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The Textures of Heroin: User Perspectives on “Black Tar” and Powder Heroin in Two US Cities

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Abstract

Since the 1990s, US heroin consumers have been divided from the full range of available products: east of the Mississippi River, Colombian-sourced powder heroin (PH) dominates the market, while to the west, Mexican-sourced “black tar” (BTH) is the main heroin available. By conducting qualitative research in two exemplar cities, Philadelphia (PH) and San Francisco (BTH), we compare users’ experiences of heroin source-types, markets, health consequences and consumption preferences. The strict division of heroin markets may be changing with novel forms of powder heroin appearing in San Francisco. Our researchers and interviewees perceived vein loss stemming from the injection of heroin alone to be a particular problem of BTH while among the Philadelphia sample, those who avoided the temptations of nearby cocaine sales displayed healthier injecting sites and reported few vein problems. Abscesses were common across both sites, the Philadelphia sample generally blaming missing a vein when injecting cocaine and the San Francisco group finding several explanations, including the properties of BTH. Consumption preferences revealed a ‘connoisseurship of potency’, with knowledge amassed and deployed to obtain the strongest heroin available. We discuss the reasons that their tastes take this narrow form and its relationship to the structural constraints of the heroin market.

Keywords

heroin; drug markets; injection drug use; heroin purity; USA; connoisseurship

Street heroin is well known to vary in purity and adulterants (Akhgari et al. 2012, Maher 2001, Hempstead and Yildirim 2014). Less often discussed is the fact that it appears in several different ‘source-types’ ranging from pale powders to dark, sticky, opium-like substances. Regional monopolies separate most US heroin consumers from the full range of heroin source-types sold in their country (Ciccarone 2005). Since the 1990s, consumers on the East Coast have been almost exclusively offered Colombian-sourced powder heroin (PH). Those on the West Coast encounter Mexican-sourced ‘black tar’ heroin (BTH) and more recently ‘gunpowder’ heroin (GPH) as well as an unidentified white powder. In the mid-1990s the sources of heroin shifted from four international regions to these two countries (Ciccarone 2009). In the middle of the US, more competition exists between each source (Rosenblum, Unick, and Ciccarone 2014).

These contrasting source-types vary in texture, physical state, cold/hot water solubility, pH balance, heat stability, weight/volume and purity (Ciccarone and Bourgois 2003). Strang et al first raised the significance of these differences, specifically in relation to their comparative health risks in the United Kingdom. They hypothesized that some, such as the ‘salt’ form from South East Asia, were suitable for injecting and others for smoking (the ‘base’ form from South West Asia) with users moving to injecting when unable to obtain the smokeable form (Strang, Griffiths, and Gossop 1997).

In the US, Ciccarone and Bourgois hypothesized that injection preparation practices associated with these specific heroin source-types explain the higher prevalence of HIV among injection drug users (IDUs) in cities with PH market dominance relative to cities with BTH market dominance. Although injectors re-used and shared syringes regardless of heroin-type, the repeated flushing of syringes with water due to the BTH’s signature stickiness and possibly the application of heat to dissolve BTH, likely accounted for the variation in HIV prevalence (Ciccarone and Bourgois 2003). In addition, BTH appears to induce venous scarring rapidly causing users to migrate to subcutaneous or intramuscular injection routes, with lower HIV transmission risks (Bourgois and Schonberg 2009, Rich et al. 1998).

Other public health risks have also been linked to particular source-types. BTH is also associated with specific infections: wound botulism (Passaro et al. 1998, Werner et al. 2000), necrotizing fasciitis (Kimura et al. 2004), tetanus (Bardenheier et al. 1998), and other skin and soft tissue infections (SSTIs) (Binswanger et al. 2000, Ciccarone et al. 2001, Harris and Young 2002), possibly due to contamination of the heroin and/or the increased frequency of subcutaneous injection in users with scarred veins (Williamson, Archibald, and Van Vliet 2001, Binswanger et al. 2000, Ciccarone et al. 2001). Because the US heroin market is geographically segmented, the distribution of these health risks and problems may also reflect users’ locations. (Ciccarone 2009, Binswanger et al. 2000, Kimura et al. 2004)

Recently, the Heroin Price and Purity Outcomes (HPPO) study has found that relative to BTH, PH is associated with particular risks of overdose independent of purity; the percentage of powder heroin sold by metropolitan statistical area was an independent predictor of overdose controlling for purity (Unick et al. 2014). Qualitative research suggests that this may result from regional differences in retail market models, marketing techniques

and the heroin source-types themselves (Mars 2015a). A quantitative analysis of hospitalizations for injection-related SSTIs carried out by our team found that cities where the dominant heroin type was Mexican-sourced (i.e. mostly BTH) had twice the rates of SSTIs compared to those where Colombian-sourced powder heroin dominated. A doubling in SSTI rates nationally between 1993 and 2010 was a particularly worrying finding. To date no published research has compared the effects of BTH and PH on vein health or SSTIs from the point of view of injecting drug users.

