug of abuse.



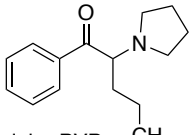
methcathinone



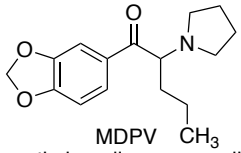
mephedrone
(4-methylmethcathinone)



methylone
(3,4-methylenedioxy-
methcathinone)



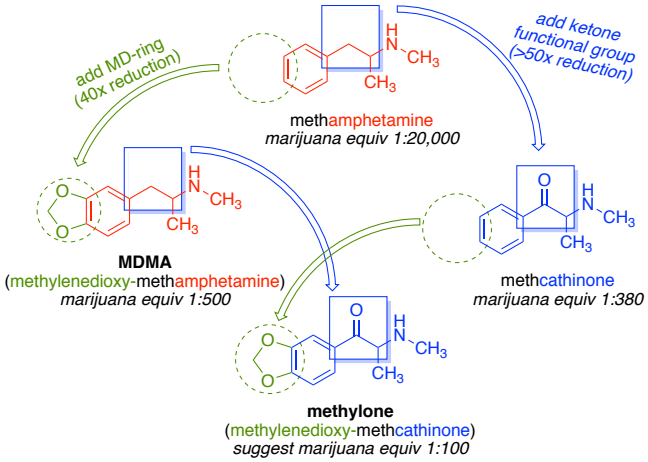
alpha-PVP
(α-pyrrolidino-
valerophenone)



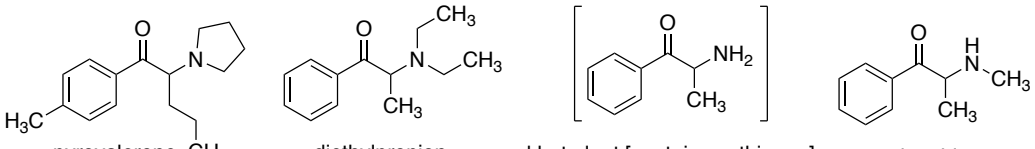
MDPV
(3,4-methylenedioxy-α-pyrrolidino-
valerophenone)

I suggest adding methylone and alpha-PVP to the Guidelines, each with a marijuana equivalency of 1:100. I suggest adding MDPV, the methylenedioxy- derivative of alpha-PVP, with an equivalency of 1:40. These new listings can then reasonably be extrapolated to other cathinone derivatives. In case other emerging synthetic cathinones cannot easily be related to one of these three listed substances, I propose to list "*Other Synthetic Cathinone Substances (unless covered elsewhere in these Guidelines)*" categorically with a marijuana equivalency of 1:100.

Listing these cathinone derivatives lower than methcathinone is consistent with amphetamine derivatives being listed lower than methamphetamine. N,N-dimethylamphetamine is listed at 1:40, and methylenedioxy-methamphetamine (MDMA) is listed at 1:500 (which itself may be too high), both of which are significant downward departures from pure methamphetamine (1:20,000; see graphic at right). Likewise, N,N-dialkyl-cathinones (like MDPV and alpha-PVP) and methylenedioxy-cathinones (like methylone and MDPV) should be listed at a reduced ratio relative to methcathinone.



cathinone substances covered in the current Guidelines:



pyrovalerone
Schedule V
ratio 1:0.00625 (160:1)

diethylpropion
Schedule IV
ratio 1:0.00625 (160:1)

khat plant [contains cathinone]
Schedule I
ratio 1:0.01 (100:1)

methcathinone
Schedule I
ratio 1:380

The Department of Justice is advocating for higher marijuana equivalencies for synthetic cathinones than what I suggest. They recommend marijuana equivalencies that are greater than or equal to that of methcathinone, but methcathinone is an outlier among cathinone substances referenced in the Guidelines. The Guidelines provide categorical recommendations for the cathinone substances diethylpropion (Schedule IV) and pyrovalerone (Schedule V): 160 gm of a Schedule IV/V substance = 1 gm of marijuana. Cathinone itself is found in the khat plant, which is assigned a marijuana equivalency of 1:0.01. Methcathinone, at 1:380, is the most severely punished cathinone referenced in the Sentencing Guidelines by a wide margin. Listing new cathinone derivatives with marijuana equivalencies lower than for methcathinone would maintain this trend, which is also consistent with what is seen among amphetamine derivatives (with methamphetamine at the high end).

3. Reconsider the "marihuana equivalency" standard

The Department of Justice suggests replacing the "marijuana equivalency" standard with a points system. This is a good idea, both because of the confusion they reference and because marijuana is an ambiguous, moving target. Marijuana is a heterogeneous mixture — different batches contain different amounts of the primary active ingredient, THC. THC itself is listed in both Schedules I and III, and societal attitudes towards both marijuana and THC are in flux.

I thank the Commission for allowing me the opportunity to offer these opinions, and I thank them in advance for considering my opinions in their future deliberations.