A Functionalist Approach to the Definition of "Cocaine Base" in § 841

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INTRODUCTION

Responding to the rise of crack cocaine in the early 1980s, Congress passed the Anti–Drug Abuse Act of 1986 (ADAA).[1] The ADAA amended 21 USC § 841 of the criminal code by creating a system of mandatory minimum sentences for the possession of different substances. The act was passed quickly, generating little legislative history beyond the floor debates.

The changes to § 841 were not without controversy. The new language of § 841 divided cocaine-based substances into two groups, identifying one with the term "cocaine" and the other with "cocaine base." A substantially smaller quantity of cocaine base is needed to trigger the mandatory minimum sentence under the statute. The ratio between the requisite quantities of cocaine to cocaine base is 100-to-1.[2] There is no definition of "cocaine base" or "cocaine" in the statute. A circuit split has developed over how to define cocaine base. The courts have split into three groups, one group adopting a chemical definition of "cocaine base," another group adopting a crack-only approach, and finally a group that is focused on a functional definition of "cocaine base" that relies on the available methods of consumption. The Supreme Court has yet to respond, though the split has existed for over a decade.

This Comment analyzes the circuit split and advocates the adoption of a functional, or smokeable, definition of "cocaine base." The Comment argues that a chemical definition of "cocaine" is too broad and that likewise a crack-only definition is too narrow. Based on the

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1 Pub L No 99-570, 100 Stat 3207, codified at 18 USC § 841 (2000).

2 Please note that the 100-to-1 ratio is the source of a significant amount of scholarly literature. Critics believe it unfairly punishes African-American drug users. This topic is beyond the scope of this Comment. For a discussion, see generally Andrew N. Sacher, Note, *Inequities of the Drug War: Legislative Discrimination on the Cocaine Battlefield*, 19 Cardozo L Rev 1149 (1997) (advocating a 3-to-1 ratio on grounds that the current ratio is racially discriminatory and without justification); Jason A. Gillmer, Note, United States v. Clary*: Equal Protection and the Crack Statute*, 45 Am U L Rev 497, 509 (1995) (arguing that the 100-to-1 ratio in § 841(b) is unconstitutional because it violates equal protection rights); David A. Sklansky, *Cocaine, Race, and Equal Protection*, 47 Stan L Rev 1283 (1995) (arguing that the distinction made in sentencing between cocaine and crack cocaine raises fairness issues and is evidence of unconscious racism).

text of the statute, this Comment argues that the smokeable definition provides a compromise between the two other proposals and a more natural reading of the term "cocaine base." Additionally, this Comment analyzes the congressional debates and contends that the purpose behind the passage of the ADAA was to address the larger drug problems facing the nation. Adding a scientific analysis of how cocaine affects the body, this Comment concludes that a smokeable definition best fits the purposes behind § 841.

This Comment proceeds by providing a general background to the relevant issues in Part I. Part sets forth the arguments for and against each of the potential solutions the lower courts have raised. Finally, Part III suggests a new justification for the functionalist approach, focusing first on the text of § 841, which is analyzed in light of the rule of lenity, and then on the purposes behind its amendment.

I. BACKGROUND

This Part lays out some of the background necessary to understand the circuit split. Part I.A gives a brief history of § 841's development. Part I.B describes the structure of the statute and present each of the interpretations of cocaine base. Part I.C provides an introduction to various forms of cocaine, discussing how they are made and consumed. Finally, the Part I.D will discuss how the method of consumption changes the impact of the drug on the user.

A. A Brief History of § 841

The history of § 841 underscores Congress's concern with the advent of new drugs like crack cocaine. The Anti–Drug Abuse Act of 1986 amended § 841, introducing enhanced mandatory minimum penalties for possessing specified drugs.[3] The passage of the ADAA was unusual. Congress acted quickly, forgoing normal deliberative processes such as committees and reports.[4] The little history that does exist comes either from the floor debates over the passage of the Act or the draft bills each chamber proposed.[5] In many ways, the Act's rapid passage makes the language of § 841 more difficult to define. Traditional committee reports that might discuss the finer points of the statutory language are absent.

3 See *United States v Jackson*, 968 F2d 158, 160 (2d Cir 1992) (discussing the amendment of § 841 and finding the amendment and corresponding enhanced penalty provisions constitutional).

4 See *United States v Brisbane*, 367 F3d 910, 912 (DC Cir 2004).

5 See *United States v Shaw*, 936 F2d 412, 415 (9th Cir 1991) (reviewing the legislative history of the ADAA, including the separate House and Senate bills).

The quick passage of the ADAA appears to have been a response to the crack cocaine epidemic.[6] Crack cocaine is a unique drug. It is a freebase form of cocaine[7] that can be smoked, similar to freebase cocaine and cocaine paste.[8] Unlike other forms of freebase, crack cocaine is not dangerous to make. Where making freebase cocaine requires the use of flammable chemicals, crack cocaine uses baking soda.[9] This difference in composition made crack cocaine safer and cheaper to produce, ultimately making it more lucrative to sell.[10] Part of what has made crack cocaine so lucrative is the intense addiction it creates. Unlike snorted powder cocaine, the high from crack cocaine is shorter and more intense, causing individuals to become quickly addicted.[11]

The rise of crack cocaine created additional social problems beyond the heavy addiction suffered by its users. Crack cocaine became a significant source of income for gangs.[12] Gangs created hierarchical structures to control the sale of crack cocaine in various areas.[13] This territoriality led to an increase in community violence. Gang violence was compounded by addicts who would engage in risk-taking behaviors,

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6 See *Brisbane*, 367 F3d at 912–14 (observing that in the years preceding the passage of the ADAA "[c]rack spread rapidly through several large cities," and that "wide availability" was an important factor in instituting more severe punishments).

7 A "freebase form of cocaine" is a form in which the cocaine base has been chemically treated so as to release the cocaine alkaloid into a mixture, typically one that can be smoked. This should not be confused with freebase cocaine, which is a form of freebase. Freebase cocaine, as discussed in Part I.C, refers to a specific process by which the drugs are treated.

8 *Shaw*, 936 F2d at 415 ("To 'freebase' means to 'use cocaine by heating it and inhaling the smoke.'"), quoting Robert L. Chapman, ed, *New Dictionary of American Slang* 147 (Harper & Row 1986).

9 Gillmer, 45 Am U L Rev at 509 (cited in note 2) (observing that because the recipe for crack cocaine involves relatively harmless ingredients—water, baking soda, a microwave oven—it may be produced through "an easier and safer method than . . . freebase cocaine," which requires ether).

10 James A. Inciardi, *Beyond Cocaine: Basuco, Crack, and Other Coca Products*, 14 Contemp Drug Probs 461, 470 (1987) (describing how the method of processing cocaine into rocks enabled a seller to split $60 dollars of cocaine into as many as 30 "rocks," which could then be sold for $5 to $20 each).

11 United States Sentencing Commission, Report to the Congress: Cocaine and Federal Sentencing Policy 19 (May 2002), online at http://www.ussc.gov/r_congress/02crack/2002crackrpt.pdf (visited Apr 16, 2007) (observing that by smoking the drug, 30 to 60 percent of the crack cocaine "is absorbed almost immediately into the bloodstream and reaches the brain in only 19 seconds") ("2002 Report to the Congress" hereinafter).

12 Sudhir Alladi Venkatesh and Steven D. Levitt, *"Are We a Family or a Business?" History and Disjuncture in the Urban American Street Gang*, 29 Theory & Socy 427, 442–44 (2000) (describing how crack "offered the ghetto dweller far greater opportunities for illicit income generation").

13 Id at 444 ("[T]he introduction of crack-cocaine required a new economy of scale in narcotics trading and, to realize the new transportation and communication exigencies, in several major cities the vertical-hierarchical supergang structure proved to be an adequate administrative apparatus.").

such as armed robbery, to support their addictions.[14] Between the actions of the addicts and the gangs there was an increase in crime that correlated with the rise in crack cocaine.[15]

The spring of 1986 marked a high point of public attention relating to the crack epidemic.[16] As media attention grew, public pressure to respond to crack cocaine intensified. Congress responded by passing the ADAA, which amended § 841.[17]

It is important to note that crack cocaine is not the first drug epidemic the country has faced. Drug use tends to be cyclical, with certain drugs growing in popularity and then waning as new substances are developed.[18] The natural life cycle of the drug market often leaves Congress in the position of catching up with new epidemics when fashioning drug laws.[19]

B. The Statutory Language

The changes Congress adopted in passing the ADAA are codified in 21 USC § 841. The statute provides mandatory minimum punishment levels for offenders in possession of particular quantities of a controlled substance with the intent to distribute or manufacture illicit drugs.[20] Section 841(b) creates the penalties for violating the statute. It is divided into two major parts, § 841(b)(1)(A) and § 841(b)(1)(B). Each subsection is structured in an identical manner; the only differences between the subsections are the quantities of drugs and correlating

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14 Eric Baumer, et al, *The Influence of Crack Cocaine on Robbery, Burglary, and Homicide Rates: A Cross-City, Longitudinal Analysis*, 35 J Rsrch Crim & Delinq 316, 317–18 (1998) (describing why crack users "are willing to consider illegitimate solutions" to generate cash, and the illegal activities pursued to that end).

15 Roland G. Freyer, Jr., et al, *Measuring the Impact of Crack Cocaine* 6–7 (NBER Working Paper No 11318, May 2005), online at http://pricetheory.uchicago.edu/levitt/Papers/FryerHeatonLevittMurphy2005.pdf (visited Apr 16, 2007) ("We estimate that crack is associated with a 5 percent increase in overall violent and property crime in large U.S. cities between 1984 and 1989.").

16 Craig Reinarman and Harry G. Levine, *Crack in Context: Politics and Media in the Making of a Drug Scare*, 16 Contemp Drug Probs 535, 535–36 (1989) (recounting three "drug scares" that commanded congressional and public attention in 1986, 1988, and 1989).

17 See Inciardi, 14 Contemp Drug Probs at 471 (cited in note 10) (discussing the effect of lurid media depictions on raising the crack profile as Congress started work on the ADAA).

18 Bruce D. Johnson, et al, *Drug Abuse in the Inner City: Impact on Hard-Drug Users and the Community*, 13 Crime & Justice: A Review of Research 9, 12–17 (1990) (analyzing periods of concentrated use of various drugs, including heroin, marijuana, cocaine and crack cocaine).