Users' preferences in heroin source-types and what they considered the 'best' heroin is also an under-researched area. In a rare example, Bancroft and Scott Reid studied concepts of drug quality among users of illegal drug sales internet sites, reporting that dependent heroin users sought and valued consistency of effect and rapid dispatch/delivery of their orders for the relief of withdrawal symptoms. Adulteration by dealers could be seen as negative (diluting) or positive in the enhancement of the high and potency was not considered analogous with purity (Bancroft and Scott Reid 2015). We consider whether a 'connoisseurship' of heroin source-types exists given restricted the choices available to consumers.

By studying heroin injectors in two US cities with different heroin source-types we explore the differences and commonalities in their experiences, behavior and beliefs and consider the ways their lives intersect with the structural forces of the US's divided market. First, we look at the heroin products on sale in San Francisco, California (BTH), and Philadelphia, Pennsylvania (PH), and how these fit into the national picture. Second we examine the effects of distinct heroin source-types on injectors' bodies. Finally we turn to heroin consumers' preferences and the meaning of quality for users.

Methods

This study used ethnography and qualitative interviewing in Philadelphia and San Francisco. The ethnographic insertion of the same anthropological team in both cities provided privileged access to observational and interview data in the natural environment of street-based users and allowed comparative observations. It informed the preparation of the interview guide and the recruitment priorities and sites for cross-regional comparison.

For the qualitative interviews, the ethnographic work enabled a targeted sampling strategy, with purposive recruitment augmented by the snowball convenience sampling techniques generally used to access hidden populations. Interviewees over 18 who were current heroin injectors and living in either San Francisco or Philadelphia were recruited in areas of known open-air drug markets in both cities and through needle exchanges. When it became clear that the effects of heroin on vein health was complicated by the injection of cocaine powder, we recruited additional users who injected only heroin. All participants were interviewed once in 2012 and several were accompanied on multiple occasions. All the interviews were audio recorded and transcribed verbatim. Transcriptions were verified against the audio recordings for accuracy.

Twenty-two current heroin injectors were interviewed in Philadelphia and 19 in San Francisco. NVivo software was used to assist with data organization and retrieval (QSR-International 2012). ‘Open coding’ was carried out to identify concepts and categories and systematically apply them throughout the transcripts (Strauss and Corbin 1990). The study protocol was approved by UCSF and University of Pennsylvania Institutional Review Boards and the data are protected by two Federal Certificates of Confidentiality issued by NIH/NIDA. Details of the methods have been reported previously (Rosenblum et al. 2013, Bourgois and Schonberg 2009, Mars 2014).

Philadelphia on the East Coast and San Francisco on the West Coast were chosen for their contrasting heroin supplies. Philadelphia is primarily supplied with PH sourced from Colombia while San Francisco mainly receives BTH and more recently GPH believed to originate in Mexico. Philadelphia is highly ethnically segregated and has suffered for many years from the effects of de-industrialization (Rosenblum et al. 2013). The 2010 Census was the first since the 1940–1950 census to report a population increase (Mackun 2011) after decades of outmigration. San Francisco is a more integrated, prosperous global city that attracts immigrants worldwide and within the US. It has been undergoing an intensifying process of gentrification and population increase.

Results

Characteristics of the Study Participants

Among the Philadelphia sample interviewed, 8 were women and 14 were men. Sixteen had used for more than 3 years and 6 for 3 years or less. In the San Francisco sample, 12 were women and 7 were men, among whom 15 had used for more than 3 years and 4 for 3 years or less. Across both groups, some had completed high school but few referred to experience of college education; unemployment and either homeless or insecure housing were common. In Philadelphia, users commonly participated in the peripheral economy around drug markets selling syringes or “steering” users from outside the neighborhood to heroin sales corners. In San Francisco, some users sold marijuana to support themselves. Other sources of income across the cities included working in construction, social service benefits, acquisitive crime and sex work. The Philadelphia injectors had mostly grown up in and around that city (17 out of 22) and begun their drug using careers there, while the majority (14 out of 19) of the San Francisco users were migrants from around the country.

Heroin markets and products

(i) Philadelphia—Heroin in Philadelphia is a relatively refined substance which ranges in color from white to light tannish brown, mixing to a transparent “ice-tea” colored solution in cold water when of good quality, according to users interviewed. It is poorly vaporizable (smokeable) but can be effectively insufflated (snorted) although injecting is the most efficient route of administration. On rare occasions BTH was said to be available in limited amounts but in five years of observations the ethnographers never saw any being sold or used. No Philadelphia users reported seeing GPH.

Some of the Philadelphia sample considered that the PH had no smell, while others thought that it only smelled of whatever it was ‘cut’ with including vitamin B or multivitamin powder. (‘Cutting’ or adding other material to heroin can enhance or dilute its effects depending on the substances added.) A couple of users mentioned that it smelt of opium, one of a ‘chemical’, one ‘cat’s piss’ or ‘kitty litter’ and one a ‘vinegar’ smell if it’s ‘garbage’ (highly adulterated low purity heroin).

