IN THE UNITED STATES DISTRICT COURT
FOR THE NORTHERN DISTRICT OF ILLINOIS
EASTERN DIVISION

SHAWN GOWDER	)	
	)	
	)	
Plaintiff,	)	
v.	)	
	)	
	)	**CASE NO. 11-CV-1304**
CITY OF CHICAGO, a municipal corporation, the CITY OF CHICAGO DEPARTMENT OF ADMINISTRATIVE HEARINGS, MUNICIPAL HEARINGS DIVISION, SCOTT V. BRUNER, Director of the City of Chicago Department of Administrative Hearings, the CITY OF CHICAGO DEPARTMENT OF POLICE, and JODY P. WEIS, Superintendent of the City of Chicago Department of Police	)	
	)	
	)	
Defendants.	)	

INDEX OF EXHIBITS TO DEFENDANTS'
LOCAL RULE 56.1(b)(3)(C) STATEMENT OF ADDITIONAL FACTS

Exhibit	**Description**
1.	Responsible Gun Ownership Ordinance
2.	Uniform Crime Reporting Statistics – 10 Cities
3.	June 29, 2010 Ludwig Written Testimony to Chicago City Council Committee
4.	*The Benefits of Reducing Gun Violence: Evidence from Contingent-Valuation Survey Data*, J. Ludwig and P. J. Cook, 22 Journal of Risk and Uncertainty 207 (2001)
5.	June 29, 2010 Webster Testimony to Chicago City Council Committee
6.	Garen J. Wintemute, *et al.*, *Prior Misdemeanor Convictions as a Risk Factor for Later Violent and Firearm-Related Criminal Activity Among Authorized Purchasers of*

Handguns, 280 J. Am. Med. Ass'n. 2083, 2086 (Dec. 1998)

7. Mona A.Wright, et al., *Felonious or Violent Criminal Activity that Prohibits Gun Ownership Among Prior Purchasers of Handguns: Incidence and Risk Factors*, J. Trauma Injury, Infection, & Critical Care (2010)

8. *Is Gun Control Likely to Reduce Violent Killings*, Franklin Zimring, 35 University of Chicago Law Review 721 (1968)

9. *The Medium is the Message: Firearm Caliber as a Determinant of Death From Assault*, Franklin Zimring, 1 Journal of Legal Studies, 97 (1972)

10. *Underground Gun Markets*, P. Cook, et al., 117 Economic Journal (2007)

11. June 29, 2010 Written Testimony of Chicago Police Department Deputy Superintendent Ernest Brown for Chicago City Council

12. July 1, 2010 Legislative Findings of City Council Committee on Police and Fire

13. Notice of Deposition

14. October 18, 2011 Hearing Transcript

15. Plaintiff's Criminal History Data

EXHIBIT 9

THE MEDIUM IS THE MESSAGE: FIREARM CALIBER AS A DETERMINANT OF DEATH FROM ASSAULT

*FRANKLIN E. ZIMRING**

THIS is the second report of a research project on violent assault in Chicago. The first, a study of fatal and nonfatal assaults with knives and guns, produced evidence to support three conclusions:

(1) Most homicide is not the result of a single-minded intention to kill at any cost.

(2) Many nonfatal attacks with knives and guns are apparently indistinguishable in motive, intent and dangerousness from many fatal attacks. Indeed, the overlap between fatal and nonfatal assaults with knives and guns is much more impressive than any differences that were noted.

(3) Weapon dangerousness, independent of any other factors, has a substantial impact on the death rate from attack.[1]

This paper first reports on an attempt to carry the earlier research one step further by comparing low-caliber with high-caliber firearms attacks, and then suggests some ways in which the data developed in the two studies of

* Associate Professor of Law and Associate Director of the Center for Studies in Criminal Justice, University of Chicago. Jerald Kessler, now a third-year student at the University of Chicago Law School, performed with diligence and creativity as a research assistant on this project. Steven Harris, a second-year student at the Law School, conducted a helpful survey of the literature on intent in violent attack. The Chicago Police Department, in particular Mr. Michael Spiotto, provided access to the department files on reported fatal and nonfatal attacks that were used in this study.

[1] Franklin E. Zimring, Is Gun Control Likely To Reduce Violent Killings?, 35 U. Chi. L. Rev. 721-24, 730-37 (1968). A third report, Homicide in Chicago, 1965-70, grows out of the same research project, a study of violent attack in Chicago supported by the Center for Studies in Criminal Justice at the University of Chicago. Other data on the issue of weapon dangerousness are developed in George D. Newton and Franklin E. Zimring, Firearms and Violence in American Life (Staff Report (7) to the Nat'l Comm'n on the Causes and Prevention of Violence 1969). See, *e.g.*, *id.* at 44 and 177-79 (relationship between relative degree of gun use and extent to which guns are more lethal than knives), 46-47 (death rates from gun vs. nongun armed robbery), 69-74 (effect of increase in gun ownership and use on death from assault in Detroit), 76-77 (relationship between relative gun use in robbery and assault in major cities).

fatal and nonfatal attacks might interest criminologists and criminal law scholars.

I. The Study

A. *Plan and Basic Data*

The previous study found that the rate of killings per hundred police-reported attacks was five times as high with guns as with knives.[2] This and other data indicated that most killings are coincident with a state of mind ambiguous enough so that the dangerousness of the weapon used will have a significant influence on the chances that death will result.[3] A second conclusion, flowing from the first, was that a shift from knives to guns or from guns to knives would have a significant impact on the death rate from violent attack.

If large-caliber firearms have a greater destructive potential than small-caliber firearms, and there is every reason to believe they do, the comparison of the death rates from large-caliber and from small-caliber attacks provides one opportunity to confirm the earlier finding that weapon dangerousness had a significant impact on the death rate from assaults. If a difference in physical dangerousness does not result in a significant difference in the death rate from assault, this would be evidence that an actor's intentions rather than the mechanism he uses is the primary determinant of the death rate from violent assault. On the other hand, if, as is the case, attacks with different types of firearms have significantly different death rates, this lends important support to the theory that effective weapon controls can influence the homicide rate. Indeed, from a methodological standpoint, a firearm caliber comparison is not only an important support to the gun-versus-knife study alluded to earlier but an improvement on it because two kinds of gun attacks are easier to compare with respect to such data as the number of wounds and the location of wounds than knife and gun attacks.

The basic data for the caliber comparison come from an analysis of fatal and nonfatal firearm attacks reported to the Chicago Police between March 5 and July 22, 1970. In all, 1115 gun attacks resulting in 156 fatalities were reported to the police. In general profile, these firearm attacks present a picture of deadly attack in Chicago similar to that developed in the earlier study. Again, spontaneous fights and domestic and romantic altercations formed the principal backdrop to deadly attacks,[4] and again nonfatal and fatal attacks were more notable for similarities in pattern than for any differences.

[2] Franklin E. Zimring, *supra* note 1, at 728.

[3] *Id.* at 722-24, 737.

[4] *Id.* at 721-25, especially tables 1-4.

Table 1 compares fatal and nonfatal gun attacks with respect to the race and sex of victim, and race and sex of offender.

TABLE 1
PERCENTAGE DISTRIBUTION OF HOMICIDE AND ASSAULT VICTIMS, OFFENDERS AND CHICAGO POPULATION

		Victims		Offenders		Chicago population (1970 census)
		Fatal	*Nonfatal*	*Fatal*	*Nonfatal*	
White						
	Male	17	11	7	8	32
	Female	2	1	2	1	35
Black						
	Male	61	71	79	77	15
	Female	13	13	7	9	18
Hispanic						
	Male	5	4	6	6	2
	Female	3	1	0	0	2
		100% (156)	100% (932)	100% (135)	100% (815)	100% (3,366,957)

[1] Less than .5%.
[2] Not available—included in "white."
Source: Compiled from Chicago Police Dep't Offense Reports.

The distribution by race and sex of victims of fatal gun assaults is quite similar to the distribution of victims of nonfatal gun assaults, and very different from the distribution of the population. The implication is that these two classes of attack are part of a single larger class. This also seems to be a plausible inference from the race and sex data on offenders in Table 1, where again wounders and killers are similar to each other and different from the general population.

Table 2 compares the incidents leading up to the attack for fatal versus nonfatal attacks, in all categories except robbery, which will be separately considered.

Table 2, like the data on the distribution of attacks by race and sex, supports the theory that there is a great deal of continuity between fatal and nonfatal gun attacks because, generally, the same type of circumstances lead to woundings and death. In this comparison, however, there are differences as well as similarities. Domestic and romantic arguments account for a quarter of all killings but only one out of every ten nonfatal attacks, while "teen gang" offenders account for 17 per cent of all nonfatal attacks but only 11 per cent of fatalities. These differences may seem to suggest that domestic attacks are more deadly than others. But it would be incorrect to draw such an inference. Domestic fights that kill must come to the attention of the police. Nonfatal

TABLE 2
GUN ATTACKS BY CIRCUMSTANCES

	% Fatal attacks	% Nonfatal attacks
Domestic/Romantic arguments	25%	11%
Other fights	35%	26%
Teen-gang offenders	11%	17%
Felony relation (other than robbery)	1%	5%
Other and unknown	28%	41%
	100%	100%
	(113)	(809)

Source: Compiled from Chicago Police Dep't Offense Reports.

attacks, particularly if the injury is not very severe, may not be reported to the police; and such attacks, when they occur within the family, are more apt to go unreported than other such attacks because of the close relationship between the victim and offender.[5]

Table 3 sets out the distribution of gun attacks by circumstances leading to the attack for the different gun caliber categories that will be the basis for comparison in this study.