19 Think for a moment about methamphetamine. Ten years ago it was a little known drug used only in some parts of the country. Over the last decade it has exploded into one of the most serious drug threats facing the United States. Legislatures across the country have scrambled to respond not only in the passage of sentencing laws like § 841, but also in seeking to control pseudoephedrine, the over-the-counter drug that is the main ingredient in methamphetamine.

20 See 21 USC § 841(a)(1).

punishments ordered by the statute.[21] The language that has caused a circuit split is present in both subsections. This Comment uses the language of § 841(b)(1)(A) throughout in order to demonstrate the circuit split and the arguments presented by the courts. Though the Comment focuses on § 841(b)(1)(A), the arguments addressed are applicable to both subsections of § 841.

Cocaine derivatives are divided into two categories in § 841. Under § 841(b)(1)(A)(ii)(II), also known as "clause (ii)," a defendant is punished for the possession of "5 kilograms or more of a mixture or substance containing a detectable amount of—cocaine, its salts, optical and geometric isomers, and salts of isomers."[22] Thus if a substance is classified as cocaine or one of its salts under § 841(b)(1)(A), a defendant receives a mandatory minimum sentence of ten years so long as he possessed at least five kilograms.

The second place where cocaine derivatives appear is in § 841(b)(1)(A)(iii), also known as "clause (iii)." In clause (iii) an offender is punished if he possesses "50 grams or more of a mixture or substance described in clause (ii) which contains cocaine base."[23] Under § 841(b)(1)(A) a defendant in possession of fifty grams of cocaine base receives a mandatory minimum sentence of ten years imprisonment.

Compare now the difference between someone punished under clause (ii) versus clause (iii). An individual having the intent to distribute or manufacture illicit substances and in possession of a substance defined as cocaine base triggers the mandatory minimum sentence by possessing an amount that is 1/100 of the quantity needed if the substance was labeled cocaine.

Though neither the Supreme Court nor Congress has addressed the confusion over the definition of "cocaine base," the United States Sentencing Commission (USSC) addressed a similar problem. The language of the Sentencing Guidelines contained the same ambiguity, referring to cocaine base as a substance which triggers a higher level

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21 Drugs punished under 21 USC § 841(b)(1)(A) receive a ten-year mandatory minimum sentence, while drugs punished under 21 USC § 841(b)(1)(B) receive only a five-year mandatory minimum sentence. See 21 USC § 841(b)(1) (2000 & Supp 2002).

22 21 USC § 841(b)(1)(A)(ii)(II).

23 21 USC § 841(b)(1)(A)(iii). Interestingly, Congress followed a different form when creating the cocaine base provision than it did with some of the other provisions in § 841. For example, any reference to phencyclidine is followed by the more common name for the substance, PCP. See, for example, 21 USC § 841(b)(1)(A)(iv). The implication might be that Congress, in failing to put crack into the statute to qualify cocaine base, was looking to create a more expansive definition.

of punishment. The USSC resolved the ambiguity by defining cocaine base as crack.[24]

C. The Different Forms of Cocaine

A good understanding of the tension provided by the definition of "cocaine base" in § 841 and the circuit split requires some familiarity with the various cocaine substances involved. The courts draw fine distinctions in their definitions predicated on the differences between various cocaine derivatives. Two characteristics are important in understanding the differences between derivatives: the way in which they are made and the manner in which they can be consumed.

The process of making the various forms of cocaine starts with processing the coca plant. There are five forms of cocaine relevant to the discussion of § 841: cocaine hydrochloride, cocaine paste, cocaine base, crack cocaine, and freebase cocaine. Each of these forms of cocaine derives from the coca plant.[25] In order to process the coca plant the leaves are placed in a bin and mixed with sodium carbonate, water, and eventually kerosene.[26] The leaves are agitated, generally by stomping on them. The purpose of this process is to release the cocaine alkaloid from the coca leaf.[27] The alkaloid is the active ingredient in all forms of cocaine regardless of how they are further processed.[28] One could think of cocaine alkaloid as having a role in cocaine products, such as crack, cocaine base, and cocaine hydrochloride, similar to that of THC in marijuana.[29]

After being agitated the leaves are diluted in an acid solution before being treated in sodium carbonate for a second time. The purpose of these treatments is to draw out the cocaine alkaloid and allow it to

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24 See United States Sentencing Commission, Guidelines Manual § 2D1.1(c) note D (2006) (defining cocaine base as "crack," which is "usually prepared by processing cocaine hydrochloride and sodium bicarbonate").

25 Drug Enforcement Administration, Coca Cultivation and Cocaine Processing: An Overview (1993), online at http://www.mindfully.org/Farm/Coca-Cultivation-Processing-DEA1sep93.htm (visited Apr 16, 2007) (describing the geography and history of cocaine production before describing the process of making the various substances).

26 Id.

27 Id.

28 The importance of this point will be raised again throughout this Comment. It is crucial to remember that regardless of whether the user is taking crack, cocaine hydrochloride, or another cocaine derivative, the cocaine alkaloid is the active psychotropic substance.

29 Tetrahydracanobinol (THC) is the main psychoactive ingredient in marijuana. When marijuana is smoked, THC is the primary ingredient responsible for altering motor skills, changing the heart rate of the user, and impacting the short term memory of the taker. See, *Introduction to How Marijuana Works*, online at http://science.howstuffworks.com/marijuana.htm (visited Apr 16, 2007).

precipitate into a dried, putty-like substance. This substance is known as coca paste or cocaine paste.[30]

Cocaine base—as a chemically defined compound—is processed from cocaine paste. The process of creating the base is more involved than that of creating cocaine paste. The cocaine paste is treated with hydrochloric acid and potassium permanganate. After standing for some time the solution is filtered and ammonia is added.[31] A precipitate forms in the solution and is dried. This precipitate is what is commonly referred to as cocaine base, which has a chemical formula of $C_{17}H_{21}NO_4$.[32] When reference is made to the "chemical definition of cocaine base" this is the substance being discussed. This substance, however, is generally not consumed. As a result of its chemical state it has no psychotropic effects for the user.

From cocaine base each of the other substances can be made by giving the base various treatments. Cocaine hydrochloride, also known as powder cocaine, is made by dissolving cocaine base or coca paste in hydrochloric acid and water. Potassium permanganate is added to draw out unwanted substances from the mixture. Ammonia is then added to the liquid and a precipitate is formed and dried.[33] The precipitate is cocaine hydrochloride. The substance has a distinct chemical formula, $C_{17}H_{21}NO_4HCl$.[34]

Crack cocaine is made by continuing the treatment of the cocaine hydrochloride mixture. The precipitate, which can be dried into powder cocaine, is instead boiled in a mixture of sodium bicarbonate and water. During the boiling a solid substance separates from the liquid.[35] This substance is dried into a lumpy, cream-colored, rock-like substance known as crack cocaine.[36]

Freebase cocaine is created in much the same fashion as crack cocaine. The process of creating freebase cocaine uses different chemicals. Freebase cocaine is made by taking the cocaine hydrochloride solution and mixing it with water and ammonia. A precipitate is

30 Coca Cultivation and Cocaine Processing (cited in note 25).

31 Id.

32 *Jackson*, 968 F2d at 161 (relating the testimony of an expert chemist on the chemical formula of cocaine base).

33 United States Sentencing Commission, Special Report to the Congress: Cocaine and Federal Sentencing Policy 12 (Feb 1995), online at http://www.ussc.gov/crack/exec.htm (visited Apr 16, 2007) (describing forms of cocaine and their methods of use) ("1995 Report to the Congress" hereinafter).

34 *Jackson*, 968 F2d at 161.

35 *Crack Cocaine*, online at http://www.streetdrugs.org/crack.htm (visited Apr 16, 2006) (providing facts about crack cocaine use, including the process for extracting crack from powder cocaine).

36 See *United States v Easter*, 981 F2d 1549, 1558 (10th Cir 1992).

formed and ethyl ether is added, which separates from the water and is siphoned off. That ether is dried and becomes freebase cocaine.[37]

One crucial difference between these various treatments is how the substance can be consumed upon completion. Cocaine hydrochloride, for example, is processed to be a salt and is therefore water soluble.[38] It can be effectively consumed orally, by nasal inhalation (snorting), and by injection—if mixed with water first.[39] Cocaine hydrochloride cannot be smoked, however. The temperature at which cocaine hydrochloride vaporizes, thus releasing the cocaine alkaloid, is higher than the temperature at which the alkaloid decomposes.[40] When the cocaine alkaloid is destroyed no psychotropic effects are felt from consumption.[41]

Crack cocaine, cocaine paste, and freebase cocaine, however, are bases and are not water soluble. Each of these substances could be consumed orally or nasally, but such consumption would produce innocuous effects.[42] Each of these substances, though, can be smoked.[43] As a result of being treated with various chemicals, each substance has a lower vaporization temperature. The temperature is low enough to release the cocaine alkaloid with only limited decomposition.[44] Psychotropic effects are strongly felt as a result of smoking these substances.

Although each of the derivatives of the coca plant is closely related, changes in the way that they are processed alter their physical characteristics. As will be demonstrated in the next subsection, the important characteristic that varies between the derivatives is the manner in which the substance can be consumed.

A glossary of terms should help clarify the meaning of each of these forms of cocaine as the Comment progresses.

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37 See http://www.cocaine.org/process.html (visited Apr 16, 2007).

38 1995 Report to the Congress at 12 (cited in note 33).

39 Id.

40 Id at 12–13 (noting that the vaporization point for cocaine hydrochloride is 388 degrees Fahrenheit).

41 Id.

42 Id at 13–14.

43 *Easter*, 981 F2d at 1558 (noting that one of the primary differences between crack and cocaine is the difference in the melting points of the two substances).

44 1995 Report to the Congress at 13 (cited in note 33) (noting that forms of cocaine base have vaporization points of around 208 degrees Fahrenheit, which is 180 degrees lower than that of cocaine hydrochloride).

TABLE I: GLOSSARY

Term Used	Meaning
Cocaine Alkaloid	The active psychotropic ingredient in all forms of cocaine.
Cocaine Base	Cocaine base that has not been processed and as a result cannot be effectively consumed.
Cocaine Hydrochloride (Powder Cocaine)	A form of cocaine that is *not smokeable* and is typically consumed by snorting a fine, white powder.
Cocaine Freebase	A form of cocaine base that has been treated in some way to make it consumable, including crack cocaine, freebase cocaine, and cocaine paste.
Crack Cocaine	A *smokeable* derivative of cocaine base that has been treated with sodium bicarbonate.
Freebase Cocaine	A *smokeable* derivative of cocaine base, hydrochloride, and ethyl ether.
Coca/Cocaine Paste	A *smokeable* putty-like substance that is both a precursor to, and potential derivative of, cocaine base.