Philadelphia’s heroin, like other northeastern US cities, is sold with competing brand-labelling (small postage stamp size glassine packets stamped with popular brands like ‘Toyota’ or ‘Nike’ or black humor names like ‘Deathwish’). In Philadelphia it is further packed inside tiny ziplock bags (see Figure 2). These products can also be bought as a small stack of bags held together with a rubber band known as a ‘bundle’ of 12–14 bags for \$80–110, the most common way to buy a larger quantity. In Philadelphia’s hierarchically controlled open-air market (Rosenblum et al. 2013) the price has consistently remained \$10 a bag for decades though some older users reported that the amount in each bag had diminished. Although the price was constant, purity by volume varied and it is on purity that Philadelphia heroin sellers compete against each other (Mars 2015b).

In Philadelphia’s open air street market, personal relationships between buyer and seller matter, with preferential prices on bundles reflecting not only the normal market characteristics which value repeat customers but also the reduced risk to a seller from a known client in a heavily policed illicit market. (Users in both cities reported family members selling heroin to them for considerably less.) Philadelphia users interviewed typically bought one to three bags of heroin at a time, a sign of its easy availability and possibly greater impoverishment than their San Francisco counterparts. Buying only a bag or two at a time also allowed users to monitor the quality of competing brands, returning only if they deemed it worthy of repeat custom. Cocaine powder was often sold near or together with heroin while methamphetamine, known as a ‘goofball’ when injected with heroin, was rarely used and seemed hard to find in Philadelphia.

(ii) San Francisco—In San Francisco, BTH is a comparatively less refined substance which includes a mixture of alkaloids. It can be ‘chased’ (inhaled), typically when heated on foil, but burns inefficiently; to dissolve quickly for snorting or injecting it requires heat. Although it can range in color through shades of brown to black, the name “black tar” is physically descriptive of this opium-like product (Figure 1). Users in our study described its appearance, which changes with ambient temperature, variously as ‘a little dirt ball’, ‘almost rocky’, ‘sticky’ and ‘shiny’. It can require a knife to cut, be brittle enough to shatter or soft enough to stretch and tear apart when warmed to body temperature, perhaps in a pocket. Those interviewed noticed a distinctive odor but often had difficulty describing it, trying descriptors like ‘vinegar’, ‘acidic’, ‘burning molasses and vinegar’ and coffee. Some speculated that it was cut with molasses, sugar, lactose or shoe polish but few had direct experience of the cutting process.

In the last decade, heroin source-types in San Francisco have expanded beyond BTH; with the addition of reportedly more potent GPH, described by several San Francisco users as a ‘sticky powder’ version of BTH. It may appear in a solid form which crumbles and other

times as a mix of chunks and powder or with a ‘dried coffee’ powdered appearance and sometimes speckled white and black. Among many of the interviewees it had gained popularity as a higher potency alternative to the longer established product.

Users disagreed as to whether GPH was a distinct form of heroin or was a doctored version of BTH. Some of the interviewees mentioned that it clumped together and became tar with small amounts of moisture, as when breathed on. Others claimed that there was ‘fake’ gunpowder which re-formed into BTH with moisture and ‘real’ gunpowder which did not. Its smell was described as similar to BTH or possibly like ‘chocolate’ or as odorless. Like tar, it needed heat to dissolve quickly but tended to be more soluble than BTH.

A more refined powder heroin of widely varying purity was also reported on sale in San Francisco. This was apparently limited to private dealers who arrange sales by cell phone rather than selling on the streets. There is speculation among analysts that this white powder is the result of Mexican chemists using production processes borrowed from Colombian drug producers (ONDCP 2012); another possibility is that it is the synthetic opiate fentanyl, sold under the guise of high quality heroin. The interviews were conducted in 2012 before the recent widespread reporting of fentanyl in heroin supplies (Drug Enforcement Administration 2015), although one of the interviewees who favored this ‘white dope’ suspected it might consist of fentanyl or other drugs. According to the interviewees, cocaine powder was hard to find and of poor quality in San Francisco. Methamphetamine, by contrast, was more widely available but not popular among this group.

Heroin source-types and the body – perceived and observed consequences of injecting

(i) Philadelphia—For the injectors interviewed the condition of their veins, the portals through which pain could be assuaged and pleasure accessed, was of considerable significance. With cocaine powder easily available, concurrent cocaine injecting was common (17 of the 22), some injecting the two drugs together as ‘speedballs’, others preferring to experience them separately as they asserted that simultaneously administered cocaine counteracted the effect of the heroin.

A consensus emerged across the Philadelphia group that cocaine was more damaging to veins than PH. Typical comments were that cocaine ‘really messes your arms up’, ‘cocaine really quickly destroyed my veins’, ‘cocaine burns your veins out’ and its ‘harder on your veins’ than heroin. Only three of the Philadelphia sample used heroin but no cocaine at the time of the interview. However, others who had formerly injected only PH observed that they too had experienced few vein problems until they had added cocaine to their repertoire.

In their wider observations, the ethnographers witnessed no devastating vein loss among heroin injectors in Philadelphia except among those who also injected cocaine powder. No one interviewed there intentionally ‘skin popped’ (injecting into subcutaneous tissue rather than a vein) or ‘muscled’ (injecting into muscle) cocaine because, users reported, it could cause abscesses, was painful and did not produce the initial rush of pleasure.

