

United States v. Shonubi

[Shonubi III]

United States District Court for the Eastern District of New York, 1995

895 F.Supp 460

WEINSTEIN, DISTRICT JUDGE

I. Introduction

The defendant was caught entering the country with 427.4 grams of heroin in his digestive tract. It is believed that he made seven prior drug smuggling trips, but not known how much he carried on those trips. The court is required, under the Sentencing Guidelines, to estimate the total quantity of heroin imported.

At the original sentence, the court multiplied 427.4 by eight, arriving at a total of 3419.2 grams. The sentence was 151 months in prison, the low end of the Guidelines range for importation of 3,000 grams of heroin or more. *See United States v. Shonubi*, 802 F.Supp. 859 (E.D.N.Y.1992) [*Shonubi I*], *conviction affirmed, sentence reversed*, 998 F.2d 84 (2d Cir.1993) [*Shonubi II*].

The court of appeals rejected this solution and remanded. On reconsideration, the trial court now concludes that the defendant should be sentenced for importing between 1,000 and 3,000 grams of heroin. The term of imprisonment is unchanged.

II. Facts

Charles O. Shonubi, a 34-year-old Nigerian citizen, lived in New Jersey while studying architecture and working as a toll collector at the George Washington Bridge. His salary was \$12,000 a year. On December 10, 1991, Shonubi flew from Lagos, Nigeria, to Amsterdam, and then on to New York.

A customs service officer at John F. Kennedy Airport noticed Shonubi near a baggage carousel; he was “turning rapidly” and “scanning the customs area” rather than looking for his luggage. The officer examined Shonubi’s passport and then questioned him about the frequent trips to Nigeria indicated on the passport. The defendant’s answers were contradictory and confusing....

In response to the agent’s request, Shonubi consented to an X-ray. Taken to a “search room,” he was patted down, read his Miranda rights, and handcuffed. A search of his person turned up a slip of paper bearing the name of a Nigerian customs official. An X-ray revealed a number of foreign bodies in his intestine.

Shonubi was escorted to a trailer designed for the observation of passengers suspected of carrying drugs internally. The trailer has two levels. Material expelled into a toilet on the upper level drops into a holding tank, where agents on the lower level can observe it. Shonubi passed a total of 103 balloons over

two days.

A forensic chemist found that four of the balloons, selected at random, contained a heroin mixture. The mixture represented 60.49 percent of the gross weight of the four balloons.

Multiplying the average weight of the heroin mixture in the four tested balloons by 103, the chemist arrived at an aggregate weight of 427.4 grams. Chemical testing established that the purity of the heroin mixture in the four balloons was 53 percent.

A customs service agent interviewed Shonubi while he was in the trailer. When she asked him where he had obtained the narcotics, Shonubi answered that he had bought them from “an ordinary man on the street.” She asked him what he was supposed to do with the drugs, and he answered that they were his, and that he “wasn’t giving them to anyone else.”

III. Procedural History

A. Aborted plea bargain

The defendant attempted to plea bargain. However, during a plea allocution before the chief magistrate judge, he alternately admitted and denied knowledge of the drugs found in his system. The allocution was aborted. Had Shonubi accepted the plea agreement, it is likely—given the disposition of similar cases in this district—that he would have been sentenced to a maximum of thirty-six months in prison. Instead, he elected to go to trial.

B. Trial

At trial, two customs agents described Shonubi’s behavior at Kennedy Airport. Another customs agent testified that 427.4 grams of heroin, at 53 percent purity, would have a wholesale value of \$44,000 and, if cut following the normal procedures of heroin distributors in New York, would produce 20,000 “hits.” That the heroin had to be diluted was, according to the agent, certain: ingestion of 53 percent heroin can be fatal. The heroin, he concluded, could not have been for Shonubi’s personal use.

The date stamps on Shonubi’s passport conflicted with his accounts of when he had traveled, as well as with employment records at the George Washington Bridge. Those records showed eight absences from work. Entries on Shonubi’s passport strongly supported the inference that eight trips had, in fact, been made, but that Shonubi had made some legs of the trips using a second passport.

Warned by his attorney not to testify, Shonubi—after visibly remonstrating with his attorney—chose to take the stand. He proved an effective witness for the prosecution.

Confronted with his passport and work records proving that he had made at least eight trips to Nigeria in the previous fifteen months, Shonubi nonetheless denied making more than four trips to Nigeria. He also denied traveling abroad except to see his family. He was unable to explain how he could afford eight round-trip tickets, costing a minimum of \$900 each, while earning \$12,000 a year and paying college expenses. He also denied defecating in the medical van.

Shonubi was convicted by the jury of heroin importation and possession of a controlled substance with intent to distribute.

C. Sentencing

At his sentencing hearing, Shonubi reiterated, under oath, that he had made only four trips to Nigeria and had not imported heroin on any of those trips. The sentencing judge found that Shonubi had lied throughout the trial and was lying at the sentencing proceeding. His fabrications included his statements about the number of trips he had made, about the purposes of those trips, about his employment history, about his use of multiple passports, and about events inside the customs service trailer.

Based on evidence at the trial and at sentencing, the judge found that the defendant had made a total of eight smuggling trips to Nigeria between September 1, 1990 and December 10, 1991. Multiplying the amount of heroin found on Shonubi by eight produced a total of 3,419.2 grams. Under the Sentencing Guidelines, possession of at least 3,000 but less than 10,000 grams of heroin is a “level 34” offense.

[Note: under the Sentencing Guidelines at the time this case was decided, the quantity of heroin in his possession only had to be determined by a preponderance of the evidence at the sentencing stage.]

The government contended that the defendant’s perjury at trial and sentencing constituted per se obstruction of justice, requiring enhancement under ... the Sentencing Guidelines.... The sentencing judge observed:

The Guidelines’ predilection for incarceration should be satisfied by adding ten years for defendant’s exercising his right to a trial and to testify. Penalizing defendant additionally for what amounts to the same conduct (the maintenance of his own defense) would be inappropriate and cruel.

Shonubi I, 802 F.Supp. at 863.

The sentencing range for a level 34 offense, for an offender in defendant’s criminal history category-“I”- is 151–188 months. Shonubi was sentenced to 151 months, plus five years’ supervised release and a \$100 assessment.

D. Appeal

Shonubi appealed from his sentence, ... argu[ing] that the government had failed to prove how much, if any, heroin he had imported on trips prior to the offense of conviction.

The government cross-appealed. It argued that the court was obligated, in light of Shonubi’s perjury, to impose a two-point obstruction of justice enhancement.

The court of appeals found that the record amply supported the trial court’s determination that Shonubi had made a total of eight related smuggling trips in 1990 and 1991.

The conflicting accounts in Shonubi's passport and his work attendance records amply prove that he made eight trips to Nigeria on more than one passport. It may also be inferred that appellant imported heroin during each of these journeys because he used two passports, traveled frequently, avoided using direct flights ... and could not have afforded the air fare on his toll collector's salary.

Shonubi II, 998 F.2d at 89. The court of appeals also found that, for sentencing purposes, the eight trips should be considered a single course of conduct, which the court defined as "an identifiable pattern of criminal conduct." In making this finding, the court considered "such factors as the nature of defendant's acts and how frequently the ... acts have been repeated." It also found that Shonubi was not a minor participant in the offense. In reaching this conclusion, the court noted that "appellant regularly engaged in drug smuggling.... [and that his] pattern of travel ... suggests broad knowledge and culpability in the heroin trade."