TABLE 3
GUN ATTACKS BY CALIBER BY CIRCUMSTANCES

	.22	.25 and .32	.38
Domestic/Romantic altercations	23%	23%	27%
Other fights	39%	37%	34%
Teen-gang offender	15%	8%	14%
Felony relation (other than robbery)	2%	5%	5%
Other	21%	27%	20%
	100%	100%	100%
	(155)	(126)	(109)

Source: Compiled from Chicago Police Dep't Offense Reports.

The data reported in Table 3 point clearly to the conclusion that the circumstances leading to attacks with different caliber guns are remarkably similar.

[5] One recent study found that only 22% of assaults where the offender was a relative of the victim were reported, compared to 72% of all other assaults. While a much higher percentage of gun assaults would tend to be reported, the "family" effect might still be great. See Anthony Turner, The San Jose Methods Test of Known Crime Victims (unpublished from U.S. Law Enforcement Assistance Admin. Statistics Div. 1971).

Other findings from this sample, consistent with the 1968 study,[6] include the relatively small number of gun killings that involve more than one wound (38 per cent in this sample) and the similarity in the number and location of wounds between many nonfatal gun attacks and most gun homicides.

B. *Weapon-Caliber Effects*

In order to obtain data on weapon-caliber effects, two minor problems and one major problem in the data had to be overcome. A minor problem was that certain types of weapons, most notably shotguns, cannot be easily compared with other types of firearm. Our solution to this problem was to exclude shotgun attacks (12 per cent of all attacks) and large-caliber rifle attacks (less than one per cent of attacks). A second problem was that information was not available, for the entire period covered by the rest of the study, on robberies that result in nonfatal rather than fatal wounds. To deal with this problem, data on fatal robberies (19 per cent of all fatalities) were excluded from the main study and separately analyzed.[7]

These exclusions left us with a sample of 932 cases, the great majority of them attacks made with handguns.[8] Table 4 reveals the major problem associated with drawing inferences in this group of cases about the effects of weapon

[6] See Franklin E. Zimring, *supra* note 1, at 731 (table 7), 734.

[7] The problem with robbery-assault statistics is that, typically, if a victim lives, the incident is reported as a robbery and stored in a different record section of the police department. Data were available, however, on fatal robberies during the four police periods, and the distribution by caliber is somewhat different from that noted in other offenses.

	Robbery killings (%)	Nonrobbery killings (%)
.22	11	24
.25 & .32	26	26
.38 and > .38	62	51
	100%(27)	100%(109)

At the same time, a greater number of robbery killings involved multiple wounds, as shown below.

	Robbery killings	All other killings
Single wound	48	62
Multiple wound	52	38
	100%(27)	100%(109)

These data may suggest more deadly intention in robbery or a greater necessity for force growing out of victim resistance in robbery. The answer to whether a profound caliber effect exists awaits data on nonfatal robbery shootings.

[8] All .22-caliber attacks were included even if there was a police notation that a rifle was involved.

TABLE 4

	Fatal attacks	Nonfatal attacks
Caliber known	94%	37%
Caliber not known	6%	63%
	100%	100%
	(116)	(797)

Source: Chicago Police Dep't Offense Reports.

caliber on death rates: the substantial number of cases in which weapon caliber is not known. The reason why caliber is known in far fewer aggravated assaults than homicides is doubtless that less police effort is devoted to nonfatal attacks; just as among nonfatal attacks, the more serious the wound the more likely that caliber is known.[9]

An analysis of particular types of firearm attacks, however, provides evidence that the sample of attacks for which caliber is known is an acceptably representative sample of all firearm attacks by caliber. Attacks that result from domestic altercations will involve both a victim and offender apt to be familiar with household firearms, as well as a readily available suspect, and thus promise a much higher percentage of cases in which firearm caliber is known. Thus, firearm caliber was determined in 92 per cent of the 65 domestic altercation cases compared to 40 per cent of all other types of cases. Table 5 compares the distribution of attacks by caliber when caliber is known for

TABLE 5

	Small caliber		Large caliber		
Domestic attacks	.22	.25	.32	.38	> .38
(92% Caliber known)	33%	16%	19%	29%	3%
Other attacks					
(40% Caliber known)	.22	.25	.32	.38	> .38
	38%	12%	15%	29%	5%

Source: Compiled from Chicago Police Dep't Offense Reports.

domestic altercations and all other altercations. In spite of the great differences in the percentage of attacks in which caliber is known, the percentage distribution by caliber is remarkably similar.[10]

[9] Comparing the percentage of nonfatal attacks in the sample where caliber is known for single-shot attacks to various parts of the body, we come up with these results:

Head and chest	44%
Abdomen, back and neck	38%
Shoulder, arm and leg	31%

[10] The death rate difference by caliber is just as pronounced in domestic disputes; see Table 8, *infra*.

With that preliminary question discussed, it is possible to proceed to an analysis of death rates from firearm attacks by caliber. The simplest way of making this comparison is to compare the death rate per 100 police-reported firearms attacks for each of the four major firearm calibers. But the simple method of comparison overstates the independent effects of weapon caliber, because a greater number of large-caliber handgun attacks result in multiple wounds than do small-caliber guns. Table 6 takes a slightly more complicated route by presenting, for all attacks in which firearm caliber was identified, the percentage of single-wound attacks to each of three regions of the body that result in death, and a similar comparison for attacks that involve multiple wounds.

TABLE 6
PERCENTAGE OF KNOWN CALIBER ATTACKS THAT RESULT IN DEATH

	Single wound				
	.22	.25	.32	.38	> .38
Head and chest	36% (34)	70% (10)	67% (12)	76% (29)	83% (6)
Abdomen, back, neck	35% (26)	29% (7)	10% (10)	38% (13)	—
Shoulder, arm, leg	0% (55)	5% (22)	0% (17)	0% (27)	0% (4)
	Multiple wound				
	.22	.25	.32	.38	> .38
Head and chest	36% (14)	33% (6)	46% (13)	77% (26)	100% (2)
Abdomen, back, neck	0% (5)	50% (2)	33% (6)	33% (6)	—
Shoulder, arm, leg	0% (2)	0% (1)	—	0% (7)	—

Source: Compiled from Chicago Police Dep't Offense Reports.

Table 6 overstates the probability that a wound with a particular caliber firearm to a particular area will result in fatality, because nonfatal attacks for which the caliber is unknown have been excluded and inclusion of these attacks would reduce the fatality percentage considerably across the board. However, by adding information about the number and location of wounds in attacks in which the police did not identify weapon caliber, the data presented in Table 6 can be converted into an estimate of the different death rates expectable per 100 police-reported attacks made with various types of gun to different areas of the body. Table 7 attempts this estimate by distributing unknown-caliber nonfatal attacks by caliber in the pattern found in nonfatal

assaults where caliber was known. The seven fatal assaults with unknown caliber were ignored.[11]

TABLE 7
ESTIMATED DEATH RATE FROM GUN ATTACKS BY WOUND LOCATION, NUMBER OF WOUNDS, AND GUN CALIBER

	Single wound				
	.22	.25	.32	.38	>.38
Head and chest	16% (69)	50% (14)	44% (18)	55% (40)	63% (8)
Abdomen, back, neck	17% (52)	13% (15)	4% (24)	20% (25)	25% (4)
Shoulder, arm, leg	0% (170)	2% (71)	0% (52)	0% (83)	0% (11)
Total	7% (291)	10% (100)	10% (94)	18% (148)	27% (23)
	Multiple wound				
	.22	.25	.32	.38	>.38
Head and chest	28% (19)	25% (4)	35% (17)	68% (25)	100% (2)
Abdomen, back, neck	0% (11)	33% (3)	18% (11)	18% (11)	—
Shoulder, arm, leg	0% (6)	0% (3)	—	0% (22)	—
Total	14% (36)	20% (10)	29% (28)	40% (58)	100% (2)

Source: Compiled from Chicago Police Dep't Offense Reports.

Table 7 reveals three discrete influences on the fatality rate from firearm attacks. The first is the location of the most serious wound inflicted by a

[11] There are three ways in which the estimate could have been made. All three involve using information available about the number and location of wounds and estimating the distribution of attacks by caliber. One method would assume the distribution of all known attacks to be the pattern to be found in all unknown attacks. This assumes no bias by caliber in the sample of known-caliber attacks. A second method would assume that the pattern of domestic assaults by caliber was the same as all other assaults and would allocate all unknown-caliber attacks in each wound location by caliber so that the total percentage for each caliber was the same as that caliber's share of domestic disputes. This method was rejected because of the likelihood that it would understate the number of .22-caliber attacks. Only 11% of all domestic killings were .22 killings, suggesting that the percentage of .22 assaults was higher in nondomestic attacks than in domestic attacks. The third method would distribute the unknown-caliber attacks to reflect the distribution of nonfatal attacks by caliber when caliber is known. Thus, if .22-caliber attacks are 30% of total attacks and 35% of nonfatal attacks, the first method would assume that 30% of all unknown-caliber attacks were .22, while the third method would assume that 35% were .22 attacks. Since caliber is an influence on whether or not death results, and since whether death results is an influence on whether caliber is determined, the third method seems superior to the second.

particular attack. A simple rule of thumb would be that, independent of caliber and number of wounds, attacks that result in wounds to the head and chest are three times as deadly as gun attacks that result in wounds only to the abdomen, neck, or back. Attacks in which the most serious wound is to the shoulder, arm, or leg are rarely fatal.