Users in the Philadelphia group who had lost venous access elsewhere often transitioned to injecting in their neck (jugular vein) but most drew the line at the groin (femoral vein).

Some, like this 29 year old man, considered injecting into their neck particularly pleasurable:

“If you go in your neck it’s because it’s a much better rush. It hits you a lot quicker, a lot more – it seems like it takes less and it just hits you better.”

As well as migrating to new injecting sites, vein loss led the Philadelphia interviewees to “skin pop” and “muscle” heroin, often after failed attempts to find a vein and rarely as a first choice. Both skin popping heroin and injecting speedballs have been linked to abscesses at injection sites (Murphy et al. 2001), a complication commonly reported by the Philadelphia interviewees. However, they generally attributed this to missing veins with cocaine and rarely to PH alone.

(ii) San Francisco—In San Francisco six of the sample injected powder cocaine as well as heroin at the time of interview; five had done so in the past but had given up using it, with remarks that it was difficult to obtain and of poor quality. Seven had either never or only very rarely injected cocaine in the past or present. Most thought cocaine more destructive to their veins than BTH but some considered BTH equally damaging and several attributed the loss of many usable veins to black tar alone. The San Francisco interviewees also reported progressing from arm and leg veins to higher risk and less accessible injecting sites but they seemed to consider the neck the most taboo and most, like this 21 year old man, also mentioned avoiding the groin, remarking “I don’t want to inject near my stuff, near the boys.” While methamphetamine seemed to be more available in San Francisco, only three users reporting injecting it alongside heroin.

Heroin, goofballs and speedball injectors commonly reported suffering from abscesses in the San Francisco group, but there was less certainty regarding their cause, attributing abscesses variously to : 1) skin popping or muscling BTH or GPH either intentionally or accidentally when missing a vein; 2) to BTH being ‘dirtier’ than other heroin source-types; 3) to vein loss; 4) poor injecting hygiene and to unknown causes. Some San Francisco users avoided intentionally muscling or skin popping BTH because, they said, it was painful or led to abscesses.

(iii) Cross site comparisons—The longer term use of more than one heroin source-type, enabling users to observe their comparative vascular effects was rare among the Philadelphia group, only one of whom had traveled extensively in her drug using career, sampling heroin across the US. When asked to compare the different source-types, she was skeptical of differences between them aside from their injecting implications, saying:

“...Heroin is heroin. It’s drugs. I don’t know it’s just like it is anywhere. People here want tar. People on the West Coast want China White [Philadelphia Colombian-sourced PH] just because [...] the grass is greener. I personally prefer China White honestly because the tar tears up your veins.

Such comparative experience was more common in San Francisco not only because of the high proportion of migrants from across the country but also the wider range of heroin products reportedly available. Users interviewed with experience of both PH and BTH reported much more vein damage from black tar. A 25 year old man interviewed in San

San Francisco had been using heroin for approximately 10 years; he had started on the East Coast with PH, using the same injecting spot for several years until he moved to the West Coast and "...ever since I've been doing tar [...] like your veins like they like sink and like run." Wounds and scars witnessed by the ethnographers among BTH injectors in San Francisco were dramatically more severe than any they had seen on the East Coast among either PH alone or PH and cocaine injectors (see Figures 3 & 4). In both cities users reported initiating injecting in their arms and/or legs before resorting to perceived higher risk areas.

Vein loss, resorting to or preferring inaccessible neck veins, inexperience injecting, withdrawal symptoms and hands shaking from the effects of stimulants were commonly mentioned as reasons they might seek help with a shot. The skill required to inject intravenously and the need to be injected, whether among injecting initiates or veterans, produced a form of exchange both for utilitarian motives and symbolic significance (Bourgois and Schonberg 2009, Epele 2002). In both cities, injecting help was traded, whether as a favor between associates in a 'moral economy'; (Maus 1924, Bourgois 1998) for a 'tip' (up to \$10) or a taste (a partial bag of heroin); or for sexual favors from women; with increased injection- and sex-related risk as the consequence (Bourgois, Prince, and Moss 2004). The ethnographers noted that in Philadelphia some older, often male, heroin users could afford their large habits thanks to younger, especially female, users who ask them to inject them in exchange for a bag of heroin.

The meaning of quality

In our efforts to understand injectors' preferences and experiences using contrasting heroin source-types, we asked the question "What is the best heroin you've ever had?" with follow-up questions about the type, location of purchase and subjective experience of its use. Interviewees in both cities considered potency and duration of effect as the chief attributes of high quality heroin. They rarely described heroin in terms of 'purity' or as 'pure', more often referring to how 'strong' it was. In common with Bancroft and Scott Reid's internet site customers, potency and purity were not synonymous (Bancroft and Scott Reid 2015). Adulterants such as fentanyl can increase the overall opiate potency while decreasing the heroin's purity; this 25 year old San Francisco man (previously from Philadelphia) gives an illustrative description:

"The best heroin I've ever had was some grey shit from Philly called 'The Punisher' – was the name of the stamp [brand]. And then I guess it would be the second phase 'Bin Laden's' with the red stamp. That was fentanyl cut. [...] 'The Punisher' was grey little pebbles and it was really good and the f***** 'Bin Ladens', they were good because they were full of fentanyl and they were killing people so obviously they were good".