D. The Method of Consumption's Importance for the Effects of Cocaine

Cocaine alkaloid is the active ingredient in each of the derivatives of cocaine. Despite differences in physical characteristics and in methods of consumption, the active ingredient remains constant regardless of the form of cocaine. The difference in the drugs' effects is explained by the method of consumption, not by the adulteration of the cocaine alkaloid. As was noted in a 1995 congressional report, "While cocaine in any form—paste, powder, freebase, or crack—produces the same type of physiological and psychotropic effects, the onset, intensity, and duration of its effects are related directly to the method of use."[45]

The effect of the drug is based on how quickly the cocaine alkaloid can enter the body and affect the central nervous system.[46] There are two primary factors in determining the speed at which cocaine alkaloid affects the body: the surface area of exposure and the amount of blood flow at the site of absorption.[47] A larger surface area of expo-

45 Id at 14.

46 Id.

47 Id. It is appropriate to note here that intravenous cocaine use provides one of the most intense highs and dangerous forms of consumption. Id at 18 (noting that intravenous consumption increases the dangers of drug use because substances are injected directly into the bloodstream, thereby bypassing the body's natural safeguards). Intravenous use, however, will be set aside for the purposes of this Comment. First, intravenous use tends to be very rare. It is risky

sure produces a quicker high, as more of the cocaine alkaloid is able to get into the system in a shorter period of time. Additionally, the higher the blood flow at the site of absorption, the faster the cocaine alkaloid diffuses throughout body. The drug's effect is maximized by getting the cocaine alkaloid into the bloodstream in high quantities with as little adulteration as is possible.[48] Natural body defenses, such as metabolism, can remove parts of the drug's active ingredients, which lessens highs.[49]

Compare snorting cocaine with smoking it. Snorting cocaine exposes the nasal passage, which is a relatively small surface area, to the drug. The nasal passage allows diffusion into the bloodstream, but the diffusion is limited by a small surface area at the intake site.[50] Smoking, in comparison, relies on the lungs as the primary exposure site. The surface area of exposure in the lungs is substantially larger than in the nasal passage.[51] The size of the surface area allows a substantial amount of cocaine alkaloid to diffuse into the bloodstream in a short period of time. Since more of the drug is able to enter the system in a short period of time, the high from smoking tends to have a quicker onset, a shorter duration, and stronger intensity.[52]

The intensity of the high a user experiences with crack cocaine, as opposed to powder cocaine, translates into a difference in how the drug affects the user over time. Quicker, more intense highs tend to have a greater psychological impact, causing the user to feel a greater need for the substance.[53] There are two effects of this greater need for the substance: the addict tends to use the drug more often, and the

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both for the potential of overdose and for the potential of transmittable diseases. As a result, it is not a terribly common method of consumption. Second, intravenous use is notoriously difficult to punish. The drug is prepared by dissolving cocaine hydrochloride in water, thus it is difficult to target for punishment because it can be easily prepared immediately prior to use.

48 Id at 15 ("Of ultimate importance is the proportion of the drug reaching the central nervous system, particularly the brain—the primary site of action for drugs of abuse.").

49 Id (noting that the body's natural defenses treat the drugs like toxins, thereby attempting to remove them, and that the most effective methods of consumption are those that bypass the natural defenses of the body).

50 Id at 14–15 (suggesting that, all things equal, limited surface area in the nasal passage reduces the rate of diffusion).

51 Id (comparing the size of the surface area exposed during inhalation to a football field). See also Louis A. Pagliaro and Ann Marie Pagliaro, *Comprehensive Guide to Drugs and Substances of Abuse* 229 (APhA 2004) (The surface area of the lungs is virtually unlimited, in comparison with that of the nostrils, and consequently *so is the amount of cocaine base that can be absorbed from this site.*") (emphasis added).

52 Id.

53 See Barbara C. Wallace, *Crack Addiction: Treatment and Recovery Issues*, 17 Contemp Drug Probs 79, 82 (1990) (noting that the compulsive need for a high among crack users is stronger than among intranasal powder cocaine users, often placing them at greater risk for hospitalization for overdose).

addict tends to attempt to use more of the drug during each use.[54] As Congress noted in a 2002 report:

> [A]lthough both powder cocaine and crack cocaine are potentially addictive, administering the drug in a manner that maximizes its effect (for example, injecting or smoking) increases the risk of addiction. It is this difference in typical methods of administration, not differences in the inherent properties of the two forms of the drugs, that makes crack cocaine more potentially addictive to typical users. Smoking crack cocaine produces quicker onset of, shorter-lasting, and more intense effects than snorting powder cocaine. These factors in turn result in a greater likelihood that the user will administer the drug more frequently to sustain these shorter "highs" and develop an addiction.[55]

Thus, all of the substances are closely related and have the same active ingredient. The way in which the drugs are processed, however, changes the impact the active ingredient has on the body by altering the available methods of consumption for each substance.

II. The Circuit Split

Keeping in mind the technical foundation and statutory background provided in the last Part, this Part addresses the various approaches adopted by the circuits. The arguments and critiques raised in regard to each of the circuit positions are diverse. Laying out each of the positions—the chemical definition, the crack-only definition, and the smokeable definition—illuminates the strengths and weaknesses of the approaches and creates the foundation for a new solution.

A. The Chemical Definition

In trying to analyze the meaning of "cocaine base" in clause (iii) the Second,[56] Third,[57] and Tenth[58] Circuits rely on a textualist approach to the statute, applying a chemical definition to the meaning of "cocaine base." All three circuits analyze whether a particular substance constitutes cocaine base by the chemical composition of the substance.

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54 Id (noting that smoking crack cocaine "leads to more compulsive, higher-dose use").

55 2002 Report to the Congress at 19 (cited in note 11) (emphasis omitted).

56 See *United States v Jackson*, 968 F2d 158, 162 (2d Cir 1992) (upholding the distinction in § 841 after finding that the term "'cocaine base' has a precise definition in the scientific community").

57 See *United States v Barbosa*, 271 F3d 438, 461–67 (3d Cir 2001) (holding that "'cocaine base' encompasses all forms of cocaine base with the same chemical formula when the mandatory minimum sentences . . . are implicated").

58 See *United States v Easter*, 981 F2d 1549, 1557–58 (10th Cir 1992) (concluding that the "distinguishing factor of cocaine base is the absence of hydrochloric acid").

1. A textualist approach focuses the inquiry on a chemical definition of "cocaine base."

The Second, Third, and Tenth Circuits, actively supporting the chemical definition, focus primarily on textual canons of construction to support their interpretation. They also turn to the practical benefits of a technical definition and the independence of the courts from the influence of the USSC to advance their position.

The strongest argument in favor of the technical definition is derived from a canon of construction suggesting that when Congress uses a technical term it should be interpreted to intend the adoption of the term's technical meaning. The Second Circuit articulated the basic claim in *United States v Jackson*,[59] noting that Congress was presented with a range of potential terms.[60] The *Jackson* court argued that Congress was aware of the availability of the term "crack" but chose not to use it: "[r]ather, it chose a term of art that should be defined by reference to the scientific community from which it derives."[61]

The Tenth Circuit, in *United States v Easter*,[62] explained that the use of the term "base" in "cocaine base" makes it a term of art.[63] According to the *Easter* court, "[a] 'base' is defined as 'a compound (a lime, a caustic alkali, or an *alkaloid*) capable of reacting with an acid to form a salt.'"[64] A chemical definition of "cocaine base" is sweeping. It brings within the boundaries of the statute a variety of substances including crack, freebase cocaine, untreated cocaine base, and undried cocaine hydrochloride. According to the *Jackson* court, the implication of selecting "cocaine base" was to include all of these substances.[65]

The *Easter* court further suggested that a textualist reading of the statute has practical benefits for identifying the substances in court. The chemical composition of cocaine base is scientifically determined

59 968 F2d 158 (2d Cir 1992).

60 See id at 162–63 (noting that other terms such as "crack" were available to Congress, thus making the selection of "cocaine base" a specific choice).

61 Id at 163 (observing that "many children on the street know the difference between powdered cocaine and crack," so Congress was presumably aware of the varied terminology and could have used "crack" if it intended to).

62 981 F2d 1549 (10th Cir 1992).

63 Id at 1558. The *Easter* court denied the defendant's argument that § 841(b)(1) fails to define "cocaine base" and is therefore void for vagueness. The court adopted the chemical definition not in response to party disagreement about the proper definition—the defendant had been caught with one kilogram of crack, so even the most narrow definition would have required a mandatory minimum of ten years—but in response to a challenge to the whole sentencing scheme.

64 Id at 1558, quoting *Webster's Third New International Dictionary* 180 (G&C Merriam 1981).

65 See *Jackson*, 968 F2d at 162 ("While we believe that Congress contemplated that 'cocaine base' would include cocaine in the form commonly referred to as 'crack' or 'rock' cocaine, Congress neither limited the term to that form in the plain language of the statute nor demonstrated an intent to do so in the statute's legislative history.").

to be $C_{17}H_{21}NO_4$.[66] This definition is distinct from that of cocaine hydrochloride, or $C_{17}H_{21}NO_4HCl$.[67] The fact that hydrochloric acid (HCl) is present in the chemical composition of powder cocaine prevents it from being treated as cocaine base. By using a technical or scientific meaning, the court would be able to categorize substances within § 841 based on objective criteria.[68] As the *Easter* court explained, "Due to these chemical and physical differences, an individual qualified by knowledge, skill, experience, training, or education is capable of distinguishing between the two compounds [cocaine and cocaine base]. Accordingly, we hold that 'cocaine base' is sufficiently defined . . . to prevent arbitrary and discriminatory enforcement."[69] *Easter* suggests that a chemical definition is rigid and easily identified.