A second relationship that emerges from considering Table 7 is that the number of wounds inflicted in a firearm attack has predictive value as to the death rate. The death rate for multiple-wound attacks where the most serious wound was to the head or chest is higher than the rate for single wounds to the head or chest, and clearly is much higher than if the offender had stopped after his first wound, which may have hit a less dangerous area. With respect to both the location of the wound and the number of wounds inflicted, it is difficult to judge how many of the effects noted are independent of the intention of the attacker and how many reflect a tendency of individuals with more homicidal intentions to wound more often and shoot to more vital areas of the body.

The third major predictive relationship that can be noted is that of weapon caliber. The two most widely used weapon calibers, .22 and .38, present the most meaningful contrast. Examination of Table 7 shows a much greater fatality rate from .38 caliber attacks resulting in more than one wound and from single-wound .38 caliber attacks to the head and chest region. Because these areas account for most fatalities, the overall result is that .38 caliber attacks are more than twice as deadly as .22 caliber attacks. Among the less commonly used weapons, .25 and .32 caliber firearms are more likely to kill than .22's by a considerable margin and less likely to kill than .38 caliber attacks. No significant differences between the two intermediate calibers emerge from the present data. The few attacks made with weapons greater than .38 caliber exhibit the highest of all fatality rates, but the number of attacks with such weapons is too small to justify a conclusion that such weapons are significantly more dangerous than the .38.

Because some of the estimates are based on a small number of known attacks—notably those dealing with intermediate-caliber and larger-than-.38 caliber weapons, and with most multiple-wound attacks—Table 7 is merely a first approximation of the relative deadliness of attacks by caliber, wound location and number of wounds. But with respect to .22 and .38 caliber attacks, particularly single-wound attacks, the numbers are large and the contrast is striking.

There is a further way of estimating the magnitude of weapon caliber effects on deadly attacks: projecting the impact of caliber effects on Chicago's homicide experience. Using the data developed in Table 7, we can approximate the total potential impact of caliber effects on the death rate from gun attacks.

FIGURE 1
CALIBER EFFECTS ON FATALITIES FROM GUN ASSAULT

Number of fatalities if all attacks were with .38	177 (+62%)	+62%
Actual number of fatalities from gun attacks	109	
Number of fatalities if all attacks were with .22	57 (−48%)	−48%

C. *Alternatives to the Instrumentality Interpretation*

One alternative to concluding that there is a substantial instrumentality effect tied to weapon caliber is the possibility that caliber differences either mask or express differences in intention sufficient to explain a two-to-one difference in death rate. At the outset, it is difficult to understand how much range in intention is possible when we are comparing single-shot wounds to the head or chest with one type of firearm as against single-shot wounds to the head or chest with another type of firearm. But to the extent that such comparison allows for differences in intention, some data are available to suggest that the differences are not great. For one thing, the number of individuals who can choose between small- and large-caliber weapons at the time of an attack, thereby expressing differential intent by opting for a high- or low-caliber weapon, is small.[12] The number of handgun owners who own more than one such weapon is estimated at slightly fewer than one out of five, and there is no firm evidence available on whether persons apt to be involved in deadly attacks are multiple handgun owners more often than the average.[13]

It can be argued, however, that there is a differential expression of personality involved in choosing large- versus small-caliber handguns that reaches back to the time of purchase when caliber decision is made and therefore is not affected by the fact that most handgun owners own only one. According to this view, there are ".38-caliber people" and they are somewhat more deadly than ".22-caliber people," independent of the difference in the dangerousness of their weapons. The difference in the number of multiple-wound attacks between .22-caliber weapons and the higher-caliber weapons leaves

[12] This assumes, of course, that most gun attacks are not sufficiently premeditated so that persons can run out and purchase weapons with suitable calibers for their particular purposes. See pp. 98-100, *supra*, and Franklin E. Zimring, *supra* note 1.

[13] Of those individuals who report handgun ownership, 83% report owning one such gun. See George P. Newton and Franklin E. Zimring, *supra* note 1, at 176. A study of prison inmates in Texas and Louisiana reports high lifetime handgun ownership. Study by C. M. Friel, Sam Houston State College (unpublished, 1970). The study, however, does not indicate whether multiple ownership is common or turnover high. Nor do the data distinguish between inmates who have committed crimes of violence and other inmates.

some room for this kind of argument, but not much; and the larger number of .22 single-shot attacks is explainable, in part, by the fact that some .22-caliber rifles have only a one-shot capacity, and .22-caliber rifles may form a significant sprinkling in the attacks noted.[14] Yet the differences in proportion of multiple-wound attacks by caliber do suggest some difference in intent correlated with caliber. In sum, there is no basis for rejecting out of hand the notion that differential intention or personality may play some role in gross intercaliber differences in death rate—but there is also no reason to suppose that personality effects can create a two-to-one difference in death rate after controlling for the number and location of wounds.

One method of further assessing the relative importance of caliber selection would be to see whether the intercaliber death rate differences hold up in domestic disputes, which are particularly interesting because they involve the most substantial probability that the actor is using a gun for a different purpose from that which motivated gun purchase. Yet Table 8 shows the same order of death rate difference by caliber for domestic attacks that Table 7 showed for all attacks.

TABLE 8
DEATH RATES BY CALIBER, NUMBER OF WOUNDS AND LOCATION IN DOMESTIC ATTACKS

	Single wound			
	.22	.25 & .32	.38	> .38
Head and chest	0%	100%	67%	50%
Abdomen, back and neck	0%	0%	50%	—
Total vital areas	0%(8)	33%(6)	57%(7)	(2)
	Multiple wound			
	.22	.25 & .32	.38	> .38
Head and chest	40%	60%	75%	—
Abdomen, back and neck	0%	0%	100%	—
Total vital areas	29%(7)	50%(6)	78%(9)	

Source: Compiled from Chicago Police Dep't Offense Reports.

Another interesting comparison is obtained by analyzing separately the outcome of shooting episodes involving female offenders, on the ground that the female offender is least likely to have selected her own weapon and most likely to have acquired someone else's weapon under circumstances that leave little room for suggesting that she chose a particular caliber in line with either a personality trait or short-range intention. Table 9 presents data on attacks by females, and tells the same story as its predecessors.

[14] See note 8 *supra*.

TABLE 9
DEATH RATES FROM ATTACKS TO VITAL AREAS BY FEMALE ASSAILANTS

	Single wound			
	.22	.25 & .32	.38	> .38
Head and chest	0%	50%	50%	50%
Abdomen, back and neck	0%	25%	100%	—
Total vital areas	0%(9)	33%(6)	67%(3)	50%(2)
	Multiple wound			
	.22	.25 & .32	.38	> .38
Head and chest	33%	50%	67%	—
Abdomen, back and neck	0%	100%	—	—
Total vital areas	20%(5)	67%(3)	67%(3)	

Source: Compiled from Chicago Police Dep't Offense Reports.

These small sample checks are consistent with the argument presented above: there are intriguing differences at the margin between high-caliber and low-caliber handgun attacks. But the major differences in death rates appear to be instrumentality effects.

II. SOME IMPLICATIONS OF THE WEAPONS STUDIES

The narrow purpose of the present study was to investigate further the question of weapon effects in violent assault. It confirms the earlier conclusion that the instrument used in an attack has a strong impact on chances of fatality. A corollary is that weapon controls, to the extent effective, could save many lives in Chicago. A broader aim of this series of studies was to seek meaningful knowledge about deadly assault in our major cities. And, with two detailed studies of attack in Chicago and a number of collateral inquiries completed,[15] the time seems ripe to discuss what, if anything, these data might teach us about understanding and preventing violent killings. In what follows, some observations are grouped under three rubrics:

A. The character of intent in violent assault.
B. The exportability of Chicago-based data to other areas.
C. The implications of the data for criminal law scholarship and reform.

A. *The Character of Intent in Violent Assault*

Professor Megargee, one of many scholars who have addressed the social implications of violent activity, emphasizes both the importance and the frustrations of focusing on the role of intent in deadly assault when he says:

The second issue confronting those who would define violence is the question of

[15] See George P. Newton and Franklin E. Zimring, *supra* note 1, at ch. 7.

intentionality. Intentionality by its very nature is something that cannot be observed. Our insights into human behavior have shown that there is no hard and fast line between what is intended and what is not intended.[16]

Lacking that hard and fast line, Megargee continues:

Typologies of violence offered by behavioral scientists have focused more on the motivation of the violent person than on the actual act.[17]

He goes on to suggest:

This focus recognizes that the difference between murder and aggravated assault often depends on whether a bullet chances to hit a muscle or an artery or on whether a physician is nearby to treat the victim.[18]

At this point I am moved to disagree, not with Megargee's good sense, but with his generous treatment of his colleagues. In fact, sociological students of homicide, perhaps gulled by their legal colleagues, have at times assumed that homicide is a separate, autonomous category of intentional human behavior. A classic example of this kind of assumption can be found in Wolfgang's *Patterns of Criminal Homicide*:

It is the contention of this observer that few homicides due to shootings could be avoided merely if a firearm were not immediately present, and that the offender would select some other weapon to achieve the same destructive goal. Probably only in those cases where a felon kills a police officer, or vice versa, would homicide be avoided in the absence of a firearm.[19]

Wolfgang's remarks should not be taken out of context. Elsewhere in his study there is a suggestion that something other than differences in intent might distinguish criminal killing from less destructive acts of violent attack. For example, he observes that the means used by Irish immigrants to attack, principally by brass knuckles and fists, may help to explain the low death rate from those attacks.[20]

Other studies of criminal homicide tend to be even easier in assuming a distinctive intentional component to homicidal impulse. David Abrahamsen devotes chapter 10 of his book, *The Psychology of Crime*, to "the personality of the murderer." His discussion, which is in terms of the offender's "wish to

[16] Edwin I. Megargee, A Critical Review of Theories of Violence, in Donald Mulvihill, Melvin Tumin, and Lynn Curtis, Crimes of Violence 1039 (Staff Report (13) to the Nat'l Comm'n on the Causes and Prevention of Violence 1969).