The court of appeals was not satisfied with the sentencing judge's finding that Shonubi had imported more than 3,400 grams of heroin on his eight trips. It pointed to a lack of "specific evidence," which it defined as "e.g., drug records, admissions or live testimony." It found that on the issue of quantity the evidence "does not constitute proof by the requisite preponderance of the evidence," and that the sentencing court had relied on "surmise and conjecture."

Finally, the court of appeals held that the sentencing judge was required to impose the obstruction of justice enhancement once it had determined that Shonubi had lied under oath.... [T]he court held that enhancement is mandatory when a defendant lies about a material matter on the stand.

The court of appeals vacated and remanded for resentencing.

E. Proceedings on remand utilizing Rule 706 of the Federal Rules of Evidence

On remand the government indicated that it would rely on statistical evidence to establish the total quantity of heroin imported by Shonubi. The defendant was authorized to retain an expert at government expense to respond.

To help the court evaluate the statistical evidence proffered by the parties' experts, the court appointed a panel of experts. Federal Rule of Evidence 706 provides that "the court may appoint expert witnesses of its own selection."

* * *

F. Summary of arguments on remand

The government statistician, Dr. David Boyum, obtained customs service data on the amount of heroin recovered from 117 Nigerian heroin swallows apprehended at John F. Kennedy Airport between September 1, 1990 and December 10, 1991, the dates of the first and last trips indicated on Shonubi's passport. Using this data, statistical methods, and a computer program, Dr. Boyum determined that it

was “99 percent probable” that Shonubi had imported more than 2090.2 grams of heroin. This analysis, the government argued, satisfied its burden of proving that Shonubi had smuggled enough heroin to constitute a level 32 offense. It did not attempt to prove importation of at least 3,000 grams of heroin, the amount found by the court at the first sentence.

The defense, relying on an analysis by Professor Michael O. Finkelstein, argued that no statistics about other smugglers could satisfy the government’s burden of proof vis-a-vis Shonubi. It also disputed Dr. Boyum’s methodology. His calculations, it argued, failed to account for the likelihood that smugglers carry more heroin with each successive trip, a putative learning curve it termed the “trip effect.” Finally, it argued that smugglers of large amounts of heroin are more likely than smugglers of small amounts to be caught, suggesting that the DEA data overstate average quantities smuggled.

The Rule 706 Panel agreed with the defense that statistics about other smugglers, taken alone, could not satisfy the government’s burden of proof. The Panel, however, suggested a number of possible uses for the statistical evidence in conjunction with evidence already available to the court. The combination of statistical and non-statistical proof, the Panel suggested, would support a finding that Shonubi had imported, at a minimum, 1,000 grams of heroin on his eight trips....

G. Statement of the issue before the court

* * *

Extrapolation has already played a role in the instant case. Only four of the 103 balloons expelled by Shonubi were tested for heroin. Yet it is highly probable that all 103 balloons contained heroin mixture at a purity of roughly 53 percent.... In the Second Circuit, where sentences are not reduced in accordance with reasonable belief, sampling is often the basis of drug quantity determinations.

Conclusions based on extrapolation require assumptions about human behavior (i.e., no one carries sugar in balloons from Nigeria to New York) and about statistics (i.e., 4 balloons chosen at random out of 103, when there is no ostensible reason for variation, is a sufficient sample). Moreover, the trier’s sense of “story” ... suggests that the balloons were all filled from the same batch of heroin, using the same filling technique. This combination of thought processes permits the rejection as highly unlikely of any scenario in which the 103 balloons did not contain heroin in roughly similar amounts.

The same combination of beliefs about how people act in the real world and assessments of probability may permit a finding that each of Shonubi’s eight trips involved similar quantities of heroin. This is true despite the differences between a random sample—the choice of four out of 103 balloons—and the court’s non-random reliance on the eighth trip as a basis for conclusions about earlier offenses....

Understood this way, the question before the court is how likely it is, based on all available information, that the seven smuggling trips about which little is known were similar to the eighth, about which a great deal is known. The sentencing judge had previously concluded that the defendant’s first seven trips were substantially like the trip leading to his arrest. This memorandum explores the bases for that conclusion....

* * *

1. Drug cases

In drug cases [under the Sentencing Guidelines], offense level is based on quantity possessed, sold, or imported. For example, possession of more than 1,000, but less than 3,000, grams of heroin is a Level 32 offense. Within such ranges, estimation is encouraged. However, at the margins, a difference of a few grams can make a large difference in prison time. When the amounts are close to a critical step-up, at, for example, 1,000 or 3,000 grams, the possibility of a substantial increase in sentence suggests the need for extreme care in estimation.

Under the “modified real offense” system adopted by the Sentencing Commission, relevant conduct, in drug cases, is not limited to the offense of conviction. Instead, the quantity of drugs includes any amounts “that were part of the same course of conduct” or “common scheme or plan.” In the Second Circuit, inclusion of such quantities is mandatory.

Given their obligation to consider drugs from transactions that predate the offense of conviction—in some cases by over a year—judges must sometimes estimate the weight of drugs that neither the court nor the government has seen. In such cases, the Guidelines offer this instruction:

Where there is no drug seizure or the amount seized does not reflect the scale of the offense, the court shall *approximate* the quantity of the controlled substance.

The Guidelines give examples of the kinds of evidence on which approximations may be based:

[T]he court may consider, *for example*, the price generally obtained for the controlled substance, financial or other records, *similar transactions in controlled substances by the defendant*, and the size or capability of any laboratory involved. (emphasis added)

* * *

For many drugs, including marijuana, mescaline, and PCP, the Guidelines provide further instructions for estimation.

If the number of doses, pills, or capsules but not the weight of the controlled substance is known, multiply the number of doses, pills or capsules by the typical weight per dose in the table below.... *Do not use this table if any more reliable estimate of the total weight is available from case-specific information.* (emphasis added)

The Guidelines thus provide for estimation based on the activities of typical offenders (as determined by the Drug Enforcement Administration) when “case-specific” evidence is lacking.

Similarly, in cases involving clandestine laboratories “in which the manufacture of a controlled substance has not been completed ... the court must estimate the amount of controlled substance that would have been manufactured....” For this purpose, the Drug Enforcement Administration provides a

formula for estimating theoretical yields from the quantities of precursor chemicals seized.

* * *

C. Caselaw on estimation and specific evidence

In reversing the sentencing judge’s finding in the instant case, the court of appeals stated that estimates of drug quantity must be based on “specific evidence.” *Shonubi II*, 998 F.2d at 89. As examples of such evidence it listed “drug records, admissions or live testimony”—that is, written or spoken statements. This rule, it asserted, is a “careful practice” necessitated by a system in which drug quantity determinations can significantly affect terms of incarceration.

* * *

2. Estimates based on extrapolation

Estimates based on extrapolation from known events have been approved in a number of cases....

* * *

In *United States v. Sklar*, 920 F.2d 107 (1st Cir.1990), the defendant was arrested after mailing a package of cocaine. His relevant conduct included sending eleven other packages, none of which was seized. The government knew the weights of the eleven packages. It multiplied those weights by the percentage of cocaine (by weight) of the seized package, rounded down. The court of appeals affirmed “this conservative approach,” noting that, by rounding down, the court had “insulated the challenged finding from clear-error attack.”