A final argument, also raised by the *Jackson* court, contends that the definition of "cocaine base" provided by the USSC in the Sentencing Guidelines does not alter the definition of § 841. Defendants often claim that the Sentencing Guidelines—defining cocaine base as crack[70]—should be given significant weight in determining the meaning of clause (iii). The *Jackson* court rejected this argument by denying the authority of the USSC.[71] The court's duty is to follow the affirmative statements of Congress. It would be imprudent to impart substantial interpretive weight to "a parenthetical phrase in a drug equivalency table in an application note to a Guideline."[72] The authority of the USSC to influence clause (iii) is purely persuasive. Given the strong textual inclination of the *Jackson* court, the USSC has little persuasive authority.[73]

The Third Circuit, in *United States v Barbosa*,[74] extended this point, suggesting that relying on the USSC would undermine the law's consistency. The court argued that legal consistency was predicated on

66 *Jackson*, 986 F2d at 161.

67 Id (comparing the formula of cocaine base with the formula of cocaine hydrochloride, and noting their "different solubility levels, different melting points and different molecular weights").

68 *Easter*, 981 F2d at 1558 (describing how, based on chemical composition, any common scientist would be able to analyze and classify the nature of the substance definitively).

69 Id.

70 See USSG § 2D1.1(c) note D ("'[C]ocaine base,' for the purposes of this guideline, means crack.").

71 *Jackson*, 968 F2d at 162 ("We do not believe that a parenthetical phrase in a drug equivalency table in an application note to a Guideline is enough to narrow the meaning of the chemical term selected by Congress."). See also *Barbosa*, 271 F3d at 446 (noting that "nowhere . . . did Congress delegate to the Commission the power, directly or indirectly, to promulgate amendments to the statutory code itself").

72 *Jackson*, 968 F2d at 162.

73 See id at 163 (noting in response to the court in *Shaw* that "the language of the statute itself speaks to the issue," and therefore the USSC's language is not enough to overcome the plain text).

74 271 F3d 438 (3d Cir 2001).

a respect for court precedent. Until Congress affirmatively acts to change a law, a court's interpretation of the law is part of it.[75] The USSC cannot alter court precedent because it cannot change the law.

The Supreme Court in *United States v Neal*,[76] cited in *Barbosa*, recognized that trivializing precedent diminishes the impetus for a congressional response. The court warned that "were [they] to alter our statutory interpretation from case to case, Congress would have less reason to exercise its responsibility to correct statutes that are thought to be unwise or unfair."[77] Thus, a given interpretation of the law created by a circuit should remain in effect until the law changes or the circuit finds the decision to no longer be appropriate.[78]

The basic argument for the technical definition rests on the language of the statute and Congress's decision to adopt a term with a technical pedigree. Additional support for the interpretation is found in its ease of application and in the USSC's lack of persuasive authority.

2. A critique of the textualist position.

The major critique of the textualist interpretation stems from the perception that Congress did not intend to include unusable substances in clause (iii). Additionally, it has been argued that the textualist interpretation is too dismissive of the USSC.

The strongest argument against the chemical definition is that Congress was truly concerned with the distribution and manufacture of usable substances. The D.C. Circuit provided the major challenge to the textualist chemical definition in *United States v Brisbane*.[79] The court's position was that "Congress could hardly have intended to apply the enhanced penalties to forms of cocaine base that are not smokeable or even consumable without further processing, while imposing the lesser penalties on defendants dealing in similar amounts of ready-to-snort cocaine hydrochloride."[80] Chemically, cocaine base serves as the precursor to a number of the substances.[81] A scientific

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75 Id at 464 (noting the "unobjectionable proposition that a court must adhere to its prior decisions interpreting an Act of Congress, even in the face of a later, contrary interpretation or definition issued by the Sentencing Commission").

76 516 US 284 (1996).

77 Id at 296.

78 Id at 295 ("Once we have determined a statute's meaning, we adhere to our ruling under the doctrine of *stare decisis*, and we assess an agency's later interpretation of the statute against that settled law.").

79 367 F3d 910 (DC Cir 2004).

80 Id at 913.

81 See Section I.A.3. The *Brisbane* Court's point engenders at least one potential response. It is possible that the word "base" was meant in a vernacular sense. Thus, base could refer to "the main ingredient" or "the fundamental part of something." *Webster's Third New International*

definition includes both those substances that can be consumed and those that cannot. To the *Brisbane* court, the immediately consumable substances were the key. A chemical definition leads to the anomalous situation in which a substance that cannot be used is punished more harshly than one that can.[82]

The *Brisbane* court suggested that this result was unsupported in the legislative history.[83] There are no references to unusable substances in the congressional debates, which provide the richest source of legislative history on § 841.[84] There are numerous references, however, to crack.[85] Given the anomalous results that stem from defining cocaine base according to its chemical composition, the *Brisbane* court relied on the rule of lenity to suggest that the court should shy away from resolving the "cocaine base" definition broadly.[86] A broad definition of the term, such as the chemical definition, would lead to harsher punishments for more defendants. Hence, the court should avoid a chemical definition without better substantive support for it.

The Eleventh Circuit critiqued the textualist approach in *United States v Munoz-Realpe*[87] for underestimating the value of the USSC's interpretation of cocaine base. Though Congress had not affirmatively stated its agreement with the Sentencing Guidelines, the *Munoz-Realpe* court argues that "by allowing the amendment to take effect,

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Dictionary 180 (Merriam-Webster 1993). Under this reading of the term, cocaine base refers to any of the elemental subcomponents of the cocaine derivatives. The utility of subsection (iii) would be in prosecuting those manufacturing these derivatives—thereby placing the harshest punishment on those likely to be producing and selling large quantities of cocaine derivatives. This approach differs from the chemical definition in the sense that "cocaine base" is not being treated as a technical word. In its expanded sense, "cocaine base" would include not only those substances in the chemical definition, but also all other elemental parts of the derivatives—for instance, the coca leaves without which no viable illicit substance can be created. While facially plausible, this proposed definition immediately runs into textual problems. Section 841 (b)(1)(A)(ii)(I) punishes the possession of a mixture or substance containing "coca leaves, except coca leaves and extracts of coca leaves from which, cocaine, ecgonine, and derivatives of ecgonine or their salts have been removed." 21 USC § 841(b)(1)(A)(ii)(I). The structure of this subpart suggests that precursor or base substances are already addressed in the statute. Subsection (ii)(I) goes as far as focusing specifically on coca leaves that could still be used to make cocaine derivatives of various sorts. The text, as such, indicates that a vernacular definition, while plausible facially, would be incongruent with language and structure of the statute.

82 See *Brisbane*, 367 F3d at 913 (rejecting the literal approach in light of the "unusual circumstances" it fosters).

83 See id (asserting that the legislative history shows that Congress was specifically targeting crack).

84 See generally the floor debate in the Senate, 132 Cong Rec S 26433–66 (Sept 26, 1986).

85 See, for example, id at 26435 (Sen Chiles) (suggesting that the goal of interdiction is met in part by having enhanced penalties specifically for crack cocaine). See also *United States v Lopez-Gill*, 965 F2d 1124, 1130 (1st Cir 1992) (arguing that the legislative history demonstrates that Congress had a specific concern about crack cocaine).

86 *Brisbane*, 367 F3d at 913.

87 21 F3d 375 (11th Cir 1994).

Congress has given its imprimatur to the new definition of 'cocaine base.'"[88] Congressional acquiescence is necessary in order for the USSC interpretation of the Guidelines to take effect. Given the similarity of the language and purpose of clause (iii) and the language in the Sentencing Guidelines,[89] congressional silence has been interpreted as giving the Guidelines persuasive authority. The court's conclusion is supported by the fact that the term "cocaine base" is not commonly used, making the identical nature of the terms compelling.

B. The Crack-Only Definition

The Fourth[90] and Seventh[91] Circuits have articulated an approach that defines cocaine base to include only crack cocaine. These circuits move beyond the technical terminology of § 841 and look to the structure of the statute for guidance in deciphering the meaning of cocaine base.

1. Proposing a crack-only definition based on a reinterpretation of § 841 and Congress's goals in passing the statute.

Those circuits favoring the crack-only definition focus on the definition as a means to rationalize the text of § 841, align its meaning with the legislative intent, make coherent the relationship between the Guidelines and § 841, and improve the practical application of the statute.

The strongest argument in favor of a crack-only definition of "cocaine base" stems from an attempt to rationalize the language of § 841. The Fourth Circuit, in *United States v Fisher*,[92] contended that cocaine base must be treated as crack for the purposes of clause (iii) in order to "give meaning to all statutory provisions" within § 841.[93] The court's analysis started with clause (ii) of the statute, which extends punishment to the distribution or manufacture of "cocaine, its salts, optical and geometric isomers, and salts of isomers."[94] Listing cocaine separately from its salts creates the impression that cocaine has a distinct meaning from "its salts."[95]

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88 See id at 377.

89 See *United States v Shaw*, 936 F2d 412, 415 (9th Cir 1991) (presuming "that the Commission intended the terms they used to have the same meanings as the terms Congress used").

90 *United States v Fisher*, 58 F3d 96 (4th Cir 1995).

91 *United States v Edwards*, 397 F3d 570 (7th Cir 2005).

92 58 F3d 96 (4th Cir 1995).

93 Id at 99 (rejecting the defendant's argument that clause (ii) and clause (iii) overlap, and by overlapping, produce an ambiguity that should be resolved in the defendant's favor).

94 21 USC § 841(b)(1)(A)(ii)(II).

95 *Fisher*, 58 F3d at 98 (presenting the defendant's argument that "cocaine" in clause (ii) represents a distinct entity from the other language in the subsection).

The scope of cocaine, in the context of clause (ii), is confused. Cocaine hydrochloride is chemically a salt.[96] Thus, cocaine hydrochloride appears to be accounted for by "its salts." Many, however, assumed that the term "cocaine" in clause (ii) was meant to refer to cocaine hydrochloride.[97] The *Fisher* court pointed out that cocaine hydrochloride cannot be represented by both "cocaine" and "its salts" because the language of clause (ii) would then be inexplicably redundant.[98] Instead, the court argued that "cocaine" is meant to refer to the chemical compound referred to as cocaine base.[99] This conclusion follows because in clause (ii) each element of the statute is a derivative of cocaine.[100] Cocaine hydrochloride is a derivative of cocaine base.[101] "Cocaine base" thus serves the broader purposes of "cocaine" in clause (ii). Clause (ii) could thus be rewritten to state that punishment extends to persons in possession of "*cocaine base*, its salts, optical and geometric isomers, and salts of isomers."