[17] *Id.* at 1043.

[18] *Ibid.*

[19] Marvin Wolfgang, Patterns of Criminal Homicide 83 (1958).

[20] *Id.* at 80.

kill" and "the force which compels a person to commit homicide,"[21] may be the consequence of implicitly assuming that homicidal force is an autonomous mechanism of human expression and homicidal result its usual product.

We also find in the sociological literature studies of the cultural and psychological backgrounds to violent behavior that serve as a counterweight to the implicit assumptions in homicide studies. Nine years after *Patterns in Criminal Homicide*, Wolfgang and Ferracuti speak in terms of the subculture of violence rather than the subculture of homicide.[22] Hans Toch, in his *Violent Men*,[23] seems implicitly to assume a great deal of continuity between fatal and nonfatal violent episodes, yet Toch never addresses the question whether homicide and less drastic forms of violence are either similar or different; rather, he discusses violence as a generic behavioral category.

This is not to say that those who are skeptical about the autonomy of homicide as a pattern of human behavior have lacked evidence for their skepticism. Pittman and Handy noted, in 1964, that a

> comparison of findings concerning acts of homicide and aggravated assault indicates that the pattern for the two crimes is quite similar. Both acts, of course, are reflections of population subgroupings which tend to externalize their aggression when confronted with conflict situations.[24]

Until recently, however, what Professor Megargee calls the "question of intentionality" has been far from the central focus of sociological concern in the study of violence. In general, it has been a question addressed parenthetically by the otherwise employed social scientist.

The knife-versus-gun and gun-caliber studies support three related propositions about the role of intent in violent assault. The first is that there is a good deal of overlap between the structure, intention and motivational background of most serious but nonfatal attacks and most homicides in Chicago. Given the prior findings on the demographic similarity, with respect to victims and offenders, of homicide and aggravated assault, this should come as no surprise. But the conclusion is, in a special way, inescapable in the present data: for example, whatever else may separate fatal from nonfatal firearm attacks, the element of chance must play an important role, because all attacks to the head and trunk can cause death (but less than a majority do) and more than 60 per cent of all lethal attacks are single-wound shootings. The overlap

[21] David Abrahamsen, The Psychology of Crime 185 (1960).

[22] Marvin Wolfgang and Franco Ferracuti, The Subculture of Violence (1967).

[23] Hans Toch, Violent Men (1969).

[24] David J. Pittman and William Handy, Patterns in Criminal Aggravated Assault, 55 J. Crim. L., Criminology & Police Science 462, 470 (1964).

I speak of is a physical reality, not simply the fact that the same sort of people engage in both behaviors. Nor is it merely the finding that some assailants and some killers appear to be acting in the same way. Rather, it is a strong suggestion that most people who attack with guns act in ways that are distinguishable only on the basis of result.

Discussion of the overlap between fatal and nonfatal attacks leads to the second major inference that can be drawn from the two studies under discussion: that most violent attacks with deadly weapons, whether fatal or nonfatal, are pursued with ambiguous intentions as to whether the victim should die. Most of the attacks we have studied that resulted in wounds to the head or trunk of a victim were inflicted under circumstances consistent with assuming that the offender considered death as one of the likely consequences of his actions. The same can almost certainly be said for a number of attacks that resulted in wounding to less vital body areas, although a precise estimate of the proportion of woundings to extremities that involved appreciation of the risk of death is unobtainable. Even if the risk of death was realized, it is still the case that this result was not diligently pursued in the majority of deadly attacks. In 62 per cent of all fatal firearm attacks, and 72 per cent of all nonfatal firearm attacks, the offender did not inflict more than one wound, in spite of his ordinary ability to do so. To some extent these statistics may be telling us that the initial intention, in both fatal and nonfatal gun assaults, is to achieve, by wounding, an objective other than death, but to achieve that objective whether or not death occurs.

There are suggestions in the prior literature that the ambiguously motivated deadly assault may play a role in homicide statistics. With respect to homicide by beating, Wolfgang says:

> Many of these . . . appear to have been the result of fighting with no intention on the part of the offender to kill.[25]

What is missing in the literature is a study of data bearing on intention with respect to both fatal and nonfatal attacks. Without such data it would be impossible, regardless of what intuitive power might have been brought to bear on the question, to make statements about most killings or most nonfatal woundings unless the circumstances of an attack pointed unambiguously to the fact that death was or was not intended with some energy.[26] If, as I have suggested, most attacks that kill—as well as most attacks that do not kill—are

[25] Marvin Wolfgang, *supra* note 19, at 86.

[26] But see David Abrahamsen, *supra* note 21, at 185:

> A murderer is so completely dominated by his inner forces that apparently no means is too foul for achieving his goal, as seen in the following case.

intended ambiguously, this is a difficult conclusion to reach without comparing fatal and nonfatal attacks in some detail. And that comparison is a relatively recent arrival in the sociological literature on violence.

One final possibility should be discussed. While there is evidence that the objective of a serious attack is ambiguous at the outset and remains so throughout its course, there is also some indication that the desired result of an attack may very well change during its enactment. The act of firing a gun alters the emotional context of the situation in a number of ways that can change the attacker's objectives:

—Firing a shot that finds its mark can be an emotional release, and this release can make an individual who might have sought or at least ignored the possibility of his victim's death more inclined to end his attack.

—Firing a shot and inflicting a wound also alter the immediate conflict situation that leads to an attack, and if the wound is serious or stunning, the threat of attack or counterattack by the victim may be abated.

—At the same time, inflicting a wound has transferred the consequences of assault from the realm of fantasy to that of palpable and unpleasant reality; if the reality of deadly attack does not square with its fantasy significance, or involves emotional costs greater than the attacker contemplated, the attack may be aborted, even if it was originally pursued with lethal intent.

B. *The Limits of Instrumentality Explanations*

The present study maintains an extremely narrow focus: attacks with one type of weapon (guns) in one city over a four month period. One natural issue early in the sequence of any discussion of these data is the extent to which the significant instrumentality effect found here can be expected to occur with other types of weapons and in other locations. Our tentative answer on this issue is the following hypothesis:

The significance of weapon dangerousness on the death rate will rise or fall with the proportion of ambiguously motivated attacks with deadly weapons.

This hypothesis comes, rather unmysteriously, from the interrelation discussed earlier between the large number of ambiguously motivated deadly attacks and the extensive instrumentality effects in such attacks. Because the hypothesis is phrased in terms of differential intentions, some more tangible form of prediction will be necessary before it can be tested through the use of comparative criminal statistics.

The hypothesis speaks only to the relative differences one might observe in different settings. It does not suggest that there is any city where increases or decreases in the use of guns will not affect the death rate from assault. But

the theory highlights two apparent ironies. The first is that as the rate of ambiguously motivated attacks with guns increases, the rate of gun deaths per 100,000 persons will increase but the death rate per 100 gun assaults, if anything, should decrease somewhat.[27] The second apparent irony is that gun controls are most needed in precisely those situations where guns have the greatest popularity in attacks—and thus where control will be hardest to achieve. This is not to say that the need for firearms control is meaningfully correlated with ownership and use of firearms alone. Rather, the combination of widespread gun ownership, particularly handgun ownership, *and* the propensity to use these weapons is the explosive compound.

C. *Criminal Law for a Subculture of Violence*

The task of relating data from these studies to issues in substantive criminal law is an open-ended one. At this point it is more appropriate to raise most of the following points as plausible interpretations than to peddle them as established truths.

1. *The Calculation of Dangerousness in Deadly Assault.* On some matters, however, the data appear to speak with more than equivocal authority. The first of these is that empirical studies such as that reported above give the rough outline of a new basis for judging the seriousness of criminal acts of violence—that basis is the objective dangerousness of particular types of behavior. The reader may ask, has not dangerousness always been an important element in the definition and grading of criminal offenses? The answer to this question is that, with respect to deadly attacks, the law has approached the issue of dangerousness indirectly and, as it turns out, incompletely.

Most penal codes now grade violent offenses with a view to a mixture of two factors: the actor's subjective intention and the actual result of an attack. In Illinois, for example, a person is guilty of murder if his intent can be characterized as either intent to kill or to do great bodily harm, or knowledge that his acts create a strong probability of death or great bodily harm, and the result is the death of his victim. If his victim lives, an individual is guilty of attempted murder if he intends to kill.[28] If he knows that such acts create a strong probability of death or great bodily harm but does not have a specific intent to kill, the individual is guilty only of aggravated battery if his victim lives.[29]

[27] In fact, comparisons among different American cities show little, if anything, in the way of a patterned difference. See George P. Newton and Franklin E. Zimring, *supra* note 1, at 177. The British death rate per 100 reported gun attacks is, however, a good deal higher than that experienced in most American jurisdictions. See Gt. Brit., Home Office, The Use of Firearms in England and Wales (unpublished, 1967).

[28] Ill. Rev. Stat., ch. 38, § 8-4 (1969).

[29] Aggravated battery requires "intentionally or knowingly" causing "great bodily

The important questions in differentiating among murder, attempted murder, and aggravated battery are thus:

(1) did the actor intend to kill?
(2) did death result?