Although we do not know the chemical composition of the brands to which this man was referring, it is clear that potency and not perceived 'purity' was the most highly valued attribute. Users interviewed in both cities equated high quality with potency and the potential for overdose, like this 29 year old man in San Francisco, using for 6 years:

Q: What's the best heroin you've ever had?

A: Probably the f*****' gunpowder. Well, I don't know maybe 9 months ago my f*****' old lady f*****' fell out [overdosed] from it. That's probably the best I've had in a while, I mean ever I guess.

Appearance, texture and odor, important in the appreciation and selection of other drugs such as alcohol, tobacco and marijuana, were generally only noted in relation to what they might indicate about the potency of heroin. Quality of the actual "high" rarely appeared to be of interest among most of these heroin injectors, as it is, for instance, among marijuana aficionados.

Among heroin injectors in Philadelphia some had tried tastes of BTH when it appeared briefly on the market as a fluke and others knew it only by reputation. That reputation, both among those who had used it and those who had not, was of being a rare, desirable 'treat' or 'West Coast luxury'. Those with direct experience and those without tended to describe it as more potent than PH and as lasting longer but these were mostly fleeting impressions, often vaguely remembered.

One San Francisco resident who had spent time in Philadelphia asserted, "To this day I still say Philly has got the best dope I've ever done", and that BTH "doesn't hold you as well as the other East Coast dope". Unlike the Philadelphia samplers of BTH, the San Francisco users tended to compare it to PH used earlier in their drug using career, usually failing to take account of changes in their own tolerance levels, expressing their experience as an objective measure of the drug's purity.

With the geographical separation of markets, US heroin injectors are unable to choose between BTH and PH 'side by side'. Migration could be a way to overcome this problem but most of the migrants in our study had moved to generally less desired BTH-dominant San Francisco rather than PH-Philadelphia. Some of the San Francisco interviewees' motives for migration were drug-related but none mentioned the quality of the city's heroin as an attraction. While most of the Philadelphia interviewees had grown up there, some had moved from nearby towns or suburbs. Although this did not involve changing heroin source-types, some reported moving into the area of the main open street market where heroin is known to be plentiful, cheap and good quality.

Discussion

The perceptions of the interviewees and ethnographers in this study suggest that the geopolitical forces that have created the US heroin market's segmentation in turn influence the health risks faced by these heroin injectors. Drug-related harm results not only from the individual actions of drug users but from their interaction with the social and political institutions and settings which create the 'structural risk environment' (Rhodes 2009). While some of our findings show contrasting effects of the two main heroin source-types, others transcended these divisions, being common to heroin injectors studied in both cities.

Ethnographic and qualitative research is subject to a number of biases including subjective sampling and response biases. Given that some of events reported often occurred years before the interview, the possibility of recall bias is important to bear in mind. These are

lessened somewhat by the length of immersion in the study sites and interview styles grown out of extensive experience. As with much qualitative research, the samples are small and non-random. However, the qualitatively generated hypotheses regarding the risks of SSTIs from contrasting source-types has been tested in quantitative models by our team (Ciccarone 2016).

The loss of venous access was perceived to be a major problem among heroin injectors. In San Francisco, where there was agreement about the low quality and scarcity of cocaine powder, users displayed and described severe vein loss and trauma they experienced as the result of injecting BTH. In Philadelphia, PH injectors who reported avoiding the temptations of nearby cocaine sales suffered less vein loss or scarring. Users at both sites commonly reported abscesses, although in Philadelphia interviewees blamed cocaine powder/speedballs for the problem while in San Francisco they speculated on multiple causes, including the physical characteristics of BTH. The reasons for the severe vein loss perceived by both the interviewees and the ethnographers as associated with BTH rather than PH needs further exploration; one commentary suggests drug acidity levels are a proximal etiology (Ciccarone and Harris 2015).

In both cities some users described how they reluctantly resorted to ‘muscling’ or ‘skin popping’ heroin when unable to find an accessible vein while others sought the help of fellow injectors, either as part of a ‘moral economy’ of exchange or traded for material goods (drugs or money) and/or sexual services. Vein loss had also prompted some to transition to major veins in the neck and groin, more commonly in Philadelphia with concurrent cocaine injecting. Among the San Francisco group, the neck was a more taboo injecting location. There was no suggestion in the users’ accounts that these norms were shaped by the contrasting source-types and they may instead reflect local harm reduction interventions, varying cultural norms or the availability of other injectable drugs. The persistence of cocaine powder in Philadelphia, which users considered unsuitable for intramuscular and subcutaneous injection, may have encouraged a more extreme culture of intravenous injection.