Other potential definitions of "cocaine" are unworkable. For instance, cocaine could be defined as representing coca leaves. All of the substances would be derivatives of the leaves. But coca leaves are already provided for in the statute,[102] and thus such an understanding would be redundant. Cocaine base appears to be the most natural fit to define cocaine.

Clause (iii) is implicated because clauses (ii) and (iii) are part of one mandatory minimum sentencing provision. Clause (iii) states that punishment shall be conferred upon an individual with "50 grams or more of a mixture or substance described in clause (ii) which contains cocaine base."[103] The addition of "cocaine base," according to the *Fisher* court, is what makes the substance in clause (iii) distinguishable.[104] If "cocaine base" in clause (iii) has the same meaning as "cocaine" in clause (ii), then the same substance will be subject to two different quantity requirements. Such an outcome is untenable. The

96 *Brisbane*, 367 F3d at 913 ("Since cocaine hydrochloride is a salt, it is covered by subsection (ii)'s reference to 'its salts.'").

97 See *Fisher*, 58 F3d at 99.

98 See id (including "cocaine powder and other forms of cocaine identified therein, except for crack cocaine" in clause (ii)).

99 See id at 98. Cocaine base, in its chemical sense, refers to $C_{17}H_{21}NO_4$. See Part II.B.1.C for a discussion of how the compound figures into the production of cocaine and other related drugs.

100 See 21 USC § 841(b)(1)(A)(ii)(II) ("[C]ocaine, *its* salts, optical and geometric isomers, and salts of isomers.") (emphasis added).

101 Id. See also Part I.A.3.

102 See 21 USC § 841(b)(1)(A)(ii)(I).

103 21 USC § 841(b)(1)(A)(iii).

104 See *Fisher*, 58 F3d at 99 ("In order to give a rational purpose to clause (iii), we must conclude that the statute's explicit reference in clause (iii) to cocaine base indicates an intent to address separately the trafficking of cocaine base.").

Fisher court argues that "cocaine base" in clause (iii) is meant to refer to a particularly dangerous drug—crack cocaine.[105] The distinction between clauses (ii) and (iii) would then be predicated on the insidiousness of the substance, with the harsher punishment following the more dangerous substance.[106] For clauses (ii) and (iii) to be distinct, "cocaine" in clause (ii) must be treated as cocaine base (in a chemical sense) and "cocaine base" in clause (iii) must be treated as crack. Thus clause (iii) could be rewritten to suggest that punishment attaches to the possession of "50 grams or more of a mixture or substance described in clause (ii) which contains *crack cocaine*."

The crack-only definition finds some support in the language used during the floor debates over the passage of § 841. The Seventh Circuit, in *United States v Edwards*,[107] contended that Congress was particularly concerned with the social impact of crack cocaine.[108] The *Edwards* court's point is supported by some of the language used during the floor debates. Senator Paula Hawkins remarked that "[d]rug addiction turns people into walking crime machines. It is about time we did something for parents who hope and pray that their little children will be able to resist the powerful lure of illegal drugs during their vulnerable adolescent period."[109] Senator Joseph Biden suggested that the primary concern of the bill is to curb the use of drugs.[110]

The *Edwards* court drew the conclusion that the purpose behind the passage of the Act was to curb the growth of crack by punishing it more harshly. The method Congress selected to accomplish that end was to apply "enhanced penalties . . . to crack cocaine," with "lesser penalties . . . to all other forms of cocaine."[111] In the eyes of the *Edwards* court, this is a statute about curbing the use of crack cocaine by stopping its distribution.

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105 See id (concluding that clause (iii) must be intended to impose a heavier penalty on crack cocaine "because of its more destructive nature").

106 The conclusion has some intuitive appeal. Cocaine base is punished more harshly in that it takes less of the substance to trigger the mandatory minimum sentence. The difference between clause (ii) and clause (iii) would be natural if it were predicated on defining "cocaine base" narrowly to include only crack.

107 397 F3d 570 (7th Cir 2005).

108 Id at 574 ("Canvassing the legislative history, we concluded that the overriding Congressional concern behind the stiffer penalties for cocaine base was the alarming rise in the use of crack, a new, smokable form of cocaine that was more dangerous than powder cocaine, less expensive, and highly addictive.") (quotation marks and citation omitted).

109 132 Cong Rec at S 26436 (Sen Hawkins).

110 Id at S 26436–37 (Sen Biden) (arguing that "[w]e do have an epidemic in this country with regard to all kinds of controlled substances").

111 *Edwards*, 397 F3d at 574.

Additionally, the *Edwards* court argued that there is a relationship between the actions of the USSC and Congress.[112] The USSC and Congress were facing the same challenge in trying to determine which substances should receive the highest levels of punishment. Both bodies appeared to struggle with the appropriate choice of language. The *Edwards* court suggested that Congress and the USSC chose the same language and came to the same conclusion—"cocaine base" means crack.[113] *Edwards* seems to assert that the USSC's substantive expertise enhances its persuasive authority.

Finally, a crack-only definition helps to rationalize the practical application of § 841. Since the *Fisher* and *Edwards* courts were concerned with the use of drugs, it would be fitting to divide the substances between clause (ii) and clause (iii) based upon the effects of the drugs. Both psychologically and physiologically, crack ravages a person's system in a way that is more deleterious than cocaine hydrochloride. Beyond making individuals more likely to commit crimes,[114] crack cocaine also has a more intense effect on users.[115] If the *Edwards* court's concern was the danger of use, and this division exists in the statute, it would be strange to read "cocaine base" to include those things that are not usable. Defining "cocaine base" as crack accomplishes both the removal of unusable substances from clause (iii) and provides a distinction in the treatment of cocaine hydrochloride and crack cocaine that is reflective of the varying impact on the user.[116]

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112 See id (asserting that Congress and the Sentencing Commission were "similarly motivated" by the "alarming rise in the use of crack").

113 Id. Prior to *Edwards*, the Seventh Circuit had not established whether a revision in the 1993 Sentencing Guidelines defining "cocaine base" as crack cocaine would also influence the Circuit's application of § 841. In *United States v Booker*, 70 F3d 488 (7th Cir 1995), the Seventh Circuit had refused to apply the definition introduced in the 1993 Guidelines to conduct preceding their enactment. See id at 489–90 (explaining that the revision represents a substantive change, which would not be applied retroactively unless the Commission so specified). In subsequent cases, an ambiguity arose whether the revised definition would be limited to the Guidelines or also applied to sentencing under § 841. The *Edwards* court definitively opted for the latter.

114 See Freyer, et al, *Measuring the Impact of Crack Cocaine* at 6–7 (cited in note 15) (linking the rise in crack use for a 5 percent increase in violent crime between 1984 and 1989).

115 United States Sentencing Commission Public Hearing, Testimony of Dr. Glen R. Hanson 3–4 (Feb 25, 2002), online at http://www.ussc.gov/hearings/2_25_02/hanson.pdf (visited Apr 16, 2007) (noting that because of the duration, rapidity of onset, and intensity of the high, crack cocaine has a greater physiological impact on the individual).

116 *Edwards*, 397 F3d at 574 (acknowledging that the disparity was designed to meet "the alarming rise in the use of crack, a new, smokable form of cocaine that was more dangerous than powder cocaine, less expensive, and highly addictive," but questioning if the disparity in mandatory minimums was proportional to the additional threat posed by crack) (quotation marks and citation omitted).

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2. The crack-only definition is underinclusive and difficult to implement and operate.

The two critiques of the crack-only definition focus on its underinclusive nature and on the difficulty that arises from identifying it in court. Courts supporting the crack-only definition do not take the reasoning behind its adoption to its logical conclusion. The Ninth Circuit in *United States v Shaw*[117] argued that the crack-only definition improperly leaves out additional usable substances comparable to crack, such as freebase cocaine and cocaine paste.[118] The *Shaw* court tied these substances together because they can all be inhaled, giving them the same effect.[119] If usability is the guiding principle for the interpretation of § 841's definition of "cocaine base," then it is difficult to draw a line that includes crack cocaine but not other forms of smokeable cocaine base.

The *Brisbane* court extended the *Shaw* critique. The *Brisbane* court argued that defining "cocaine base" to include just crack makes the statute inflexible.[120] The logic of the crack-only definition is, in part, based on a belief that we should punish the distribution and manufacture of the most insidious drugs more harshly. The *Brisbane* court responded to that concern by suggesting that a flexible definition of "cocaine base" is able to more aptly respond as new drugs are developed.[121] Given the cyclical nature of drug use and the importance of the method of consumption, some flexibility in the statute increases its utility over time.

Additionally, identifying a substance as crack, as opposed to any other form of cocaine base, requires additional expertise, raising trial costs. The *Jackson* court focused on the fact that the textualist interpretation of the statute had a simple chemical test to determine inclusion.[122] There is no such definition for "crack cocaine," which often relies on characteristic and purity tests for identification. Though there are chemical tests that aid the identification of crack cocaine, much of

117 936 F2d 412 (9th Cir 1991).

118 See id at 417.

119 See id (concluding that "cocaine base" means cocaine that can be smoked on the basis that the House bill referred to smokeable cocaine and "[n]othing in the legislative history indicates that the Senate version intended a different meaning"). See also United States Sentencing Commission Public Hearing, Testimony of Dr. Glen R. Hanson at 3 (cited in note 115) (grouping all forms of freebase together as distinguished from cocaine hydrochloride, based in part on the method of consumption).

120 *Brisbane*, 367 F3d at 914 ("Given the statute's use of the broad term 'cocaine base,' it is unlikely Congress intended to limit the enhanced penalty provisions to one manufacturing method.").

121 See id (cautioning that it would be "hazardous to predict what this illicit 'industry' will come up with next").

122 See Part II.A.1.

the definitive analysis relies on expert testimony.[123] To the extent that ease of identification is a virtue, it is prudent to have the simplest system possible. Crack cocaine is more difficult to identify.

A crack-only definition moves towards the inclusion of the most insidious substances, but remains relatively underinclusive while increasing the rigidity of the statute and the complexity of proof at trial.

C. The Smokeable Definition

The Ninth Circuit has chosen to take a functionalist approach to the definition of the term "cocaine base" by focusing on whether the drug is smokeable in order to define its inclusion within § 841.[124]

1. Support for the smokeable definition in the available legislative history.

The *Shaw* court focused on its interpretation of Congress's intent as the primary reason to adopt the smokeable definition, using the language of the Sentencing Guidelines to draw further support for its argument. In addition, the ability to tie a number of drugs together under one statute and the flexibility of the definition are arguments raised for the smokeable definition.