The result of an attack is an incomplete gauge of dangerousness if any element of fortuity determines result, and this seems to be the case. Indeed, one reading of Table 7 in this study and parallel tables in the knife-gun study would characterize homicide in Chicago as a lethal lottery with many times as many players as ultimate losers. The attacker's intent is also an incomplete measure of dangerousness if factors other than intent determine result. This study has shown that another factor, the "instrumentality effect," is an important determinant of the result of an assault.

A third basic question can be asked and answered: In the generality of cases, how likely is it that conduct such as that engaged in by the offender will lead to death? This question is, in practice, answerable by the cautious use of data on violent attacks, although later on I will argue that the present sequence of studies casts some doubt on whether the same can be said for discriminations based on the difference between intention to kill and intention to inflict great bodily harm in most cases of attacks with deadly weapons.

The significance of "objective dangerousness" is subject to some qualifications. First, the present data are clearly deficient as complete measures of objective dangerousness. Data on the distance between attacker and victim are missing from the two studies under discussion. They are important because data on wound location appear too late in the scenario of violence for before-the-fact dangerousness to be clearly determined. We know only where the attacker hit, not where he aimed. Yet even these data, as displayed in Table 7, screen out much more fortuity than traditional tests of intent and result.

A second qualification in using before-the-fact calculations of dangerousness is that any rational penal system can make only a limited number of distinctions in the formal grading of violent attacks. Result and intent are still viable distinctions, though in varying degree. Forty-three degrees of violent assault are too many, even for Jeremy Bentham. Some four or five mixtures of result, intent and dangerousness seem the largest number that the penal law can digest. So the question of whether high velocity .38-caliber bullets kill more often than their low velocity .38-caliber cousins can hardly be expected to differentiate offenses. One suspects that, in the task of grading offenses of violence, the law will be hard put to digest effectively even the great difference in death rates between .22 and .38 caliber guns, although this

harm." Ill. Rev. Stat., ch. 38, § 12.4 (1969). Attempted murder requires an attack "with intent to commit" the offense of murder. See *id.* at § 8-4.

is not clear. Certainly, however, the law can act on the four- or five-to-one difference between death rates in gun and knife attacks.

The second qualification advanced goes a long way toward canceling out the first—if only a limited number of "dangerousness" distinctions can be recognized, then the margin of error from present data is relatively insignificant since the task is the rough grouping of attacks by dangerousness. Particularly if wound location is taken into account only in cases where the attacker had a better-than-usual opportunity to control results, the law's incapacity for fine distinctions diminishes concern with the crudeness of present data.

The third qualification that must be considered is not so easily pushed into the lower rank of present concern. It is one thing to suggest that considerations of objective dangerousness can be integrated into the grading of violent assault and quite another to argue that distinctions based on objective dangerousness, if so integrated, will lead to a substantial saving of lives. If the law could be structured and communicated so that the threat of more severe sanctions would lead people to shoot once rather than twice, use small-caliber rather than large-caliber guns, or, best of all, resort to knives instead of guns, the effect would be a substantial social policy benefit, but there is less reason to hope for a substantial increment of deterrence in this area than in almost any other area of social concern. At the point of attack, the average violent offender seems relatively immune to the threat of criminal sanctions. Unlike many crimes, gun and knife attacks generate a substantial probability that the offender will be arrested[30] and a relatively high risk of being punished,[31] because, with the exception of random or robbery-related attacks, the offender is usually easy to identify. Furthermore, almost all of the people who participate in shootings and stabbings are running a substantial risk of killing the object of their attack and thus are already in jeopardy of the law's most severe sanction. At the same time, these attacks typically occur in a context of substantial emotional arousal.

We thus cannot expect every distinction the law wishes to draw to have a substantial influence on the behavior of attackers. For this reason, a strategy of weapons control that focuses on making mechanisms unavailable at the time they may be used in attacks promises a good deal more loss prevention than a gradation of punishment based on the degree of objective dangerousness.[32] Yet it is not impossible, if the law focuses on one or two central distinctions—the difference between guns and other weapons seems to be a likely

[30] See Federal Bureau of Investigation, Uniform Crime Reports 8-10 (1969).

[31] See Charles Tittle, Crime Rates and Legal Sanctions, 16 Soc. Probs. 409 (1969).

[32] See George P. Newton and Franklin E. Zimring, *supra* note 1, at chs. 12, 17.

candidate—that messages conveyed by the grading of offenses might affect attacker behavior at the margins.

But if this kind of process is what we seek, the number of distinctions should be kept small if the message is to be effectively conveyed. And in noting the possibility of some indirect effect of grading on social learning, no basis exists for doubting the initial statement—the prospects for marginal deterrence are far from bright.

There are reasons other than deterrence for considering the objective dangerousness of an attack in making decisions about how seriously an attacker, or a class of attackers, should be punished. To the extent that retributive considerations influence the punishment decision, there is reason for supposing that, as a matter of justice, more dangerous attacks should be punished somewhat more seriously than less dangerous attacks, and that one dimension of the equality of treatment that the law should seek is that attacks of relatively equal dangerousness should, all other things held constant, be treated similarly.

The point I am trying to make is too simple to justify an excursion into the philosophy of punishment. One measure of social dangerousness is the likelihood that a given act, in the generality of cases, will generate loss of life. Therefore, one criterion under a retributive theory of punishment should be the likelihood that a violent event will lead to death. A corollary is that data on objective dangerousness give the retributivist a new index of judging the justness of punishment. Focusing on how many wounds an attacker inflicts, and what kind of instrument he uses, provides an index of probable result less fortuitous than a test that concentrates on result alone.

Yet I am far from confident that a retributivist would feel completely comfortable making judgments about the just degree of punishment from objective dangerousness.[33] Modern arguments for equality in punishment have emphasized the guilty mind in making claims about equal culpability. The data in the present study make a point that, in large measure, runs against this current. Many of the factors that would be taken into account in judging objective dangerousness are independent of apparent differences in the quality of an attacker's intention. One of H. L. A. Hart's many difficulties with the unequal treatment of attempted and completed crimes is precisely that focusing on result tends to treat those of equal mental culpability in unequal ways.[34] Yet the same can be said of calculations based on objective dangerousness.

[33] Indeed, I am far from sure, in the present array of philosophical positions, of the definition of a "retributivist." Cf. H. L. A. Hart, Punishment and Responsibility; Essays in the Philosophy of Law 231 (1968):

> . . . At least in the broader modern use of the term "retribution," there are many different answers to each of these questions, which may be styled "retributive" and have often earned the title of "retributive" for the theory of which they form part, even if the theory also contains reformative or deterrent elements normally contrasted with retribution.

[34] See *id.* at 129-30.

My purpose here is to raise the issue rather than resolve it. My own tentative conclusion is that it is at least possible that objective dangerousness could play an important role in a retributivist scale of punishment decisions. In so urging, I point out that we are discussing the use of data on dangerousness only after intent to do harm has been established. I make no implicit claim as to the justice of punishing behavior in the absence of culpable mental states.

Apart from deterrence and retribution, there is an argument to be made that objective dangerousness can help us in dealing with the basic economic problems of law enforcement. Data on the objective dangerousness of different forms of behavior can help in the allocation of scarce penal, prosecutorial, and preventive resources by drawing attention to problems of maximum severity. It is commonly argued, for example, that the addictive, debilitating and criminogenic qualities of heroin make this substance a more appropriate candidate for substantial law enforcement efforts than other drugs. Data on the death rates from attacks can be used in a similar way to focus on the most important problems in the area of violent assaults. Yet the extent to which an attack is likely to kill is something apart from the extent to which that form of attack is a social problem. If one form of attack has a death rate of 50 per 100 attacks but there are only 100 such attacks in the United States, data on the high death rate do not show that the problem presented by that form of attack is more serious than the problems presented by much more common attacks with lower death rates.

Indeed, one conclusion that can be drawn from the sequence of studies here reported is that the intention to wound with an extremely deadly weapon is, in the United States, a more serious problem than unambiguously lethal attacks. There are, I think, perspectives that the present study can bring to the economic problems of deciding whether and how the criminal law should attempt to affect human behavior. But these perspectives come less from a consideration of grading different forms of deadly attack than they do from the broader view of the criminal law as an instrument of loss prevention, for example in the area of weapons control.

I do not want to leave the impression that considerations of objective dangerousness are wholly novel in criminal law. The treatment of objective dangerousness in modern criminal codes varies from situation to situation. Behavior that is dangerous only because it increases the chances that serious but unintended consequences will occur is routinely made criminal. Drunk driving is one offense that seems to fit comfortably into this category. And even those who stress the necessity of intent to do wrong for a proper finding of criminal liability would find awareness of the fact that the actor was driving under the influence of alcohol to be sufficient *mens rea* (guilty intent) to convict, even when the actor was unaware of any risk that his conduct would lead to further harm. In addition, many penal codes make killings resulting from gross negligence seriously punished offenses.

It may be the case, however, that criminal codes are more apt to base decisions on criminal liability on the objective dangerousness of behavior when the penalty is low than when the penalty is high. There are striking exceptions to this, such as the felony murder rule, which is alive and apparently flourishing in most jurisdictions, so the more precise point may be that criminal law deals in objective dangerousness in those crimes that do not require that an individual intend or knowingly risk certain consequences. Where the law requires intent, knowledge, or recklessness with respect to death as a threshold for liability, as in the case of non-felony murder, it is suddenly unconcerned with variations in the objective dangerousness of conduct. The origin of the cleavage between intent and dangerousness is unclear. Perhaps there is an implicit assumption that when men can be said either to know or to intend that a result will follow from their conduct, their conduct will almost inevitably produce such a result. Since intent to kill, in most jurisdictions, may be inferred from the act of shooting another with a firearm in an area from which mortal wounds often result,[35] the presumption that *mens rea* sufficient to constitute murder inevitably produces a lethal result is incorrect.[36]

[35] See, *e.g.*, People v. Sheppard, 402 Ill. 411, 84 N.E.2d 377 (1949) (one wound—attempted murder, even though the wound was not to an area where death normally results).