Heroin injectors in both cities defined the ‘best’ heroin as the most potent: heroin that produced extreme intoxication and gave the longest duration of relief from withdrawal symptoms. With drugs such as alcohol, tobacco and marijuana, a culture of taste or connoisseurship has grown up in which smell, appearance, taste, plant variety and country of origin are often important parts of the experience of consumption. However, in this study smell and appearance were generally only noted in terms of what they indicated about potency.

With the choice of heroin limited by duopoly, there is little opportunity for consumer comparisons between heroin types. However, when these geographical barriers were breached, either by users traveling or different types of heroin ‘guesting’ in their home market, potency remained the chief criterion of high quality across both interview groups. A financial explanation for the primacy of potency among these impoverished injectors may be persuasive in Philadelphia, where the drug is sold for the same price but competes with respect to potency: users get better ‘value for money’ by buying the most potent brand

available and given their very limited resources for alleviating withdrawal symptoms, this trumps other considerations. However, in San Francisco, interviewees reported a wide price range determined by anticipated and perceived potency and some users were able and willing to pay more for the higher priced products.

While at first the quest for potency would appear to be constitute an *absence* of connoisseurship, disregarding any subtler differences between source-types, on closer study it can be understood to be an appreciation of heroin based upon the regular gathering of knowledge and the exercise of discernment or a “connoisseurship of potency”. It differs in form from the upper class wine connoisseurship, which overtly disfavors intoxication, sometimes to the exclusion of actual consumption (spitting wine out at tastings, for instance). The connoisseurship among these heroin injectors takes the narrower form of a search for potency because it is shaped by the necessity of dependence, the mode of drug administration (injecting removes the oral taste experience), lack of resources of these users who consume the drug soon after purchase, their often precarious living situations, stigmatized status and the constraints of the US heroin market in which accurate information on sources and methods of cultivation and production are hidden.

On the West Coast, heroin types are diversifying with the appearance of reportedly higher potency source-types after many years of typically low purity and the addition of fentanyl to the supply. The drivers of this change are as yet unclear but are most likely structural (DEA 2015). As new forms of the drug appear to be proliferating, it will be interesting to observe what might be the implications for patterns of consumption and health.

References

- Akhgari, Maryam; Jokar, Farzaneh; Bahmanabadi, Leila; Aleagha, Afshar Etemadi. Street-level heroin seizures in Iran: a survey of components. *Journal of Substance Use*. 2012; 17(4):348–355.
- Bancroft, Angus; Reid, Peter Scott. Concepts of illicit drug quality among darknet market users: Purity, embodied experience, craft and chemical knowledge. *International Journal of Drug Policy*. 2015 doi: <http://dx.doi.org/10.1016/j.drugpo.2015.11.008>.
- Bardenheier B, Prevots DR, Khetsuriani N, Wharton M. Tetanus surveillance--United States, 1995–1997. *MMWR CDC Surveill Summ*. 1998; 47(2):1–13. [PubMed: 9665156]
- Binswanger IA, Kral AH, Bluthenthal RN, Rybold DJ, Edlin BR. High prevalence of abscesses and cellulitis among community-recruited injection drug users in San Francisco. *Clin Infect Dis*. 2000; 30(3):579–581. [PubMed: 10722447]
- Bourgois P. The Moral Economies of Homeless Herion Addicts: Confronting Ethnography, HIV Risk, and Everyday Violence in San Francisco Shooting Encampments. *Subst Use Misuse*. 1998; 33(11): 2323–2351. [PubMed: 9758016]
- Bourgois P, Prince B, Moss A. The Everyday Violence of Hepatitis C Among Young Women Who Inject Drugs in San Francisco. *Hum Organ*. 2004; 63(3):253–264. [PubMed: 16685288]
- Bourgois, P.; Schonberg, J. *Righteous Dopefiend*. Berkeley and Los Angeles, CA: University of California Press; 2009.
- Ciccarone D. The political economy of heroin: Regional markets, practices and consequences. *International Journal of Drug Policy*. 2005; 16(5):289–290.
- Ciccarone D. Heroin in brown, black and white: structural factors and medical consequences in the US heroin market. *International Journal of Drug Policy*. 2009; 20(3):277–282. [PubMed: 18945606]
- Ciccarone D, Bamberger J, Kral A, Hobart CJ, Moon A, Edlin BR, Harris HW, Young DM, Bourgois P, Murphy EL. Soft tissue infections among injection drug users - San Francisco, California, 1996–