United States v. Hilton, 894 F.2d 485 (1st Cir.1990), involved a sailboat which caught fire during a mid-ocean interception by government agents. A member of the boarding party saw ten packages in the bilge and retrieved one of them; he observed twelve additional packages floating away. The retrieved bundle had a gross weight of 14 pounds and was found to contain marijuana. The sentencing court “concluded that it was reasonable to assume that the remaining twelve packages each contained at least 10 pounds of marijuana, notwithstanding that they were never seized.” The court of appeals affirmed, “agree[ing] with the district court that the evidence offered by the government ... satisfies the sufficiency test, *even beyond a reasonable doubt.*”

Such estimates have been disapproved where the court overlooks evidence that the defendant’s prior transactions were not similar to the offense of conviction.... Courts have also rejected estimates based entirely on the conduct of others. For example, in *United States v. Garcia*, 994 F.2d 1499 (10th Cir.1993), the district court relied on an FBI agent’s knowledge of the average size of shipments being trafficked by dealers along the route followed by the defendant. The agent testified at the sentencing hearing that, based on past experience, “the loads ... that come from El Paso to Oklahoma City ... average between [sixty] and a hundred pounds, and we went with the low end.” No evidence was introduced relating the shipments in question to average shipments along the route. Reversing, the court of appeals held that the

average size shipment of all marijuana traffickers is simply not evidence of the size of these particular shipments of marijuana. To find that these particular shipments were of average size is nothing more than a guess.

* * *

VII. Application of Law to Facts on Original Sentence

A. Evidence from trial

Evidence introduced at trial established that the defendant made eight heroin smuggling trips from Nigeria to the United States; the court of appeals found that these trips were “amply prove[n]”.

That the defendant is capable of carrying 103 balloons, containing approximately 430 grams of heroin, in his digestive tract for more than a day was also proven to the satisfaction of the court. (The jury was not required to make a quantity determination in finding the defendant guilty.)

* * *

C. Knowledge of the drug trade: the trip effect

The defense has argued that, as a general proposition, amounts of heroin found on smugglers who are caught are greater than amounts usually carried. Several theories are advanced by the defense for why this might be true.

One theory is that the more a smuggler has swallowed, the more likely that smuggler is to be caught. If true, this would mean that seized quantities are greater, on average, than quantities that evade detection, and that the Customs Service data would, therefore, overstate average quantities carried. No available information supports this conclusion, nor does it comport with the sentencing judge’s observations. Neither Shonubi nor any other defendant who has come before the court has shown outward signs of internal heroin smuggling at the time he or she was arrested. There is also no reason to conclude that swallowers of large quantities tend to look more nervous than swallowers of small amounts.

A theory put forward by both the defense and the 706 Panel [the court-appointed experts] and worthy of more credence is that there is a learning curve—that smugglers adjust to carrying larger amounts of heroin on each successive trip. The underlying assumptions would be that swallowers carry only the amount of heroin they are comfortable carrying, and that the quantity they can comfortably carry increases over time.

It seems highly improbable that smugglers carry only the amount of heroin they are comfortable carrying. Who would be “comfortable” holding any number of heroin-filled condoms in his or her body, given the associated dangers? More likely, smugglers carry the amount their associates tell them it is possible to carry. That they have associates is clear. Even assuming Shonubi was working for himself—that is, assuming his testimony that he owned the heroin was true—he could not have operated without

substantial assistance in the Nigerian heroin network....

A smuggler who is preparing for his or her first trip will be instructed and most likely controlled by experienced people. It is their institutional memory, skills, and practice, not the swallower's comfort, that dictates how much he or she will carry. If, in fact, it is difficult for a potential smuggler to swallow 103 balloons on the first try, there may be extensive practice sessions over a period of days. As one investigative reporter observed:

[d]rug bosses wrap little balls of heroin in condoms and feed 80 to 100 of them to each courier, often washed down with a thick green okra soup. Arrested couriers have told of pre-flight training sessions in which recruits were given oversized grapes to swallow. *Those who gagged were rejected.*

These accounts not only suggest that smugglers learn to carry large amounts *before* they take their first trip, but also that those who cannot quickly learn to swallow large amounts will not be useful in the drug trade. The supply of willing swallowers far outstrips demand.

The defense theory that the economics of heroin smuggling create an incentive for smugglers to carry more heroin with each successive trip (which implies that, on an appreciable number of trips, they will carry less than the maximum possible amount) is inconsistent with the available data. In fact, the economics and sociology of heroin smuggling suggest an incentive to smuggle as much heroin as possible on every trip.

* * *

VIII. Desirability of Further Analysis

Having conducted, although not fully described, the above analysis, the sentencing court believes that its original conclusion satisfied the preponderance standard. On remand, however, the court has elected not only to explain its rationale for the initial sentence, but to consider additional factors. It does so for [the following] reasons:

First, given the operation of the Guidelines, a sentencing judge's analysis need not produce a specific figure. For example, a finding that the defendant carried just over 1,000 grams is, for Guidelines purposes, the equivalent of a finding that he carried just under 3,000 grams. This sentencing scheme—encouraging estimation and discouraging over-quantification—suggests that the court should, whenever possible, determine the most likely range, rather than a specific number.

Second, the sentencing judge must take account of potential sources of error, including the possibility that the amount of heroin seized from Shonubi was misweighed; the possibility that he made fewer than eight trips; the possibility that some of his trips involved lesser or greater amounts; and the possibility that not every trip involved attempted or completed smuggling. Such doubts must be resolved in the defendant's favor.

* * *

On remand, the government properly sought additional methods of meeting its burden of proof, and pursued one of those methods with the help of a statistician. This new evidence, as well as responses by defense and court-appointed experts, assisted the court in the process of revisiting its initial decision.