[36] In part, the modern emphasis on *mens rea* is a reaction against the theory of "objective liability," a reading of the common law argued by Oliver Wendell Holmes, Jr. It is, I think, appropriate to distinguish that theory from the approach I am suggesting. Holmes described the operation of the "objective theory" of liability in the law of murder in The Common Law 56-57 (1881):

For it is to be remembered that the object of the law is to prevent human life being endangered or taken; and that, although it so far considers blameworthiness and punishing as not to hold a man responsible for consequences which no one, or only some exceptional specialist, could have foreseen, still the reason for this limitation is simply to make a rule which is not too hard for the average member of the community. As the purpose is to compel men to abstain from dangerous conduct and not merely to restrain them from evil inclinations, the law requires them at their peril to know the teaching of common experience, just as it requires them to know the law. Subject to these explanations, it may be said that the test of murder is the degree of danger to life attending the act under the known circumstances of the case.

When Holmes speaks of "the known circumstances of the case," he is referring to circumstances known to the generality of men rather than to the particular accused. He is thus, at least implicitly, not only assuming the culpability of acts that convey a high degree of objective dangerousness, but also maintaining that dangerous acts which unintentionally result in death are as culpable as dangerous acts intended to cause death.

Yet the data reported in this paper on objective dangerousness suggest that if the number of wounds an individual inflicts is any measure of his intention, attacks intended to kill have a higher death rate than more ambiguously motivated attacks, so that there is some basis in fact for differentially judging the two kinds of attack even if the likelihood of death is the only basis for judging the seriousness of attack. A proponent of the Holmesian position might respond that insofar as objective data such as the number of wounds inflicted or even choice of weapons can be taken as indices of intent, the grading of criminal homicide could proceed by placing distinctions on these objective

2. *Applying the Dangerousness Standard: the Problem of the One-Shot Killing.* One question raised by the short duration of most fatal and nonfatal assaults is whether the law should allow for a change of heart on the part of offenders and punish single-wound attacks less severely than those carried further. In the criminal law of attempt, an offender's change of heart is usually significant only if it occurs before a criminal result has been achieved.[87] Were objective dangerousness one of the standards that fed into the grading of deadly assault, more lenient treatment of single-wound attacks might be justifiable on the ground that these attacks are less likely to kill than multiple-wound attacks with the same weapons. The question is most problematical when an attack is terminated after a single shot or stabbing and yet the victim dies. Assume that we know little more about intent in such a case than the facts set forth in the previous sentence. The argument for a reduction in the grade of the offense is based on treating the assault that kills in approximately the same way as an equally dangerous but nonfatal attack with the same weapon. To the extent that deterrence seems realistic, the argument is buttressed by the prospects of persuading an individual to pursue leniency by abandoning an attack before it reaches the point of maximum dangerousness; yet death has occurred, and thus we have less reason to suppose that the attacker would allow his victim to live than is the case with the nonfatal single-wound attack. Moreover, the actual social loss is greater: whatever the value in dealing with the chance of death as an abstraction, one must also deal with the fact of death as a reality.

I do not state the issue intending to answer it, because accepting that objective dangerousness is relevant to the grading of deadly assault does not compel a particular answer to the question. Objective dangerousness is only one of many grading principles that can correctly be applied. The usefulness of viewing attacks in terms of objective dangerousness is not that such a view

manifestations rather than on the subjective nature of intent. I am not unsympathetic to this view, but feel that it is not an accurate representation of what Holmes himself would do with the data. My suspicion is that any attack with a deadly weapon would, if death ensues, result in the Holmesian classification of murder. The "objective test" device then becomes one of generating liability for the highest grade of offense rather than making distinctions between types of attack. Fewer than 1 per cent of all robberies result in homicide, and fewer than 1 in 10 robbery attacks kill. Fewer than 10 per cent of attacks with deadly weapons lead to a lethal conclusion. In either case, if "the test of murder is the degree of danger to life attending the act under the known circumstances of the case," any lethal conclusion equals murder. This approach does not make distinctions in deadly attacks; it obliterates them. To apply Holmes to the cases we have been examining, all of the knife and gun attacks to an area that could cause death would be murder when death was the result. Either it follows that all such nonfatal attacks are attempted murder or the Holmesian emphasis on "objective liability" really makes punishment more dependent on fortuity than almost any other test that could be applied to this class of cases.

[87] See Model Penal Code § 5.01(4), Renunciation of Criminal Purpose (as Defense to Attempt) (Prop. Off. Draft, 1962).

answers the question whether a single-wound assault should be treated more leniently but that such a perspective raises that question in a new light.

3. *Toward a Unification of the Criminal Law of Violence.* Another issue to which the present data speak with some persuasive power is whether there is reason to shift from the traditionally separate criminal law consideration of homicide and other offenses of violence to a system that considers the basic category of behavior—that of violent attack—as an important unifying principle.

To be sure, some of the evidence one can marshal for the proposition that there is undue separation in the criminal law's treatment of violence under the present system is impressionistic, even literary. Yet a small literary excursion may be worthwhile. For example, the deadly assaults we have been examining are governed by the provisions of the Illinois Criminal Code of 1961,[38] by many standards one of the most modern and most thoroughly rationalized of penal codes. Homicide, including murder, voluntary manslaughter, involuntary manslaughter, and concealing the death of a bastard is dealt with in Article 9 of that Code. Article 12 of the Code, entitled "bodily harm," defines the offenses most commonly associated with nonfatal serious assault: assault, aggravated assault, battery, aggravated battery and others. The chapters on homicide and bodily harm are separated by provisions defining offenses such as kidnapping, rape, incest, bigamy, prostitution, pimping and obscenity.[39] One is moved to suggest that this separation is neither accidental nor without significance.

Scholars and draftsmen, both ancient and modern, have tended to consider the law of homicide separately and exhaustively. In the early years of this century, Oscar Warren published a five volume treatise on the law of homicide.[40] The reported law on the subject of homicide is enormous. This is easy to explain. Murder presents a combination of ultimates, the ultimate offense against human security and the ultimate punishment vested in temporal authority. Particularly in jurisdictions where that punishment is death, one can understand a defendant's motives for producing a high volume of lengthy appeals. At the same time, the lawyer is drawn to homicide by the considerable human instinct, when faced with a choice, to watch the table where the players are betting with $100 chips. For these and other reasons, when the great intellects of criminal law scholarship are faced with the possibility of writing a rationale of homicide or one of embezzlement, the choice becomes an obvious one.

The importance of homicide as a social and intellectual problem does not

[38] Ill. Rev. Stat., ch. 38, art. 1-42 (1969).

[39] Ill. Rev. Stat., ch. 38, §§ 10-1, 11-1, 11-11, 11-12, 11-14, 11-19, 11-20 (1969).

[40] Oscar Leroy Warren, On Homicide (1914).

explain why concern about the law of homicide should not have broadened to a consideration of the great variety of violent threats to human life. In part, one can suggest that the criminal law's emphasis on the quality of an actor's intention has helped maintain this separation. As suggested above, it may have been assumed that a man not only intends the natural and probable consequences of his acts, but intends these consequences to the exclusion of all others, and that in all but a few situations this unambiguous intent will lead to the consequences intended.

How has "homicidal isolationism" handicapped the development of effective criminal law theory? The fast answer is that data and perspectives on objective dangerousness as an index of the significance of conduct are not obtained until nonfatal and fatal attacks with similar weapons and in similar situations are subjected to the unified approach. But the deeper point is the danger of inconsistency and injustice that separation may risk. Real differences in dangerousness are not recognized; artificial distinctions are maintained.

4. *Discriminating Intent in Deadly Attack.* No area of the criminal law is more notorious for fine and often artificial distinctions between mental states accompanying acts than the law of homicide. Most of this notoriety attaches to the device of distinguishing degrees of culpability for murder by asking whether "premeditation" accompanied the intention to kill.[41] While premeditation may have started out as the clearly distinct concept of "lying in wait," as the concept grew the distinction between premeditated and unpremeditated intentional killings became progressively metaphysical.[42] Distinguishing between killings "with malice" and killings "without malice," if that distinction rests on anything other than the simple intention to kill, is also a task best left to word-magicians or judges and juries trying to conform results in homicide cases to personal instincts about rough justice.

While the concept of premeditation has received the bad press it deserves in academic writings,[43] most modern writers do express faith in some *mens rea* distinctions in grading criminal assault. The most popular distinction is between intent to kill, or knowledge that acts will kill, on the one hand, and dangerous acts that seek merely to inflict nonfatal results and are reckless or negligent with respect to fatal consequences. The distinction is an important

[41] See Edwin R. Keedy, History of the Pennsylvania Statute Creating Degrees of Murder, 97 U. Pa. L. Rev. 759 (1949).

[42] See *id.* at 773-77.

[43] See Benjamin N. Cardozo, What Medicine Can Do for Law, in Law and Literature and Other Essays and Addresses 70, 100 (1931):

What we have is merely a privilege offered to the jury to find the lesser degree . . . . I have no objection to giving them this dispensing power, but it should be given to them directly and not in a mystifying cloud of words.

one in the Illinois Criminal Code, for example, because a nonfatal attack with intent to kill is attempted murder, while an attack with any lesser intent is aggravated battery.