Support for the smokeable definition is found most strongly in the legislative history of § 841. The ADAA was passed in a rush, leaving the original House and Senate versions of the bill and some floor debates as the primary sources of legislative history.[125] The *Shaw* court, nonetheless argued that there are indications of congressional intent that can be found within the actions of the chambers.[126] According to the *Shaw* court, the language of the original Senate and House proposals were different in a key respect. The House bill contained the term "cocaine freebase," instead of "cocaine base."[127] The definition of "cocaine freebase" referred to the fact that one consumed the drug "by heating [the cocaine] and inhaling the smoke."[128] The method of consumption was the defining characteristic.

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123 See, for example, *United States v Richardson*, 225 F3d 46, 50 (1st Cir 2000) (noting that chemical identification alone is not sufficient to separate crack from the rest of the substances thought of as cocaine base); *Jackson*, 968 F2d at 163 (recognizing the difficulty of identifying crack cocaine using a purity test).

124 See *Shaw*, 936 F2d at 415–16.

125 See Part I.A.1 for a further discussion of the history of the ADAA.

126 936 F2d at 415–16 (analyzing the legislative history by focusing on the different House and Senate versions of the bill).

127 See id (comparing the language of the bills and noting that Congress adopted the Senate's version).

128 Id at 415, quoting Chapman, *New Dictionary of American Slang* at 147 (cited in note 8).

The fact that different language was included in the final bill is not decisive. The *Shaw* court contended that, though the language of the Senate ultimately found its way into § 841, nothing suggested that cocaine base was meant to be treated differently from cocaine free-base.[129] The distinction, according to the *Shaw* court, is form without substance—though the words are different they were intended to mean the same thing. Moreover, the court pointed to the discussion of crack during the floor debates as an indication of Congress's concern with smokeable forms of cocaine base.[130] The *Shaw* court argued that the focus on crack represented the use of a colloquial term to describe the process of inhalation, which Congress considered to be the truly dangerous aspect of the substance.[131]

The *Shaw* court further supported its interpretation by examining the language of the Sentencing Guidelines.[132] The court noted that the Sentencing Guidelines use the term "crack" to define "cocaine base." Applying a definitional argument similar to one the court applies to free-base, the *Shaw* court suggested that crack's distinguishing characteristic is its capacity to be smoked.[133] As a result of this defining characteristic, the court assumed that the USSC was concerned with the method of consumption.[134] The *Shaw* court presented both the USSC and the House as using terms, such as "crack" and "freebase," to indicate a concern with the method by which these substances are consumed.

Additionally, the functional, or smokeable, definition of "cocaine base" avoids the undue narrowing of § 841. The crack-only definition ignores substances, such as cocaine paste and freebase cocaine, that are consumed in the same manner as crack. The smokeable definition encompasses these additional substances. As the *Brisbane* court suggested, the *Shaw* approach "includes in the definition 'traditional' freebase cocaine and cocaine paste. The [*Shaw*] approach avoids the difficulties inherent in the 'literal' approach while not unduly narrow-

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129 See 936 F2d at 416 (asserting that members in both houses were focused primarily on smokeable cocaine).

130 See id (citing as examples comments by Representative Annunzio and Senator Hecht).

131 See id ("Nothing in the legislative history indicates that the Senate version intended a different meaning for 'cocaine base.' Indeed, statements made by sponsors of the legislation in both houses indicate concern primarily with the crack epidemic, and they describe crack as cocaine that is smoked rather than snorted.").

132 See id at 415.

133 See id (adopting a definition of "crack" as a form of cocaine "intended for smoking rather than inhalation"), quoting Chapman, *New Dictionary of American Slang* at 85 (cited in note 8).

134 See 936 F2d at 415 (concluding that Congress and the Commission intended "cocaine base" to refer to smokeable cocaine).

ing the operation of the statute."[135] Smokeability is argued to be a better fit because it provides a level of generality necessary to encompass all of the drugs Congress focused on. Moreover, the generality creates flexibility in the statute.[136] Since "cocaine base" is defined functionally, new forms of cocaine that meet the functional requirements can be easily incorporated into the text of § 841. As drug markets evolve, this flexibility will increase the utility of the statutory language.

2. A critique of the *Shaw* approach based on its thin reliance on legislative history.

The critiques of the smokeable definition focus on the weakness of the *Shaw* court's reasoning. One critique focuses on shortcomings of the legislative history that was relied on by the *Shaw* court. Two additional critiques focus on areas of analysis missing from the *Shaw* court's opinion: a focus on the text of the statute and on the science behind cocaine's effect on the body.

The strongest critique of the smokeable definition relates to the interpretation of congressional intent. The *Jackson* court argued that the interpretation of congressional intent by the *Shaw* court was suspect. First, the *Jackson* court argued that the term "cocaine freebase" was rejected as part of the final bill adopted by both houses.[137] Even if the term "cocaine freebase" implied a smokeable definition, the rejection of the language denies it interpretive force.[138] Secondly, the *Jackson* court questioned the authority of the source of the *Shaw* court's definition and suggested that the report from which it is drawn is unfit for analysis.[139] The definition of "cocaine freebase" was taken from a report presented at a White House drug conference. It was never formally associated with the House bill, though the language is the same. There is no link upon which to assume that the definition of the bill was meant to be the same as the definition used in the report.

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135 See *Brisbane*, 367 F3d at 914 (cautioning that the smokeable definition may nevertheless be overinclusive, as Congress only intended to subject smokeable *and* widely available substances to additional punishment).

136 See id (juxtaposing the smokeable definition against a crack-only definition, which the court warns may be too rigid to handle continued development of cocaine).

137 See *Jackson*, 968 F2d at 162–63 ("Nothing in the legislative history directly supports the Ninth Circuit's conclusion that Congress did not intend a chemical definition of 'cocaine base.'").

138 See id ("The definition of 'cocaine freebase'—a term found in a version of the proposed bill that was considered by Congress and rejected in the bill's final form—sheds little light on the meaning of a different term selected by Congress.").

139 See id at 162–63 ("[T]he Shaw Court's definition of 'cocaine freebase' relies on a dictionary of questionable force and on a report of the House Committee on the Judiciary that relates not to the amendments at issue but instead to a White House conference on drug abuse advocated by the committee.").

Two additional critiques of the *Shaw* court—which have yet to be raised by other courts—focus on what is missing from the justification for the smokeable definition. First, the *Shaw* court failed to address the text of the statute. The meaning of "cocaine base" is examined by looking at congressional intent as well as the language of the Sentencing Guidelines. The court, however, does not include a consideration of the text of the statute itself. Given that § 841 is a mandatory minimum sentencing provision and, as the *Fisher* court pointed out, cocaine base must be read in light of the balance of the text,[140] the lack of a textual analysis significantly weakens the *Shaw* court's position. While both the *Jackson* and *Fisher* courts attempted to harmonize their definitions with the language, the smokeable definition is explained in a manner detached from the text. This is an especially potent challenge given the dearth of legislative history.

Additionally, the *Shaw* court asserted the importance of smoking as an identifying factor in the use of cocaine, but did not demonstrate how the importance of the method of consumption meets the concerns Congress raised. The science of cocaine's influence on the body is missing from the opinion. Smoking is noted as being an important characteristic, but the analysis never extends into why this characteristic matters. As was discussed earlier, the method of consumption accounts for the primary effects that a cocaine derivative has on the body. Adding a discussion of the importance of smoking as a method of consumption could help harmonize this definition with congressional intent.[141]

D. Summary Table

Each of the approaches presents very different consequences for how individuals will be punished. In order to help clarify the impact of each potential solution, the table below has been provided. The table lists each of the three definitions discussed in this Part and describes where the various cocaine derivatives would be placed under that particular definition.

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140 *Fisher*, 58 F3d at 99.

141 The *Brisbane* court offered an additional reason to resist the smokeability approach based on Congress's legislative trajectory with respect to cocaine substances. The courted points out that smokeable cocaine was extant well before the mid-1980s, and yet, "before the advent of crack, Congress did not punish it more severely than cocaine," indicating that smokeability alone did not make a cocaine substance a "compelling legislative target." *Brisbane*, 367 F3d at 914. The *Brisbane* court's hypothesis is weakened, however, by the text of the statute, which refrains from using the term "crack cocaine" in lieu of broader language. See Part III.A.1. As such, this critique is not explicitly addressed in this Comment beyond the discussion in Part III of the breadth of the text.

TABLE 2: OUTCOMES UNDER DIFFERENT DEFINITIONS

Definition	Substances Punished as "Cocaine Base" under Clause (iii)	Substance Punished as "Cocaine" under Clause (ii)
Textual/Chemical Second, Third, and Tenth Circuits	Crack cocaine Freebase cocaine Cocaine paste Untreated (unusable) cocaine base	Cocaine hydrochloride
Crack Only Fourth and Seventh Circuits	Crack cocaine	Cocaine paste Freebase cocaine Cocaine hydrochloride Untreated (unusable) cocaine base
Functional/Smokeable Ninth Circuit	Crack cocaine Cocaine paste Freebase cocaine Any additional form of smokeable cocaine that develops	Cocaine hydrochloride Untreated (unusable) cocaine base

III. THE SOLUTION: ADOPTING A FUNCTIONAL, OR SMOKEABLE, DEFINITION OF "COCAINE BASE"

This Part introduces a new justification for adopting the functional definition of "cocaine base." The legal justification proposed for adopting the smokeable approach stems from a close analysis of the text of § 841. First, this Part rules out the crack-only definition by considering the scope of the statutory language. Then, after analyzing the textual arguments for the remaining definitions, this Part applies the rule of lenity to § 841, leading to the adoption of the smokeable definition of "cocaine base." Finally, the legislative history is analyzed in an effort to identify the underlying policy behind § 841, suggesting that the science of cocaine use supports the functional definition from a policy standpoint.

A. The Text Supports a Functional Definition of "Cocaine Base"

The functional definition of "cocaine base" is supported by a close reading of the text of § 841. The scope of the language in § 841 suggests that the crack-only definition is insufficiently narrow in light of the terms selected by Congress. The text of the statute is crucially ambiguous, leaving the rule of lenity to resolve the dispute between the two remaining approaches in favor of the smokeable definition.