* * *

X. Additional Material Available to Sentencing Judge On Remand

A. Experts' reports

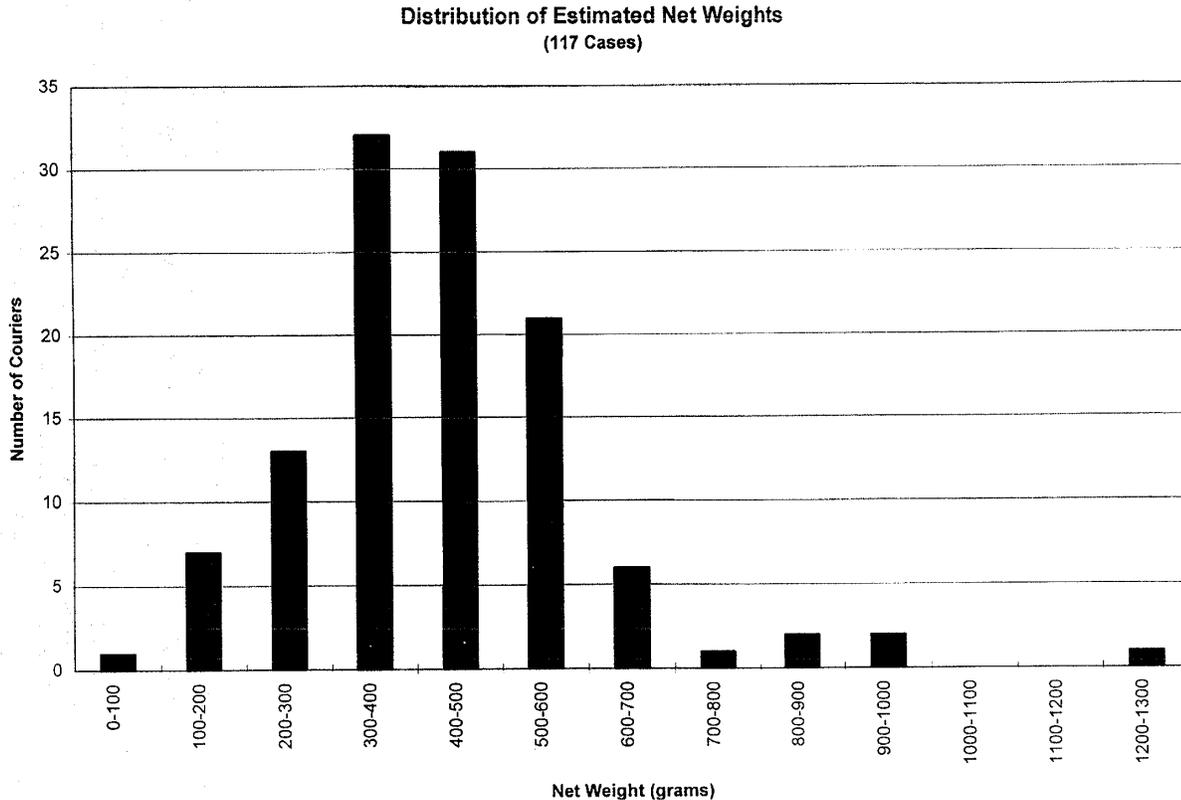
1. Government expert

On remand the government argued that “there is a 99% probability that the total weight of heroin imported by Shonubi during the seven trips ... equalled more than 2090.2 grams.” It based this conclusion on an analysis conducted by Dr. David Boyum.

Dr. Boyum obtained United States Customs Service data on 117 Nigerian heroin swallowers arrested at Kennedy Airport between September 1, 1990 and December 10, 1991 (the dates of the first and last trips shown on Shonubi's passport). For each swallower, the data included name, age, sex, and gross weight of heroin seized (i.e., the weight of heroin plus balloons). Deducting the estimated weight of the balloons—based on DEA averages—Dr. Boyum produced a list of 117 net weights. These ranged from 42.156 grams to 1225.45 grams. Dr. Boyum distributed these numbers in 100-gram ranges (commonly known as bins)....

Chart A presents these data in the form of a bar graph.

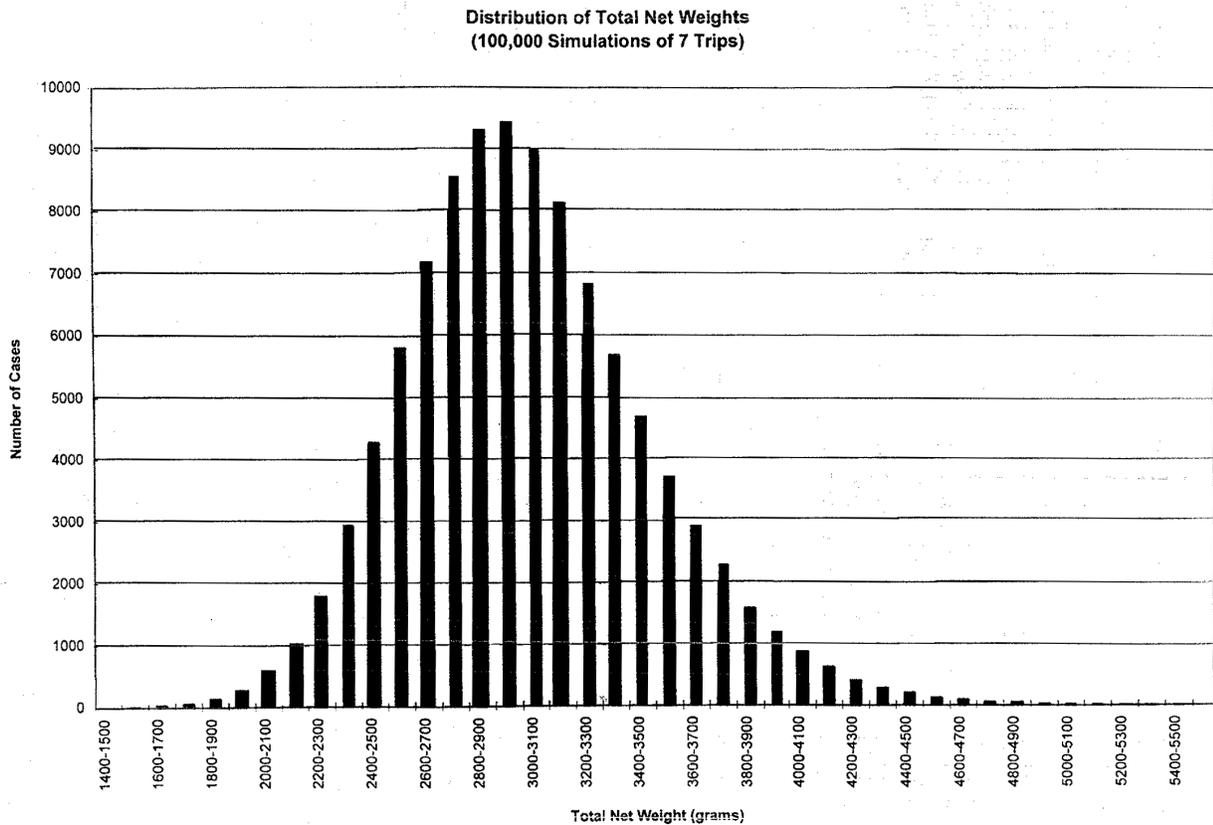
CHART A



Over 99 percent of the seizures involved 100 grams of heroin or more. The mean net weight was 432.1 grams and the median 414.5. The government noted that “Shonubi’s importation of 427.4 grams of [a heroin mixture] on December 10, 1991, falls squarely within the mean/median range of the data.”

Dr. Boyum then set out to see what, if anything, he could learn about the total weight of heroin imported by Shonubi on his first seven trips. He utilized a computer program to “simulate” 100,000 possible sets of seven trips. The computer was first “fed” a list of the 117 net weights. It was then instructed to choose seven of those numbers at random, and to calculate their sum. This produced a total weight for a simulated seven-trip series. The computer was instructed to perform this operation 100,000 times. The “output” consisted of 100,000 seven-trip totals. Graphed, these figures produced a bell-shaped distribution shown by Chart B.

CHART B



* * *

From the generated data, Dr. Boyum reached the following conclusions:

According to the generated distributions, there is a 99% chance that Shonubi carried at least 2090.2 grams of heroin on the seven trips combined; there is a 95% chance that he imported more than 2341.4 grams; a 75% chance that he carried more than 2712.6 grams; and a 55% chance that he carried more than 3039.3 grams.

Had the government chosen to rely on a bare preponderance standard (i.e., 50 percent-plus probability), it could have argued that over 3,000 grams were smuggled on the seven trips ([since there was a] 55 percent probability that Shonubi carried more than 3039.3 grams on the seven trips). With the 430 grams seized from Shonubi, this would have resulted in a total close to that found by the court at the initial sentence. The Government was, however, content to advance the more conservative view that

approximately 2,500 grams (2090 + 430) were smuggled.