But to say that this distinction is important does not mean that it is viable in all cases. There were several hundred cases in one four-month period in Chicago in which an individual wounded another with a firearm in an area where such a wound could prove fatal and three out of four times he only wounded his victim once. Are all of these attacks committed, at the time of the first firing of the weapon, with "intent to kill"? What further data can discriminate attacks intended to kill in this category from other attacks? If we could crawl inside the minds of particular offenders, and if their own emotions were something other than ambiguous about what results were desired, we might obtain some more precise answers and some more precise distinctions. But the combination of the limitations of modern science and those imposed by modern criminal procedure makes this further step into the offender's mind unlikely, and in the circumstances it is not entirely unfortunate. In judging these serious attacks one either operates with a set of almost conclusive presumptions about intent, or one leaves the question of intention to kill versus intention merely to inflict great bodily harm to the discretion of the trier of fact. A presumption of attempted murder in all firearm and knife attacks would represent a smart comeback for the theory of objective liability, and would in a short time double the number of adult prison inmates in Illinois. Requiring additional evidence for an inference of lethal intent would widen the gap in punishment between similar fatal and nonfatal attacks. The outcome of leaving the determination of crime to the discretion of the trier of fact is more difficult to predict, but is hardly a utopian solution.

In the city of Chicago, then, the distinction between intent to kill and other mental states has some utility in extreme cases, but there are no firm guidelines to provide for the majority of serious assaults.

III. Conclusion

If the weapon-caliber study proves useful to criminal law scholars, it will do so because it injects information about the reality of deadly attacks into an area where such data are rarely deployed. The study appears to say that intent to kill is rarely a helpful way to distinguish among a large number of nonfatal attacks with deadly weapons, and that the criminal law of violence may be artificially separated into fatal and nonfatal containers that hold the same behavioral brew.

As is usually the case, the critical points are easier to make than the constructive ones and enjoy a higher level of confidence. It is by no means clear that focusing on objective dangerousness as one of many factors differentiat-

ing criminal acts of violence will affect the behavior of potential offenders. It is also inadvisable to assume that considerations of objective dangerousness should be of controlling importance in the definition of offenses. Such considerations are relevant, but other standards, such as result and intention, are also relevant. For that reason the preceding discussion raises a good many more questions than it answers.

One implication of the present exercise may, indeed, be that there can be no such thing as a single "model" penal code. If variations in penal law have any effect at all on behavior, then the proper distinctions in the criminal law of violence should be designed to maximize preventive effects. Different patterns of violence may call for different types of distinctions. And even if the criminal law is whistling in the dark, there is a case to be made, based on consistency and fairness, that distinctions between grades of criminal offenses of violence should parallel the lines of demarcation in the reality of violence.

EXHIBIT 10

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UNDERGROUND GUN MARKETS*

Philip J. Cook, Jens Ludwig, Sudhir Venkatesh and Anthony A. Braga

This article provides an economic analysis of underground gun markets, drawing on interviews with gang members, gun dealers, professional thieves, prostitutes, police, public school security guards and teenagers in the city of Chicago, complemented by results from government surveys of recent arrestees in 22 cities, plus administrative data for suicides, homicides, robberies, arrests and confiscated crime guns. We find evidence that transactions costs are considerable in the underground gun market in Chicago, and to some extent in other cities as well. The most likely explanation is that the underground gun market is both illegal and 'thin' – relevant information about trading opportunities is scarce due to illegality, which makes search costly for market participants and leads to a market thickness effect on transaction costs.

This article provides an economic analysis of underground gun markets, drawing on interviews with gang members, gun dealers, professional thieves, prostitutes, police, public school security guards and teenagers in the city of Chicago, complemented by results from government surveys of recent arrestees in 22 cities plus administrative data for suicides, homicides, robberies, arrests and confiscated crime guns. Systematic data on prices and quantities are generally lacking for underground markets, and ours is no exception. But we are able to provide a qualitative picture of how Chicago's underground gun market operates, and offer some tentative thoughts about what these results might imply for American gun markets and gun policy more generally.[1]

This topic is of interest in part because of the high rate of gun violence in the US. Despite a dramatic decline in crime during the 1990s America still has a homicide rate that is about four times as high as in England and Wales (FBI, 2005, Cotton and Bibi, 2005). Because firearms are involved in 70% of all American homicides but fewer than 10% of those in England and Wales, the difference in overall homicide rates is largely accounted for by gun homicides. The total social cost of gun violence in the US is estimated to be in the order of $100 billion per year (Cook and Ludwig, 2000).

Underground gun markets have developed in the US in response to federal regulations that seek to prohibit ownership and possession by that sub-set of the population deemed to be at unacceptably high risk of misusing guns – primarily youth and adults with serious prior criminal records – while preserving easy access for everyone else.

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[1] Most of what is known about the underground gun market comes from interviews with incarcerated prisoners or inner-city youth (Wright and Rossi, 1994; Webster *et al.*, 2002; Sheley and Wright, 1993; Callahan and Rivara, 1992; Hales *et al.*, 2006). However such interviews can at best shed light on how a subset of the retail market operates and are not informative about other aspects of market structure or conduct.

Whether the gun market can be segmented in this way remains the topic of spirited debate in policy circles. In Section 1 we review this regulatory system and note that a few jurisdictions, including Chicago, go further and essentially prohibit the private possession of handguns, the type of gun most commonly used in crime and violence. The fact that Chicago has unusually restrictive regulations makes the city an interesting case study of what difference government regulations can make; it also makes for an interesting comparison with the restrictive regimes of Britain and other Western nations, although there is little systematic research on the functioning of underground gun markets anywhere.[2]

Economists and other sceptics like to point out that government prohibitions on transactions are difficult to enforce; the ingenuity of the marketplace, motivated by profit, will overcome whatever legal obstacles are put in place. If true for handguns in Chicago, then we would expect to find that youths and criminals are able to acquire them with little trouble (low transaction costs) at prices not that much higher from those in the legal market. As New York University law professor James Jacobs observes in this regard, 'Some criminals claim that it is as easy to buy a gun on the streets as it is to buy fast food. One Chicago gang member stated, "It's like going through the drive-through window. Give me some fries, a Coke, and a 9-millimeter."'[3]

The first contribution of our article is to establish the existence of substantial transaction costs in the underground gun market, based on a series of in-depth ethnographic interviews conducted in two high-crime neighbourhoods on Chicago's South Side by a member of our research team (Sudhir Venkatesh, hereafter SV). In Section 2 we document large mark-ups over legal prices, search costs, a high rate of uncompleted transactions and substantial physical risk and uncertainty about gun quality. These findings stand in stark contrast to both standard economic intuition and the prevailing common wisdom about gun markets in the US.

We argue in Section 3 that the most likely explanation for these transaction costs is the fact that the gun market is both illegal and 'thin', that is, has few buyers and sellers. The illegality of the gun market increases search costs for prospective trading partners. Diamond (1982) notes that in this type of trading environment there can be a market 'thickness effect' on transaction costs.

In Section 3 we also consider four types of explanations for why the gun market is thin: police; gangs; neighbourhood-specific factors such as attitudes towards guns in high-poverty, high-minority urban areas; and city-specific factors such as Chicago's ban on handguns. We find that law enforcement activities appear to matter more in suppressing supply in the gun market than in other underground markets, such as those for drugs, in part because the street gangs that are well positioned to deal in guns avoid doing so for fear of attracting police attention, thereby jeopardising the profits associated with the more lucrative drug trade. There is a possibility that the underground gun market in SV's neighbourhoods differ from other Chicago neighbourhoods, but we show that there is more similarity than difference, at least with respect to the dimensions we can measure from administrative and survey data.

[2] A partial exception is due to the recent study for the Home Office, which sought information on criminal access to guns in Britain through interviews with 80 people imprisoned for firearms offences (Hales *et al.*, 2006).

[3] Jacobs' quote is taken from Don Terry, 'How criminals get their guns: in short, all too easily', *The New York Times*, March 11, 1992, p. A1.

We have no direct test of the influence of Chicago's handgun ban in reducing gun availability but demonstrate that it was ineffective in reducing the prevalence of gun ownership in the city. The frictions we observe in the underground market are more likely due to the general scarcity of guns in the city (gun ownership rates are quite low, a fact that predates the ban) and on Chicago's emphasis on anti-gun policing. But even in cities with more guns and less enforcement, our analysis of multi-city survey data of arrestees indicates that many criminals find it difficult to obtain one.

From a social welfare and policy perspective we are also (or perhaps especially) interested in the question of whether friction in the underground gun market winds up influencing gun involvement in crime. Section 4 reviews evidence suggesting an affirmative answer. We discuss the limitations and implications of these findings, and directions for future research, in Section 5.

1. Regulations on Gun Markets in the US

The underground market in the two neighbourhoods studied by SV and in Chicago more generally is shaped by the legal framework that regulates gun ownership and transactions. The prevalence of guns in private hands is also relevant, since one source of guns to underground transactions is the existing stock.

1.1. *Regulatory Framework*

The 1968 Gun Control Act (GCA) requires everyone 'engaged in the business' of selling guns to obtain a federal firearms license (FFL). Since 1994, all FFLs have been required by either the federal Brady Act or more restrictive state laws to conduct background checks to verify the eligibility of prospective gun buyers (Ludwig and Cook, 2000). Private owners who are not 'engaged' in the gun business are not required to obtain a FFL. The only federal restriction on these sales is that the seller cannot knowingly provide a gun to someone prohibited by law from having one (Cook *et al.*, 2005; Vernick and Hepburn, 2003).[4]

Under the regulatory system established by the GCA states are allowed to impose additional restrictions on gun transactions beyond those required by federal law. For example several states require that all guns be registered with the authorities or that all gun owners obtain state licences, or both (Vernick and Hepburn, 2003). These requirements are intended to provide officials with some way of tracking – and thus regulating – secondary market gun sales.