2000. *Journal of the American Medical Association*. 2001; 285(21):2707–2709. [PubMed: 11419421]
- Ciccarone D, Bourgois P. Explaining the geographical variation of HIV among injection drug users in the United States. *Subst Use Misuse*. 2003; 38(14):2049–2063. [PubMed: 14677781]
- Ciccarone D, Unick GJ, Cohen J, Mars S, Rosenblum D. Nationwide Increase in Hospitalizations for Heroin-related Soft Tissue Infections: Associations with Structural Market Conditions. *Drug Alcohol Depend*. 2016
- Ciccarone, Daniel; Harris, Magdalena. Fire in the vein: Heroin acidity and its proximal effect on users' health. *International Journal of Drug Policy*. 2015; 26(11):1103–1110. doi: <http://dx.doi.org/10.1016/j.drugpo.2015.04.009>. [PubMed: 26077143]
- DEA, (Drug Enforcement Administration). National Heroin Threat Assessment Summary. DEA Intelligence Report. 2015
- Drug Enforcement Administration, US. National Forensic Laboratory Information System Special Report: Opiates and Related Drugs Reported in NFLIS, 2009–2014. Springfield, VA: US Drug Enforcement Administration, Office of Diversion Control; 2015.
- Epele ME. Scars, Harm and Pain: About being injected among drug using Latina Women. *Journal of Ethnicity in Substance Abuse*. 2002; 1(1):47–69.
- Harris HW, Young DM. Care of injection drug users with soft tissue infections in San Francisco, California. *Arch Surg*. 2002; 137(11):1217–1222. [PubMed: 12413304]
- Hempstead K, Yildirim EO. Supply-side response to declining heroin purity: fentanyl overdose episode in New Jersey. *Health Econ*. 2014; 23(6):688–705. [PubMed: 23740651]
- Kimura AC, Higa JI, Levin RM, Simpson G, Vargas Y, Vugia DJ. Outbreak of necrotizing fasciitis due to *Clostridium sordellii* among black-tar heroin users. *Clin Infect Dis*. 2004; 38(9):e87–e91. [PubMed: 15127359]
- Mackun, P.; Wilson, S. Population Distribution and Change: 2000 to 2010, US Census Briefs. US Census Bureau; 2011.
- Maher, Wendy; Michael, Swift; Lisa, Dawson. Heroin purity and composition in Sydney, Australia. *Drug and Alcohol Review*. 2001; 20(4):439–448.
- Mars SG, Fessel JN, Bourgois P, Montero F, Karandinos G, Ciccarone D. Heroin-related overdose: The unexplored influences of markets, marketing and source-types in the United States. *Social Science & Medicine*. 2015a; 140:44–53. doi: <http://dx.doi.org/10.1016/j.socscimed.2015.06.032>. [PubMed: 26202771]
- Mars S, Bourgois P, Karandinos G, Montero F, Ciccarone D. Every 'Never' I Ever Said Came True: Pathways from pills to heroin injecting. *International Journal of Drug Policy*. 2014; 25(2):257–266. [PubMed: 24238956]
- Mars S, Fessel JN, Bourgois P, Karandinos G, Montero F, Ciccarone D. Heroin-related overdose: The unexplored influences of markets, marketing and source-types in the United States. *Social Science & Medicine*. 2015b; 140:44–53. doi: <http://dx.doi.org/10.1016/j.socscimed.2015.06.032>. [PubMed: 26202771]
- Mauss, M. *The Gift: The Form and Reason for Exchange in Archaic Societies*. Halls, W., translator. London: Routledge; 1924. Original edition, 1924. Reprint, 1990
- Murphy EL, DeVita D, Liu H, Vittinghoff E, Leung P, Ciccarone DH, Edlin BR. Risk factors for skin and soft-tissue abscesses among injection drug users: a case-control study. *Clin Infect Dis*. 2001; 33(1):35–40. [PubMed: 11389492]
- ONDCP, Office of National Drug Control Policy. *Drug Availability Estimates in the United States, 2001–2006*. Washington, DC: 2012.
- Passaro DJ, Werner SB, McGee J, Mac Kenzie WR, Vugia DJ. Wound botulism associated with black tar heroin among injecting drug users. *JAMA*. 1998; 279(11):859–863. [PubMed: 9516001]
- NVivo 10 qualitative data analysis software. Doncaster, Australia: QSR International Ltd;
- Rhodes T. Risk environments and drug harms: a social science for harm reduction approach. *International Journal of Drug Policy*. 2009; 20(3):193–201. [PubMed: 19147339]
- Rich JD, Dickinson BP, Carney JM, Fisher A, Heimer R. Detection of HIV-1 nucleic acid and HIV-1 antibodies in needles and syringes used for non-intravenous injection. *AIDS*. 1998; 12(17):2345–2350. [PubMed: 9863878]

- Rosenblum D, Montero F, Bourgois P, Mars S, Karandinos G, Unick G, Ciccarone D. Urban segregation and the US heroin market: A quantitative model of anthropological hypotheses from an inner-city drug market. *International Journal of Drug Policy*. 2013 (Special Issue: Place Matters: Drug Users' Health and Drug Policy):S0955-3959.
- Rosenblum D, Unick G, Ciccarone D. The entry of Colombian-sourced heroin into the US market: The relationship between competition, price, and purity. *International Journal of Drug Policy*. 2014; 25(1):88–95. [PubMed: 24211155]
- Strang J, Griffiths P, Gossop M. Heroin in the United Kingdom: different forms, different origins, and the relationship to different routes of administration. *Drug Alcohol Rev*. 1997; 16(4):329–337. [PubMed: 16203446]
- Strauss, AL.; Corbin, JM. *Basics of qualitative research: grounded theory procedures and techniques*. Newbury Park, CA: Sage Publications; 1990.
- Unick, George; Rosenblum, Daniel; Mars, Sarah; Ciccarone, Daniel. The relationship between US heroin market dynamics and heroin-related overdose, 1992–2008. *Addiction*. 2014; 109(11):1889–1898. doi: 10.1111/add.12664. [PubMed: 24938727]
- Werner SB, Passaro D, McGee J, Schechter R, Vugia DJ. Wound botulism in California, 1951–1998: recent epidemic in heroin injectors. *Clin Infect Dis*. 2000; 31(4):1018–1024. [PubMed: 11049786]
- Williamson N, Archibald C, Van Vliet JS. Unexplained deaths among injection drug users: a case of probable *Clostridium myonecrosis*. *CMAJ*. 2001; 165(5):609–611. [PubMed: 11563214]