1. The crack-only definition fails to respect the scope of the text in § 841.

The crack-only definition presents the narrowest interpretation of § 841, failing to respect the breadth that is inherent in the term "cocaine base." Though the crack-only definition certainly fits within the scope of § 841, it fails to adequately fill in the language that Congress utilized because it excludes all noncrack forms of cocaine base.

When analyzing statutory text, it is important to keep in mind the breadth of the terms used in the statute as an indication of the scope that Congress intended the statute to have. In *Circuit City Stores, Inc v Adams*,[142] the Court analyzed the Federal Arbitration Act's (FAA) application to transport workers at an electronics store. A key aspect of the Court's analysis turned on the meaning of the phrase "involving commerce."[143] In determining the application of the FAA, the Court relied on the comparative breadth encompassed by the term "involving," as opposed to terms indicating a narrower scope, such as "engaged in."[144] "Involving" was found to be equivalent to the term "affecting" in relation to interstate commerce. This finding led the Court to conclude that Congress had indeed exercised its full panoply of Commerce Clause powers in crafting the FAA.[145] The Court indicated that, had Congress used the term "engaged in interstate commerce," a narrower interpretation of the FAA would have been appropriate. The conclusion that can be drawn from the Court's analysis of the terms in *Circuit City* is that the implied scope of the words used in the text must be given substantial consideration in analyzing the text of a statute.

Congress, in passing § 841, used a relatively broad term—"cocaine base." The term "crack cocaine" was readily available to Congress.[146] "Crack cocaine" provides a distinct, narrow class of substances that would exclude numerous other smokeable forms of cocaine derivatives. Congress, however, avoided using the term "crack cocaine." Instead, Congress used "cocaine base" in the statutory text. If "cocaine base" is limited to the crack-only definition, then "crack" comprises the entire scope of the substances included in the statute. But, if a smokeable definition, for example, were adopted, "cocaine base" would include cocaine freebase, cocaine paste, crack cocaine, and all other smokeable forms of cocaine. In the same way that the Court rejected a narrow reading of "involving interstate commerce" on the

142 532 US 105 (2001).

143 See id at 115.

144 See id at 115–16.

145 Id.

146 See, for example, 132 Cong Rec at S 26435 (Sen Chiles) (noting that the Senate has "enhanced the penalties for drugs, but especially for crack cocaine").

basis of the inherent breadth of the term involved, so too should the crack-only definition of "cocaine base" be rejected because of the natural breadth inherent to the language of § 841.

2. The text is ambiguous between the chemical definition and a functional definition.

Though the text seems to reject a crack-only approach, it is ambiguous between the chemical and functional definitions. The ambiguity is most clearly seen by first examining the textualist argument in favor of the chemical definition, and then examining a contextual response to the chemical definition.

From a pure textual standpoint the chemical definition cannot be easily dismissed. The *Jackson* court contended that "the language of the statute itself speaks to [the definition of 'cocaine base']."[147] A chemical definition, according to the *Jackson* court, should be adopted because the text of the statute utilized "a term of art that should be defined by reference to the scientific community from which it derives."[148] "Cocaine base" is a unique scientific term that can be given a strict definition based on its chemical compound.[149] Given the clarity of the definition that can be applied, there was no reason for the *Jackson* court to assume that any other definition of the term "cocaine base" could be applied.

The argument for the functional definition is really a contextual response to the chemical definition stemming from the *Fisher* court's analysis regarding the statutory redundancy created by adopting the chemical definition. The *Fisher* court argued that clause (iii)—referencing "cocaine base"—cannot be read in isolation because it is part of a comprehensive sentencing scheme.[150] Comparing clause (iii) and clause (ii)—defining punishment for the possession of cocaine, its salts, and so forth—demonstrates the relationship of the two parts of the statute. Clause (iii) goes so far as to explicitly reference clause (ii).[151] The reference to clause (ii) suggests that the substances in clause (iii) are to be comprised of those punishable under clause (ii) that contain cocaine base. Clause (iii) substances should thus be a related but distinct class.[152]

147 *Jackson*, 968 F2d at 163.

148 Id.

149 Id (noting expert testimony that scientists agree on a chemical definition of "cocaine base").

150 See *Fisher*, 58 F3d at 99 (noting that because the clauses are interrelated, interpreting clause (ii) as including cocaine base would make clause (iii) superfluous).

151 See 21 USC § 841(b)(1)(A)(iii).

152 See *Fisher*, 58 F3d at 99 (concluding that the purpose of clause (iii) is to levy a stricter penalty on possession of a distinct and "particularly harmful form of cocaine").

Considering both clauses together demonstrates a redundancy created by the chemical definition. Applying the chemical definition of "cocaine base" would only subject powder cocaine and its isomers to the lower statutory minimum. Clause (iii) would embrace every other substance covered in clause (ii). According to the *Fisher* court, the definition of clause (ii) must be broad in order to address all of the substances covered by the statute.[153] The broad reading of "cocaine" in clause (ii) most naturally relates to the chemical definition of "cocaine base." If "cocaine base" were to be given a chemical definition in clause (iii) as well, then clauses (ii) and (iii) would overlap and punish the same substances. This results in a fundamental conflict in the structure of the statute.[154] The conflict stems from two different issues. First, clause (iii) is meant to be related to, but distinct from, clause (ii), which it cannot be with a chemical definition. Second, clauses (ii) and (iii) have different quantity requirements creating general confusion as to the proper sentencing scheme.

The conclusion from this argument is that the definition of clause (iii) must be narrower than the chemical definition—which should be applied to "cocaine" in clause (ii). The contextual response arguably supports the smokeable definition, especially once the breadth of cocaine base is considered. Since "cocaine base" presumes breadth in coverage, "crack cocaine" is not textually supported. That leaves the smokeable definition as a narrower subset of the chemical definition, but still respectful of the text of § 841. The functional definition can be arguably supported by the text because it punishes a discrete subset of substances while maintaining some significant breadth to § 841's coverage.

It is unclear how the courts supporting a chemical definition would respond to the *Fisher* court's redundancy argument. The most logical response is that, given the clear nature of "cocaine base" as a scientific term, the term "cocaine" in clause (ii) was improperly defined by the *Fisher* court. Given the relationship between clauses (ii) and (iii), the word "cocaine" would have to take on a broader meaning than that denoted by the chemical definition. This would likely revolve around a definition of "cocaine" that included the precursor substances to cocaine, including the coca leaves. This definition fits awkwardly,

153 Recall the text of clause (ii): an individual is punished for possessing "5 kilograms or more of a mixture or substance containing a detectable amount of—cocaine, its salts, optical and geometric isomers, and salts of isomers." 21 USC § 841(b)(1)(A)(ii)(II). The *Fisher* court's argument was that each element of clause (ii) was meant to be distinct. See 58 F3d at 99. Thus "cocaine" should be distinct from its "salts." See Part II.B.1 for a more in-depth discussion.

154 See *Fisher*, 58 F3d at 99 (noting that the only rational interpretation of clause (iii) is that it carves out a heavier punishment for a subset of substances related to clause (ii)).

however, with the "salts and isomers" language that follows "cocaine" in clause (ii).

The text gives no readily apparent means of resolving the tension between them. The chemical definition is staunchly supported by a traditional canon of construction. The functional definition, on the other hand, seems to comport more easily with the structure of the statute once each definition is placed within the context of the whole statute. The text is thus ambiguous regarding the definitions.

3. The legislative history of § 841 provides no definitive answers regarding the interpretation of "cocaine base."

The history behind the ADAA fails to provide a clear definition of "cocaine base." As was noted earlier, the ADAA was passed quickly and generated very little traditional legislative history.[155] Specifically, Congress did not engage in the traditional process of using subcommittees and conferences between the chambers that would have produced reports and discussions as to the meaning of the statute. Rather, in a bid to quickly respond to a perceived drug crisis, the act was passed on the force of the floor debates.

The floor debates are inconclusive as to the meaning of "cocaine base." The discussion taking place on the floor remained at a relatively high level of generality. The speeches did not attempt to parse the specific language of § 841; rather members of Congress spoke about their general purposes and concerns. While there were references to crack cocaine, they tended to come about as specific examples,[156] drawing out a more general concern about drug use and its dangers.[157] This tendency to discuss crack cocaine within the larger context of general drug problems supports the view that the crack-only definition is too narrowly focused in addressing the breadth of congressional concerns.

The fact, however, that the floor debates demonstrated a general concern about the impact of drug use generally does little to resolve the meaning of the text between the chemical and smokeable definitions. Either definition adds significant scope to the statutory language. While it is clear that Congress was concerned with a larger drug epidemic, it is unclear whether this concern warrants stiffer punishment for the possession of unusable substances or if Congress in-

155 *Brisbane*, 367 F3d at 912 (noting that the ADAA was passed without "normal deliberative processes").

156 See, for example 132 Cong Rec at S 26435 (Sen Chiles) ("We have enhanced the penalties for drugs, but especially for crack cocaine.").

157 See, for example, id at 26436 (Sen Hawkins).

tended a more measured approach punishing only smokeable forms of cocaine base. The legislative history on this point is unhelpful.

4. The rule of lenity counsels the resolution of the text in favor of the smokeable definition.

Given the textual ambiguity of § 841 and the indeterminate nature of the legislative history, the rule of lenity should be applied to resolve the tension between the chemical and smokeable definitions. The rule of lenity is a special canon of construction that applies to criminal statutes. The rule is rarely applied, however, because it is meant to be a tiebreaker between competing plausible textual interpretations.[158] In situations where the text of a statute is ambiguous, as viewed through normal methods of interpretation, the rule counsels that the text should be read narrowly to avoid extraneous punishment.[159] The language of the statute should be read as encompassing only those elements clearly covered by the statute.[160] The rationale is to avoid punishing people for actions unless those actions fit the narrowest reasonable understanding of the statutory text.

Section 841 is sufficiently ambiguous to allow the application of the rule of lenity. Since the ADAA was passed in a rush, the two most relevant sources to determine the meaning of cocaine base are the text and the floor debates. As has been demonstrated above, each of these sources is ultimately ambiguous as to the appropriate meaning of cocaine base. Since none of the relevant sources conclusively resolves the ambiguity the application of the rule of lenity is appropriate.