In sum, the government argued, “reliance on [Dr.] Boyum’s statistical analysis, which is based upon relevant data ..., meets [the government’s] burden of proof [as to 2,500 grams]....”

2. Defense expert

To evaluate Dr. Boyum’s study, the defense retained Professor Michael Finkelstein.... Professor Finkelstein reviewed Dr. Boyum’s analysis. He proffered two objections.

First, according to Professor Finkelstein, Dr. Boyum’s study dealt entirely with the range of quantities carried by different smugglers (“interperson variation”) but did not account for the range of quantities carried by one smuggler during his or her smuggling career (“intertrip variation”). Such variation could occur, according to Professor Finkelstein, for a variety of reasons. “For example, ... one might reasonably believe that [Shonubi began his smuggling career] with smaller amounts and increased the amount carried as he became more practiced.... Or trips on which less is carried may more frequently escape detection.” According to Professor Finkelstein, an analysis of intertrip variation was required not only by appropriate statistical practice, but by the court of appeals’ mandate: “By refusing to accept the assumption that the amounts of heroin brought in on successive trips were the same, the Court [of Appeals] ... determined that intertrip variation cannot be ignored.”

To account for this “trip effect,” Professor Finkelstein suggested using multiple regression analysis as a method of exploring the relationship between trip number and quantity carried.

Professor Finkelstein noted that such an analysis could be performed using the government’s data only “if that data included the trip number at which [each] arrest was made.” Such data, he suggested, would enable him to develop a more accurate picture of Shonubi’s conduct over a series of trips.

Professor Finkelstein’s second objection was broader. Referring to the language of the court of appeals mandate in the instant case, he wrote:

[S]tatistics relating to others would not usually be characterized as “specific evidence” relating to Shonubi.... [I]f one Shonubi trip is not a sufficient basis for inferring what was brought in on other Shonubi trips, then, *a fortiori*, trips by others could not be sufficient to make that inference.... Dr. Boyum’s analysis is not an adequate basis for estimating the total amount brought in by Shonubi in the seven trips made prior to his arrest.

Professor Finkelstein concluded: “I do not question Dr. Boyum’s calculations, but only [their] application to Shonubi.”

3. Rule 706 Panel

The “Panel” appointed by the court pursuant to Rule 706 consisted of Professors David Schum and Peter Tillers.

The Panel began its analysis by noting that under the Sentencing Guidelines, Shonubi's conduct "falls ... within base offense level 32 ... if the aggregate weight of the heroin imported by Shonubi in his eight trips is at least 1,000 grams.... Hence ... it may not matter whether the heroin imported by Shonubi weighs 1,000 grams, 1,500 grams, 2,000 grams, or 2,500 grams." "Stated most starkly, [the issue is whether] Shonubi imported a total of only 572.6 grams of heroin (or more) in his seven drug-smuggling trips before December 10, 1991."

To the Panel, this observation was relevant to the question of how useful statistics could be to the court, since

it is intuitively obvious that the resolution of a question about the sufficiency of evidence to show the importance of a particular quantity of heroin may depend on just how much heroin must be shown to have been imported. For example, if the government were obligated to show only that Shonubi imported an aggregate of one gram of heroin in his seven drug-smuggling trips ... it is doubtful in the extreme that anyone would question the sufficiency of the evidence in the record....

a. Use of fictions

The Panel disputed the government's claim that, "[a]ccording to [its] generated distributions, there is a 99% probability that Shonubi carried at least 2090.2 grams of heroin on the seven trips combined." According to the Panel,

there is no such thing as "the" probability distribution for Shonubi or for anyone else.... There is an infinity of possible probability distributions that might be applied in the present case. Each of these probability distributions rests on different sets of assumptions.

Moreover, according to the Panel, since

[t]here were only 117 data points provided by the U.S. Customs Service.... Boyum's 100,000 cases are all fictitious.... Boyum could have generated 100,000 *trillion* numbers and yet have come no closer to determining "the" probability distribution regarding Shonubi.

The Panel did not rule out the use of statistical models that accord with real-world patterns:

What we see in Boyum's study is an effort to compare the behavior of an individual (Shonubi) with the functioning of a computer in generating fictitious episodes of drug smuggling. Fictions can be useful if they are sensible and if they are used with appropriate caution.... When courts ... use ... simulation evidence they have to decide the extent to which any given simulation succeeds in capturing matters that are relevant to a determination of matters such as Shonubi's probable past behavior.

Dr. Boyum's simulation, according to the Panel, "rests on various assumptions. If the assumptions make no sense, the simulation cannot represent how the events of interest [occur] in ... 'real life.' "

b. Problems with government's assumptions

The Panel advanced two concerns about Dr. Boyum’s assumptions. First, in each simulation of seven trips Dr. Boyum’s computer chose the seven numbers independently. (This was done “without replacement”—the equivalent of simulating a game of poker by generating cards at random without accounting for the cards already removed from the deck.) The Panel recognized the appeal of this “independence assumption”—which can greatly simplify the statistician’s work—but concluded that the assumption was improper in this case. According to the Panel, “it is hard to believe that for Shonubi or any other balloon-swallower there is no dependence at all among the amounts ingested on successive trips.” The panel noted: “[D]ependencies are especially likely to be found in problems involving a sequence of similar human actions.”

One such dependency could be the trip effect, relied on by the defense expert. The Panel agreed with Professor Finkelstein that “[i]t is unlikely that the man who swallowed.... [the highest of the 117 DEA figures in Table 1] was on his first trip.” It went on to suggest that smugglers would learn to carry more on each trip: “[I]t is likely that balloon swallowing is a gastronomic ‘art’ that may improve over time.”

The second type of dependence discussed by the Panel is the “interperson effect.” The Panel noted:

it may not make any sense to assume that there is complete independence from swallower to swallower.... [I]t is reasonable to assume that some of the swallows know each other and compare notes about their experiences with their risky behavior. Perhaps there are groups of couriers who work from the same [wholesalers].

c. Comments on defendant’s report

The Panel agreed with Professor Finkelstein that data about trip number would have been helpful. Given such data, instead of performing a regression analysis, as Professor Finkelstein proposed, the Panel suggested calculating the standard deviation for each such smuggler. From those numbers, one could calculate the average standard deviation for all 117 smugglers. This would provide a measure of intertrip variation that could, the Panel suggested, be useful in approximating Shonubi’s behavior prior to the trip that led to his arrest.

* * *

f. Simulations accounting for trip effect

Finally, the Panel presented two simulations of Shonubi’s behavior allowing for the trip effect. For both simulations, the Panel imagined that on his first trip Shonubi carried only 42.156 grams. This amount is the lowest of any of the 117 seizures reported by the customs service. For his eighth and last trip, the Panel used the amount Shonubi actually carried on the trip on which he was arrested.

The Panel connected these points using two different approaches. The first (Chart C) assumes an arithmetic progression (that is, an increase from 42.156 to 427.4 in seven even steps). Under this assumption, the total quantity for eight trips is 1,930 grams. The second assumes a shallower learning curve. This simulation (Chart D) results in a total weight of 1,479 grams.