Figure 1.
Black tar heroin

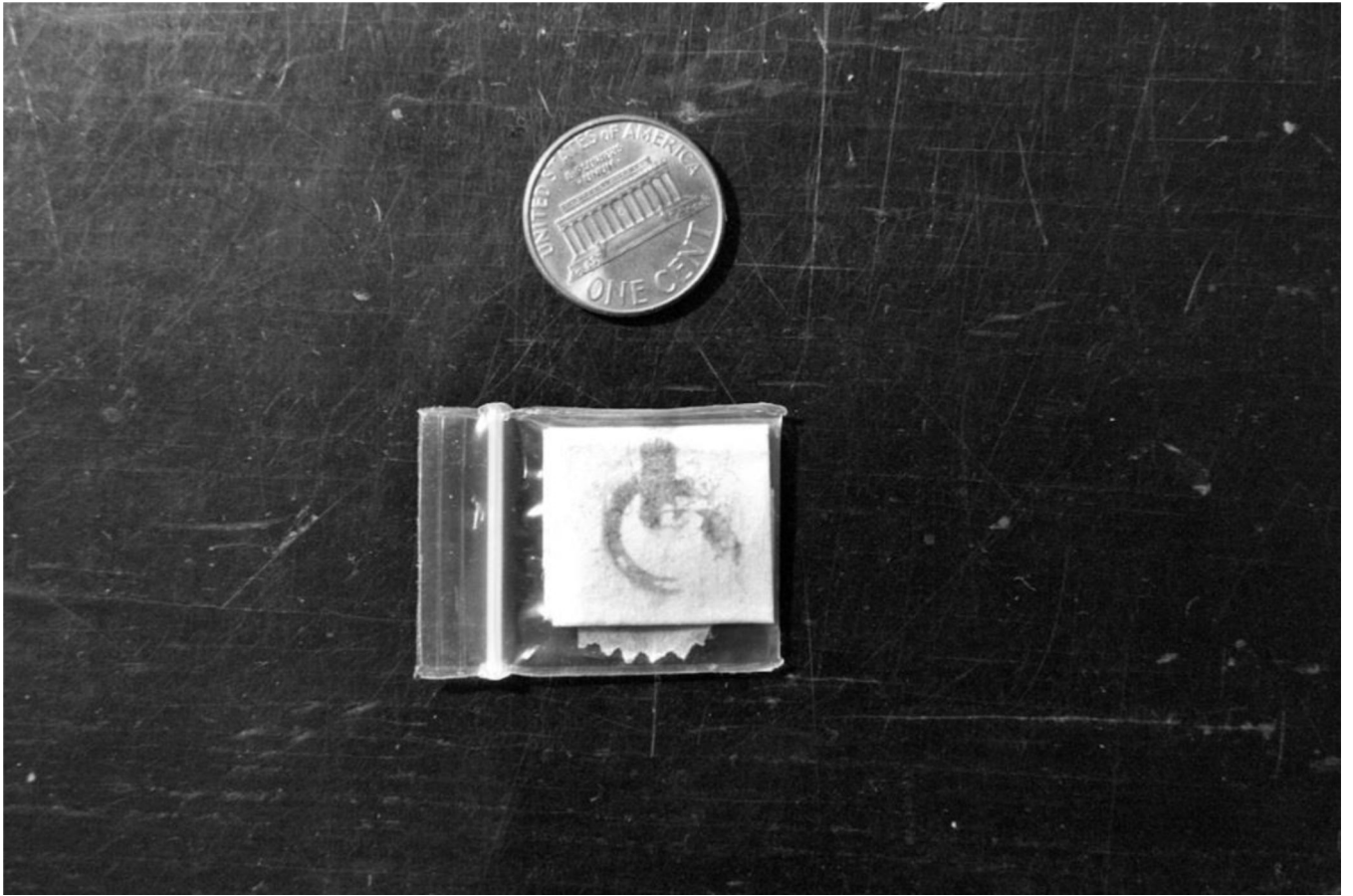


Figure 2.
A bag of 'Handicap' brand heroin with the handicap symbol stamp.



Figure 3.
Limbs of San Francisco long-term injectors of black tar heroin with scarred injecting sites.



Figure 4.
Limbs of San Francisco long-term injectors of black tar heroin with scarred injecting sites.