Applied to the tension between the chemical definition and the smokeable definition, the rule of lenity supports the smokeable definition. The chemical definition is significantly broader in scope than the smokeable definition.[161] The chemical definition includes all of the substances contained in the smokeable definition and a number of additional, unusable substances left out of the other proposed definitions.[162] The smokeable definition, in contrast, targets a narrower population of substances, consequently limiting the potential field of those whose conduct falls under the statute. Additionally, the individuals who are

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158 See *Muscarello v United States*, 524 US 125, 138 (1998) (noting that the rule of lenity is appropriate only where a court has exhausted its other sources and can only guess as to Congress's intentions).

159 Id at 149 (Ginsburg dissenting).

160 *United States v Lanier*, 520 US 259, 266 (1997) ("[T]he canon of strict construction of criminal statutes, or the rule of lenity, ensures fair warning by so resolving ambiguity in a criminal statute as to apply it only to conduct clearly covered.").

161 *Brisbane*, 367 F3d at 913 (noting that this approach extends the statute to "forms of cocaine base that are not smokable or even consumable without further processing").

162 Id.

targeted are those in possession of a uniquely dangerous subset of cocaine derivatives. Since the rule counsels that the narrowest plausible definition be selected, the smokeable definition should be adopted.[163]

The text, though ambiguous on its face, can be resolved by using the rule of lenity. Although the *Shaw* court avoided a serious textual analysis, the text of the statute and relevant canons of construction provide a strong legal foundation to resolve the circuit split in favor of the smokeable definition.

5. The legislative debates and science of cocaine use provide a compelling policy justification for adopting the smokeable definition.

Though the legislative history for the ADAA is sparse, the policy underlying the passage of § 841 is best honored by adopting a smokeable definition. This Section does not examine the legislative history used by the *Shaw* court. Rather, it first analyzes the floor debates regarding § 841, drawing out a general theme of congressional concern about the rising cocaine problem. Then it discusses the science behind cocaine use to argue that the smokeable definition best supports the policy goals Congress was trying to achieve.

Although the *Shaw* court sparingly considered the floor debates regarding the ADAA, analyzing some of the comments of the Senators creates a sense of the underlying policy that Congress was trying to achieve. Senator Weicker presented one of the first statements on the floor of the Senate. He contended that the "drug problem in this country is severe" and that the only way to solve this problem is to "allocate more resources to science."[164] The key aspect of Weicker's statement is the focus on the drug problem of the nation generally. Weicker did not seem to target his concern to a particular substance so much as to drug addiction broadly considered. While this does not exclude crack cocaine as his, or the Senate's, primary concern, it does suggest a realization that the measures taken needed to address a larger problem, starting here by focusing on cocaine derivatives.

Senator Hawkins[165] spoke later in the debate and focused on the frustrations that drugs have caused the inner city. "It is our people who know best what illegal drug use has done and is doing to our

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163 See *Lanier*, 520 US at 266. Admittedly, the smokeable definition is flexible and, as technologies evolve, may approach the chemical definition in its extent.

164 132 Cong Rec at S 26435 (Sen Weicker).

165 Senator Hawkins was considered one of the driving forces behind narcotics legislation in general and an influential force in passing the ADAA. See Ronald Reagan, *Remarks on Signing the Anti–Drug Abuse Act of 1986*, online at http://www.reagan.utexas.edu/archives/speeches/1986/102786c.htm (visited Apr 16, 2007).

children, our schools, our streets, our workplaces, our military forces, our sports programs—yes, our very civilization."[166] Senator Hawkins was concerned about the impact of these substances on our society. From the increase in crime to the severe psychological and physiological impacts cocaine derivatives have on the user, Senator Hawkins's concern seems to have been with the drug problem as a whole, focusing here on curbing the use of cocaine products.[167]

Senator Biden, one of the Democratic sponsors of the bill, echoing some of those same concerns, focused on the fact that the entirety of the Anti–Drug Abuse Act of 1986 was aimed at providing a comprehensive approach to limiting cocaine derivatives.[168] The bill included elements that focused on interdiction, as well as elements that focused on enhancing punishments for both users and dealers.[169]

Senator Evans, moreover, expressly warned the chamber to avoid focusing too much on crack cocaine when considering the bill, instead encouraging them to realize that there is a larger network of drug addiction problems. Senator Evans stated that "the Federal Drug Enforcement Administration has found that crack, in their view, is not the drug of choice for most users and that its prevalence has been exaggerated by heavy media [ ] attention."[170] He continued by urging the Senate to keep in mind that there are other drug addiction problems at least as severe as, if not more severe than, the crack cocaine problem facing the country.[171]

What can be taken from the floor debates is that, although crack cocaine certainly played an important role in the consideration of the bill, there was a larger awareness of a fundamental cocaine problem. The goal of Congress appeared to be to take a comprehensive approach to the problems of cocaine derivative use in order to address this issue. Part of this intent is born out in the structure of the ADAA

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166 132 Cong Rec at S 26436 (Sen Hawkins).

167 See id (indicating that "[d]rug addiction turns people in walking crime machines," illuminating her underlying belief that there was a larger drug problem facing the country).

168 See id at 26439 (Sen Biden).

169 Id at 26439–40 (characterizing the bill as stopping the foreign production of drugs, reducing the flow of drugs over the border, increasing penalties for drug offenses, and educating young people about the hazards of drugs).

170 Id at 26441 (Sen Evans). Senator Evans's point has some merit to it. In the spring before the bill was considered, two high-profile athletes succumbed to crack cocaine addiction. This led to a sharp increase in national news focus on the issue, increasing public awareness and pressure to resolve the issue. For a supporting view, see Reinarman and Levine, 16 Contemp Drug Probs 567–68 (cited in note 16) (analyzing "the so-called crack crisis" and concluding that it may have spawned troubling consequences, including diverting attention from the underlying problems and inspiring curiosity in crack).

171 See 132 Cong Rec at S 26441 (Sen Evans) (citing among these other addictive drug problems alcohol abuse and smoking).

itself, which contains provisions relating to issues from interdiction to education. The *Shaw* and *Jackson* courts missed this analysis.

Furthermore, the courts failed to bring in the science of cocaine use in order to analyze the problem of cocaine base. Taking this science of cocaine use into account, the smokeable definition of "cocaine base" naturally supports the policy concerns Congress had. Concerns about the increase in cocaine-related crimes or more severe psychological impacts of newer cocaine derivatives relate to the manner in which they are consumed.[172] The active ingredient in cocaine hydrochloride is the same as that in crack cocaine. The difference in how the drugs impact the human body is predicated on the method of consumption.[173] The irrational behavior associated with crack cocaine is thus a product of the fact that the drug is smoked.[174] Freebase cocaine (also smoked) produces the same effects and behavior.[175]

Using a smokeable definition targets all of the substances that cause the sorts of concerns Congress raised, rather than just some of them. Though the science of how cocaine affects the body is largely ignored in the circuit courts, when viewed in light of Congress's desire to address the larger drug problem of the nation, it provides insight into the best meaning of cocaine base. The differential impact of different forms of cocaine is predicated on its method of consumption. Targeting only the most insidious cocaine derivatives requires using a functionalist approach.[176]

The smokeable definition also has the added advantage of flexibility. As the *Brisbane* court noted, the definition is such that when new forms of cocaine have to be dealt with in the criminal justice system they can be encompassed within the existing framework.[177] The frame-

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172 The rise in crime, for example, has been attributed in part to the impulsive and irrational behavior associated with crack addiction. See Wallace, 17 Contemp Drug Probs at 81–84 (cited in note 53) (discussing the particularly acute effects of crack use, including loss of control). Impulsive behavior, an immediate need for cash, and intense addiction make crack users more likely to strike out to get what they need through personal robberies and other crimes. The impulsive behavior, however, stems from the depth of the addiction to crack, characterized by short, intense highs that are a product of crack's smokeability. See 2002 Report to the Congress at 19 (cited in note 11).

173 See 2002 Report to the Congress at 18 (cited in note 11).

174 See id.

175 United States Sentencing Commission, Report on Cocaine and Federal Sentencing Policy (1995), online at http://www.ussc.gov/crack/CHAP2.HTM (visited Apr 16, 2007) ("While cocaine in any form—paste, powder, freebase, or crack—produces the same type of physiological and psychotropic effects, the onset, intensity, and duration of its effects are related directly to the method of use."). Since both freebase and crack are smoked, the physiological effects are very similar. Id.

176 The capacity to smoke a substance, though not tied to a specific chemical analysis, is based on a measurable characteristic analysis. The vaporization point indicates whether the substance is capable of being smoked and producing a high.

177 See *Brisbane*, 367 F3d at 913.

work, because it is based on the method of consumption, will continue to allow cocaine base to target these new substances as they are developed.[178] The *Brisbane* argument is strengthened when an analysis of the manner in which cocaine affects the body is added to its conclusions.

Analyzing the floor debates and gleaning from them some of the primary concerns of Congress suggests that there was an awareness of a larger drug problem facing the United States. The science behind cocaine's impact on the body recasts what is the most natural reading of cocaine base. Interpreting § 841 from a functionalist standpoint addresses the legislative concerns more completely than applying either the chemical definition or the crack-only definition. Moreover, it provides the statute with a degree of flexibility to meet the continually evolving challenges posed by the nature of the drug market. The functional, or smokeable definition, thus serves the purposes of cocaine base within § 841 uniquely well.

CONCLUSION

The adoption of a functional, or smokeable, definition of "cocaine base" provides a solution to a circuit split that has lingered for over a decade. The quick passage of the Anti–Drug Abuse Act of 1986, combined with its cryptic language, has made the definition of "cocaine base" a point of much contention. The smokeable definition in many ways provides a middle position between the other circuit proposals. Textually, the definition meets the requirements of the rule of lenity by both respecting the text Congress selected and narrowing the definition of the term to avoid expansive punishment. Moreover, though there is little history, what we do know suggests that Congress recognized a larger cocaine problem facing the country. A smokeable definition is more apt to address the larger cocaine addiction concerns both now and in the future. By recasting the differences between various substances on their method of consumption, as opposed to chemical or characteristic differences, a functionalist interpretation gives the statute a new foundation that accords with the manner in which cocaine actually affects those who use the substance. Though not necessarily the most intuitive choice, and though poorly supported by the *Shaw* court, the smokeable definition of "cocaine base" seems to have a solid foundation in the text of § 841 and the capacity to address the concerns of Congress.

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178 Since the method of consumption, and not the physical composition of the substance, is the most relevant concern in terms of its effect on the individual the smokeable definition of cocaine base would continue to select the most concerning substances for harsher punishment.