CHART C

Panel's estimated weight in grams carried by trip

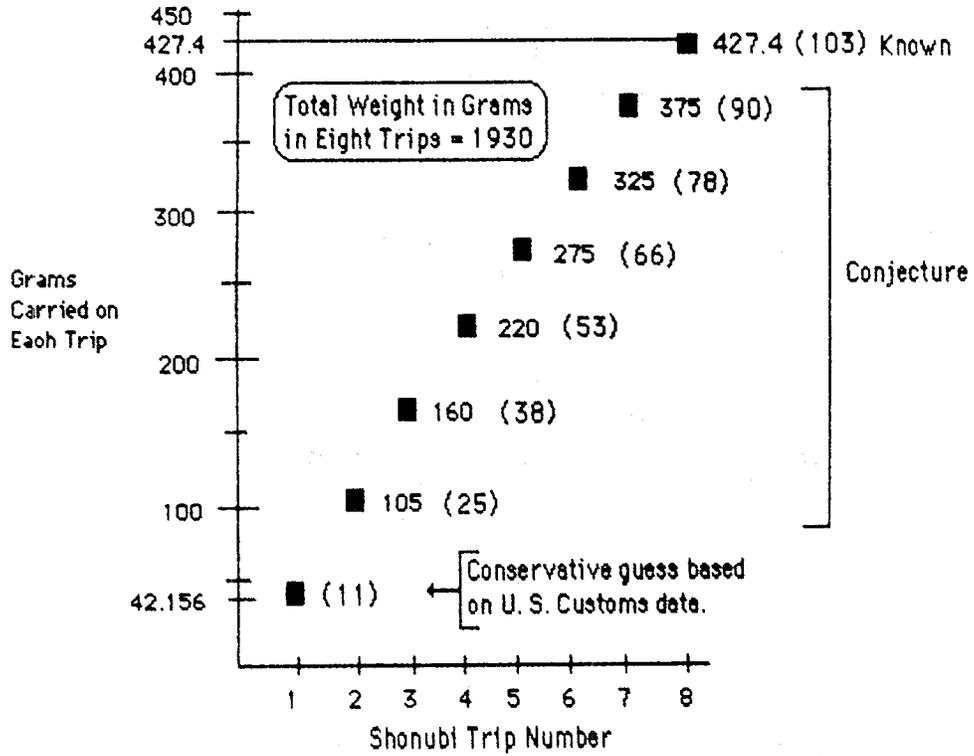
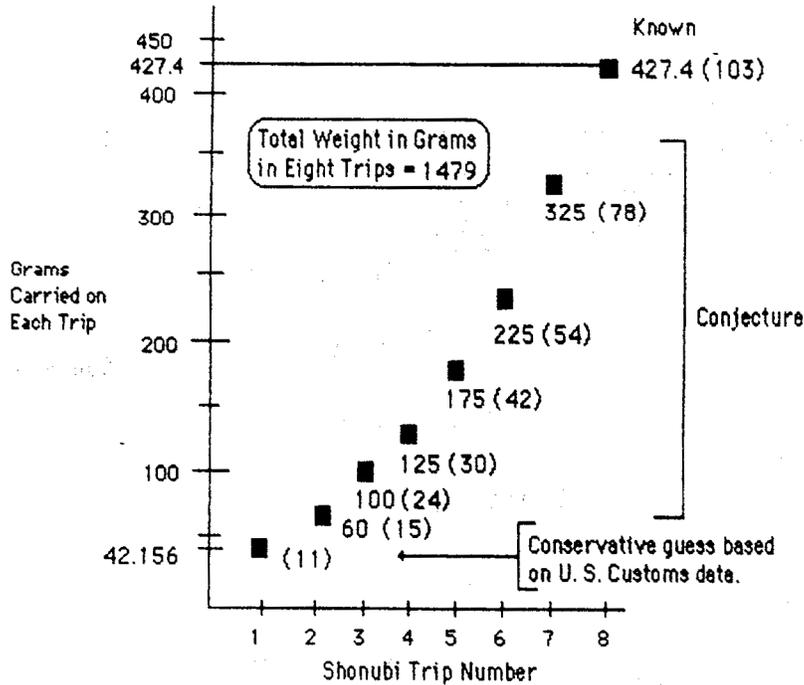


CHART D

Panel's alternative estimated weight in grams carried by trip



According to the Panel, it is not possible to say which of the projections best simulates Shonubi's behavior. Yet, the Panel observed, "if the issue is whether Shonubi imported an aggregate amount of 1,000 grams, *under either of our conjectures, he did that.*" The court's own view, based on all the evidence available, is that the learning curve is much steeper—and levels off at close to the final amount more quickly—than in either of the Panel's projections. Yet the analysis suggested in Charts C and D deserves substantial weight.

g. Conclusion

The Panel concluded that "the uncritical acceptance of any statistical method invites us to be misled. By the same token, the rejection of all statistical evidence may leave us ill-informed when we do not have to be."

[I]t is true, on the one hand, that the 117 cases provided by the U.S. Customs Service cannot yield "specific evidence" about Shonubi. On the other hand, the Customs Service data do provide evidence about a reference class of individuals to which Shonubi can reasonably be said to belong.... [I]t is sometimes reasonable to make use of a particular reference class. The decision whether to do so boils

down ... to the question of whether the arguments for ... the use of [that] reference class do or do not seem reasonable and whether the [required] arbitrary choices ... do or do not strike the decision maker as outlandish.

* * *

C. Testimony on economics of heroin smuggling

Based on responses to its draft memorandum, the court asked the parties to provide information on the economics of heroin smuggling in 1990 and 1991, specifically the minimum amount that was economically feasible to carry.

* * *

In response, the government proffered the testimony of James Glauner, a special agent with the DEA.... Glauner outlined the economics of heroin transshipment through Nigeria, during the period in question, as follows: Heroin was purchased either in Southeast Asia (generally Thailand) or western Asia (generally Pakistan). From September 1990 to December 1991, the period of Shonubi's heroin smuggling trips, the price of heroin in those countries ranged from \$3,800 to \$10,000 per kilogram. However, a Nigerian trafficker incurred a number of other costs in obtaining heroin for shipment to the United States....

[B]ribes and other expenses brought the total price of obtaining and preparing a kilogram of heroin for shipment to the United States to around \$20,000. During the same period, payments from purchasers in the United States upon delivery in this country averaged \$60,000 per kilogram, with \$65,000 the "high end." (This is somewhat higher than the estimate adduced at trial.) Thus the trafficker stood to earn \$40,000 per kilogram, or \$40 per gram, upon delivery of the heroin in New York....

Given an average profit of \$40 per gram, the swallower would need to carry 125 grams to pay his way—that is, to break even for the trip. Using the low-end wholesale price, \$3,800, instead of the average, \$6,000, brings the break-even point down to 118 grams. Using this low wholesale price and the high-end retail price, \$65,000, further lowers the break-even point, to 106 grams. As Glauner pointed out, however, a "trafficker wants to do much more than break even. He wants to make as much profit as he can."

On cross-examination, Glauner observed that the economics are different for every smuggler, some of whom, for example, may travel to Nigeria for purposes other than smuggling. "There are many variables," he stated. He also agreed that not every smuggler breaks even on every trip. However, he stated: "If you don't do the job right the first time, you're not going to be employed very long." That a swallower has made many trips makes clear that he was economically worth employing, according to Glauner. "Anyone who was used eight times would be a very reliable individual, who was capable of making a lot of money for the traffickers and bringing [in] considerable amounts." He observed that, while a trafficker can often absorb the cost of a courier being unsuccessful, "that courier would not be reemployed." * * *

Glauner also estimated that of those swallows who enter the United States from Nigeria, 25 percent are caught (requiring the other carriers to bring in more than a bare minimum to make up for these losses). He reported knowing of no evidence that swallows who carry larger amounts are more likely to be caught, since “the only way [heroin] shows is through an X-ray.” * * *

He estimated that, on a first trip, a swallower might carry 150 to 250 grams, and that “if they couldn’t swallow close to 200 grams [on the first trip], I don’t think that they would be reemployed.” Thus, while he accepted the possibility of a learning curve, he estimated its effects on a series of trips by a successful swallower as minor.

Glauner noted that swallows generally received \$7 to \$8 per gram for delivering heroin in this country in 1990 to 1991. That means that a smuggler who paid his own airfare of \$2,000 would have had to carry 250 to 300 grams to break even.

It is not necessary to accept the precise figures provided by the witness. It is apparent from his testimony that there is a floor amount below which heroin smuggling does not make economic sense.

* * *

XII. Application of Law to Facts After Remand

The government’s analysis is enticingly simple: using a short computer program and real data about real smugglers, it simulated 100,000 possible seven-trip series. The resulting statistics were impressive.

Nonetheless, in contending, based on the simulations alone, that there is a 99 percent chance that Shonubi carried more than 2090.2 grams of heroin on his first seven trips, the government overstated its case. While Dr. Boyum’s analysis is useful, it is not decisive for the reasons suggested by the other experts.

By contrast, the defense expert, Professor Michael Finkelstein, seems to have overstated the case against statistics. He argues that no statistical analysis would constitute “specific evidence” of Shonubi’s behavior. Since he finds the data imperfect, he gives them no weight whatsoever.

The 706 Panel took a middle view. Although asserting that Dr. Boyum’s analysis alone cannot meet the government’s burden, it did not end its inquiry there. It acknowledged the interdependence of statistical and non-statistical analyses, declaring: “[T]here is no intrinsic or inherent incompatibility between statistical methods of inference or argument and other methods of inference or argument.” It determined that the numbers make it highly likely that Shonubi imported more than 1,000 grams of heroin, enough to constitute a level 32 offense. It also pointed out, correctly, that the available statistics could explain, or confirm, decisions reached without statistics. Some statistical tools, the Panel noted, are not evidence, but ways people “organiz[e] their thoughts about evidence.” These observations comport with the courts’ understanding of the proper uses of the available statistics in the instant case.

Professors Finkelstein, Schum, and Tillers make powerful and persuasive arguments for treating the statistical analysis of Dr. Boyum as less than conclusive. Certainly, the additional analysis they suggest,

linking quantities to trip numbers, would be useful. It is doubtful, however, whether such data can ever be obtained. Because foreign nationals engaged in crime routinely use false passports, available documents do not reliably reveal the number of trips. Nor are smugglers likely to provide these data because revealing prior criminal conduct could a) lead to increased penalties and b) jeopardize family members. As a result, there is no available means of determining with reasonable certainty what trip number is represented in any significant number of the 117 seizures.

That is not to say that the government's statistical data are unhelpful. A powerful gestalt impression supporting the prosecution's view is provided by Chart A. Consistent with human variations in swallowing capacity, and differences in the skills of smuggling organizations, some limited variation in the amounts smuggled are to be expected. Even keeping in mind the other experts' important observations on the role of statistical methodology, including placement of the bins in determining the shape of the curve, the form of the curve strongly suggests one underlying explanation for the distribution of the DEA data: the desire to maximize the amount of heroin carried on every trip. All of the evidence and institutional experience of the court points to the same explanation. Thus, even though the government's statistical data are less complete than we might like, they support and confirm the conclusions that would be reached without statistics.

* * *

A. Conclusions about experts' reports

* * * More than 99 percent of the seizures of heroin from Nigerian swallowers, apprehended where Shonubi was apprehended during the period of his smuggling activity, involved 100 grams or more. The only seizure below 100 grams was an "outlier" that would commonly be discounted in analyzing data.

These data suggest that each of Shonubi's trips was likely to have involved 100 grams or more. It would be helpful to know more about how Shonubi compares to the smugglers in the sample. In fact, a good deal *is* known: it is evident from the trial and other proceedings that Shonubi is unusually brazen even for a smuggler. It is also known that he is capable of carrying 427.4 grams of heroin—which may not be true of all 117 smugglers in the DEA sample.

The government, for purposes of its analysis, "assumed that Mr. Shonubi was a typical heroin swallower." This was a conservative assumption; Shonubi appears to have been a more-effective-than-typical swallower.

Further, the concentration of the numbers in the 300–500 gram range confirms the sentencing judge's conclusion regarding the trip effect—that, if it exists at all, its influence is minor. If swallowers were independent actors, carrying whatever amount they felt comfortable carrying on any given trip, there would surely be a wider range of quantities, including small amounts representing the first efforts of neophyte smugglers. The fact that there are few seizures of more than 500 grams in the Customs Service data—but many seizures just below 500 grams—suggests that there is a natural physical limit, and that most smugglers try to approach that limit as soon as they can.

B. Random versus non-random sampling

In the earlier draft of this memorandum, circulated for comment, the court took the position that “[t]here is no qualitative difference between the two extrapolations [in this case, from four balloons to 103 balloons and from one trip to eight trips], nor does any rule forbid extrapolation in the latter context—in fact, the Sentencing Guidelines demand it. The difference is entirely probabilistic.” The memorandum further stated that: “While the extrapolation from the amounts in one to eight trips may arguably rest on weaker inferences than the extrapolation of amounts from 4 to 103 balloons ... how much weaker—bearing in mind the applicable burden of proof—is a question the court must answer based on the policy of protecting defendants in criminal cases against unjust conclusions.”

Professor Finkelstein properly criticized this view as overlooking

an important qualitative difference between the two “extrapolations.” The difference is that the first involves a statistical sample while the second involves an observational study. In a statistical sample the mechanism for selection is known—it is randomization. The fact of randomization justifies the statistician in assuming that the selection was unbiased because it was uncorrelated with biasing factors, and permits him or her to calculate a confidence interval for the estimate. By contrast, the data taken from Shonubi’s trip on which the arrest occurred are the result of an observational study because the trip was not selected at random from the universe of smuggling trips. As a result, we do not have the same assurance that the method of selection was not correlated with biasing factors, referred to as confounders.

Observational studies are often used in statistical science, but estimates based on such studies must be adjusted for possible confounders. The basic principle described in another context applies here as well: “[I]n observational studies unadjusted treatment effects and adjusted treatment effects generally differ, and to guard against spurious effects adjustment is required. In randomized studies, by contrast, adjusted and unadjusted treatment effects are equal, in theory, because of the orthogonality (uncorrelatedness) of treatment allocation with confounders built in by the randomization.”

Applying that theory here, it was appropriate for the forensic chemist to select bags at random.... But it was not appropriate to extrapolate the results from the arrest trip to other trips without accounting for possible confounders, since the mechanism of selection was not random, but possibly correlated with the amount carried.

If trip number is a factor in apprehension—as it was in Shonubi’s case because of his failure to account convincingly for his past trips [which led to his detention at the airport]—then the arrests in the government’s data would tend to be of higher-trip-number smugglers. A trip effect would then be a confounder that could cause Dr. Boyum’s data to understate the variation in amounts carried from trip to trip by Shonubi. Under the principle stated above, adjustment for trip number would be required.

Professor Finkelstein’s caveat is important. The trip effect as a possible confounder cannot be overlooked. As demonstrated in the remainder of this memorandum, however, the statistical data, viewed in conjunction with other evidence, is helpful even if the trip-number confounder renders it imperfect.

* * *

D. Conclusions on proper role of statistics in this case

Statistical analysis alone could not satisfy the government's burden. It has, however, interacted with inferences reached through non-statistical analysis in the following ways: 1) strengthening the trier's confidence in those inferences; 2) permitting the trier to "cross-check" those inferences; and 3) helping the court to illustrate those inferences.

* * *

XV. Conclusion

The defendant's offense level, based on a finding that he smuggled over 1,000 but less than 3,000 grams of heroin on eight related trips, is 32. The 2-point enhancement [for perjury], which the court of appeals has ordered this court to impose, brings his offense level to 34. The range for a level 34 offense in the defendant's criminal history category ... is 151–188 months. A prison term of 151 months—twelve and one half years—more than satisfies the sentencing goals....

United States v. Shonubi

[Shonubi IV]

United States Court of Appeals for the Second Circuit, 1997

103 F.3d 1085

NEWMAN, CIRCUIT JUDGE

* * * Charles O. Shonubi appeals from the sentence of the District Court for the Eastern District of New York resentencing him to a prison term of 151 months after the same sentence had been vacated by this Court and the case remanded for resentencing. We conclude that the record lacks the “specific evidence,” required by our prior decision to support punishment for drug quantities sought to be attributed to the defendant, over and above the quantity for which he was convicted. We therefore vacate the sentence and remand with directions to impose a sentence based on the 427.4 grams of heroin that the defendant was convicted of bringing into this country....

* * *

Discussion

I. Punishment for “Unconvicted” Conduct

One of the most significant changes effected by the Sentencing Guidelines is the prescription of precisely calibrated punishment for conduct of which the defendant has *not* been convicted. Prior to the Guidelines, the law was settled that a defendant’s wrongful conduct, beyond the conduct constituting the offense of conviction, was *relevant* to punishment, but the law established no specification of the additional punishment a defendant was to receive for such “unconvicted” conduct. * * * [T]he Guidelines then took the extraordinary and totally unprecedented step of punishing the relevant conduct at precisely the same degree of severity as if the defendant had been charged with and convicted of the activity constituting the “relevant conduct.” No other guideline system in any of the states has instituted such an approach to punishment.

* * *

A guideline system that prescribes punishment for unconvicted conduct at the same level of severity as convicted conduct obviously obliges courts to proceed carefully in determining the standards for establishing whether the relevant conduct has been proven. We have recognized the need for such care with regard to the basic issue of the degree of the burden of proof. Thus, though the Sentencing Commission has favored the preponderance-of-the-evidence standard for resolving all disputed fact issues at sentencing, we have ruled that a more rigorous standard should be used in determining disputed aspects of relevant conduct where such conduct, if proven, will significantly enhance a sentence.

* * *

II. The “Specific Evidence” Requirement

The “specific evidence” we required to prove a relevant-conduct quantity of drugs for purposes of enhancing a sentence must be evidence that points specifically to a drug quantity for which the defendant is responsible. By mentioning “drug records” and “admissions” as examples of specific evidence we thought it reasonably clear that we were referring to the defendant—*his* admissions and records of *his* drug transactions. And by “live testimony” we were referring to testimony about *his* drug transactions. Judge Weinstein apparently misunderstood our prior opinion to equate “specific” evidence with “direct” evidence, a consequence that, as he pointed out, *Shonubi III*, 895 F.Supp. at 478, would preclude all use of circumstantial evidence. However, our identification of drug records as one example of “specific evidence” should have dispelled that misunderstanding since such records are a form of circumstantial evidence. If a defendant’s drug records reflect drug transactions of a specific quantity, that is circumstantial evidence permitting the inference that the defendant has trafficked in that quantity of drugs.

Our approach might fairly be criticized on the arguable ground that since sentencing facts need normally be established only by a preponderance of the evidence, ... a rigorous standard concerning the quality of evidence should not be applied in a context where the degree of persuasion required is reduced.

This argument does not persuade us to abandon a safeguard adopted in response to the Sentencing Commission’s insistence that a defendant should be punished for unconvicted “relevant conduct” exactly as if he had been convicted of such conduct....

III. Is There “Specific Evidence” of a Relevant Conduct Drug Quantity?

Though disapproving of our requirement that the relevant conduct quantity of drugs be based on “specific evidence,” *see Shonubi III*, 895 F.Supp. at 475–79, the District Court endeavored to apply this requirement. Judge Weinstein acknowledged that we had required “specific evidence” such as drug records, admissions, or live testimony, and identified evidence that he believed met our standard. For “records” he cited “a combination of drug records (including DEA and Customs Service records) and the records of Shonubi’s trial, sentencing hearing, and presentence report.” For “admissions” he cited Shonubi’s “admissions at the time of his arrest.” For “live testimony” he cited “the statistical analysis introduced on remand as well as testimony on the economics of heroin swallowing.” The Judge said he also relied on Shonubi’s demeanor at trial and sentencing and the Judge’s own “acquired knowledge of the drug trade.”

These items of evidence are not “specific evidence” of drug quantities carried by Shonubi on his prior seven trips. We required specific evidence of what Shonubi had done. The DEA records informed Judge Weinstein of what 117 other balloon swallowers from Nigeria had done during the same time period as Shonubi’s eight trips. Those records of other defendants’ crimes arguably provided some basis for an estimate of the quantities that were carried by Shonubi on his seven prior trips, but they are not “specific evidence” of the quantities he carried. The defendant’s distinguished expert on statistics, Michael O. Finkelstein, Esq., correctly informed the District Court that “statistics relating to others would not usually be characterized as ‘specific evidence’ relating to Shonubi.” The experts on the Court’s Rule 706

panel rendered the same advice. Though the records of Shonubi's trial, sentencing hearing, and presentence report, relate specifically to Shonubi, they do not provide "specific evidence" of the quantities carried on his prior seven trips, any more than they did when these records were before us on the prior appeal. Shonubi's admissions likewise are "specific" as to him, but contain no "specific evidence" of the quantities carried on his prior trips. The statistical and economic analyses relate to drug trafficking generally and not to Shonubi specifically....

Though we conclude that the extrapolation analyses relied on by the District Court do not yield the "specific evidence" that our remand required for determination of the "relevant conduct" quantities carried by Shonubi on his seven prior trips, we are obliged to reckon with the District Court's point that such extrapolation is defensible because it was accepted for use to estimate the quantity carried by Shonubi on his eighth trip....

The short answer to the District Court's attempt to justify extrapolation to estimate the quantity carried on the seven prior trips because that technique was used to estimate the quantity carried on the eighth trip is that this Court accepted the estimate used for the eighth trip, in the absence of any objection by the appellant, but did not accept an estimate of the quantity for the seven trips, once the appellant specifically raised the issue on the prior appeal.

The further answer is that the seeming inconsistency fails to take account of the different purposes for which the two estimates were made. The estimate of the quantity carried on the eighth trip was made to determine the quantity for the counts on which Shonubi was convicted. The estimate for the prior trips was used to punish Shonubi for conduct of which he had not even been charged, much less convicted. The distinction warrants caution in the use of estimates. Furthermore, the extrapolation as to the eighth trip was based on evidence of what Shonubi had done; the extrapolation for the prior seven trips was based on what 117 other people had done....