1.2. *Diversions from Legal to Illegal Hands*

Nationwide, few criminals get their guns directly from licensed gun dealers (Wright and Rossi, 1994). But the legal market for guns and legal ownership patterns affect supply in the underground market through theft. With somewhere between 200 and

[4] The Federal Gun Control Act bans possession by a number of categories of individuals, including convicted felons, those under indictment, and those convicted of a domestic violence offence. Individuals under age 18 are barred from possession of a handgun unless under supervision.

250 million guns in private hands in the US, many of which are stored unlocked in order to be readily available for use against criminal intruders, it is not surprising that a large number of guns (over 500,000) are stolen each year (Cook and Ludwig, 1996).

Another source of guns for the underground economy consists of unregulated secondary market sales, estimated to be on the order of 2 to 3 million per year (Cook and Ludwig, 1996). Organised gun shows appear to account for just a small share of all secondary market transactions, including those involving criminals (Wright and Rossi, 1994; Cook and Ludwig, 1996). In addition to secondary market sales, guns may be loaned out among friends and relatives.

A final way in which guns wind up in the hands of criminals is when a legal owner 'converts' into a criminal. Most gun crime in the US is accounted for by people not legally allowed to have guns (Cook and Laub, 1998, Cook *et al.*, 2005). However there is still a non-trivial amount of gun violence committed by adults who legally owned guns before using them in crime.

1.3. *Chicago's Regulatory Environment*

Chicago provides a particularly interesting case study for understanding underground gun markets because the city has unusually restrictive firearm regulations. The city is located in the state of Illinois, which requires all gun owners to obtain a Firearm Owners ID card and bans private transfer of a gun to anyone lacking such a card. Chicago itself goes still farther; since 1982 it has essentially banned handguns except those already in circulation that were then registered with the city. Furthermore, there are almost no legal firearms retailers operating in the city, so that a private citizen seeking to buy a firearm of any sort must travel outside of city limits. (Mailorder purchases of firearms is banned by federal law.)

In a sense Chicago's gun regulations and its relatively low rate of gun ownership are more akin than most American jurisdictions to those of other western nations. The prevalence of gun ownership, particularly of *hand*guns, is much higher overall in the US than any other high-income country, and its national regulations on gun transactions and possession are weaker (Hemenway 2004, p. 197–8; Killias *et al.* 2001). The Chicago ban on handguns has a particular parallel in the handgun ban and buyback in Britain following the Dunblane massacre (Leitzel, 2003).

2. Underground Gun Markets in the Chicago Ghetto

The underground gun market in the Chicago neighbourhoods we study is characterised by substantial transaction costs, by which we mean large mark-ups over legal prices, substantial search times, uncertainty about product quality, and the physical risk associated with exchange. This finding stands in stark contrast to prevailing common wisdom about how these markets operate.

2.1. *Study Neighbourhood*

Our study draws on uniquely detailed data about underground gun markets derived from SV's intensive field interviews conducted in the high-crime community in South

Side Chicago known as Grand Boulevard/Washington Park (hereafter GB/WP). The selection of this site is partly pragmatic, given the proximity to SV's initial academic home (the University of Chicago). However this area is also of particular interest given that gun crime in America is disproportionately concentrated in large cities and within these cities occurs disproportionately in highly disadvantaged neighbourhoods.

The target community is a large contiguous swatch of poor and working-class neighbourhoods in the South Side of Chicago that forms the heart of the 'Black Metropolis', Chicago's oldest African-American settlement. The community has become a space of considerable gentrification and economic development, thereby combining extremely poor city blocks – including the site of the notorious Robert Taylor Homes public housing project – with blocks of middle-class homeowners.[5] Despite these recent changes, data from the 2000 Census show that residents of the community are still mostly African-American and much more disadvantaged than other residents of Chicago or the US as a whole (Table 1). The homicide rate in the GB/WP area is about 75% higher than in the city of Chicago overall and is about 6 times the national rate.[6]

SV's interview samples are defined by age and criminal involvement, as well as role in the underground gun market.[7] His goal was to ensure that each 'type' of neighbourhood resident is represented in the study but the particular set of individuals interviewed within each type is essentially a convenience sample. Interviews were conducted with 190 non-gang affiliated youths aged 18–21, of whom 116 owned a gun, and 75 gang-affiliated youths, whose access to guns is usually under control of the gang leadership.[8] SV also interviewed 90 non-gang affiliated adults, of whom around 45 owned a gun; and 57 gang-affiliated adults (including 12 gang leaders), of whom 50 owned a gun. In addition SV interviewed 12 elite gun suppliers (importers or wholesalers), 11 retail brokers, 17 adults engaged actively with criminal associations, and 77 prostitutes.

2.2. *Characteristics of the Underground Gun Market*

2.2.1. *Gun demand*

What motivates the demand for guns in the GB/WP area? SV's younger informants typically seek guns for the status they confer, rather than as inputs into a crime production function. With status goods economists sometimes refer metaphorically to

[5] The physical infrastructure of the area is changing dramatically because of public housing demolition and heightened gentrification. Given these changes we focus only on gun markets apart from public housing, given that any in-depth findings on public housing-based gun use and trading would soon be outdated.

[6] The Greater Grand Boulevard area consists of three 'community areas', the official administrative unit that sub-divides Chicago: Oakland, Grand Boulevard and Washington Park, which in 2003 together had 17 homicides and a population of 48,262 (Chicago PD Annual Report, 2003).

[7] Sample size is a somewhat imprecise concept with ethnographic fieldwork, since for example some of these discussions might be held informally with a group in an apartment building hallway. We try to count 'respondents' only as those with whom SV had a reasonably lengthy one-on-one discussion. There is also some ambiguity about people's roles within the neighbourhood; for example SV's definitions of 'gang affiliated' may not correspond to those used by the Chicago Police Department.

[8] Note human subjects requirements prevented SV from interviewing minors, so all respondents are 18 or older.

Table 1

Selected Demographic Characteristics for Grand Boulevard/Washington Park Field Site Neighbourhoods versus Chicago and US

	Grand Boulevard/Washington Park*	Chicago	US
Percentage under age 20	39.8	29.0	28.6
Race:			
% White	0.6	42.0	75.1
% Black	98.2	36.8	12.3
% Asian	0.1	4.3	3.6
% Hispanic (any race)	0.9	26.0	12.5
Schooling of adults ages 25 and over:			
% > = high school	61.0	71.8	80.4
% > = BA	8.7	25.5	24.4
Marital status of people 15 and over:			
Never married	50.9	40.9	27.1
Divorced	10.4	8.8	9.7
% adults 16 and over in labour force	48.4	61.3	63.9
% people poor	48.5	19.6	12.4
2003 homicide rate per 100,000	35.2	20.5	5.7

Notes. *Grand Boulevard consists of census tracts 3801–3820, while Washington Park consists of census tracts 4001–4008. Demographic and housing characteristics from 2000 Census. 2003 Homicide rate calculated for Chicago and GB/WP neighbourhoods from Chicago PD (2003), and for US from the FBI's Crime in the United States report.

'arms races', but in the market for guns among young people there seems to be a literal arms race at work. As one young gang member notes, in the absence of having a gun: 'Who [is] going to fear me? Who [is] going to take me seriously? Nobody. I'm a pussy unless I got my gun.'

Just showing rather than actually firing guns is usually sufficient for the purposes of achieving the desired result. As one youth noted, 'You have to let [other people] see it without letting them see it. See, it's all about them not messing with you.' As another youth noted, 'Like them slick flicks [pornographic movies], it's all about the bulge. It never even gets that far [explicitly showing other people the gun].' Another non-gang affiliated youth notes: 'Thing is, see, it ain't really about fighting or nothing, because even if you have a group of guys and you see a group of guys, lot of times, it's just you show 'em you got one, they show you they got one, and you just be on your way. It's just like signifying that you prepared.'

Even for older gang members and professional criminals who are regularly engaged in crime, gun use was typically limited to simply brandishing the weapon. For example of the 57 older gang members SV interviewed, only around 10% admitted to having fired their gun during a robbery.[9]

2.2.2. *Gun quality*

Prevailing wisdom about the demand for gun quality in the underground market is nicely summarised by Sheley and Wright (1993, p. 33): 'No military force willingly

[9] One notable exception is for robbing drug dealers. One informant described to SV his technique of firing a shotgun through the dealer's door in order to 'buy yourself some time to steal their shit because it makes so much noise ... and they need to see you mean business.'

enters battle with inferior weapons, and likewise, no central city resident would willingly carry anything other than the best small arms available.'[10] We instead find that preferences for gun quality are heterogeneous, consistent with the findings noted above that many consumers seek guns for status.

SV's younger informants tend to be quite ignorant about gun quality and general gun use. Fewer than one in ten of the 190 non-gang affiliated youths SV interviewed had ever been taught how to use a gun.[11] Older gang members and professional criminals tend to be more discerning. One older gang affiliate recounts his gun preferences for the purposes of robbing commercial establishments, especially for daytime robbery:

> 'When [cashiers] see that Glock [manufacturer of popular 9 mm semi-automatic pistols] or that .38 [caliber handgun] – I mean, a .44 [caliber] would be better, but that's hard to find around here – then you get that cash quick. You don't want to be keeping one of them sissy weapons.'

The presence of buyers who are indifferent to whether a gun works helps to explain how the market handles the problem that guns are 'experience goods'– sellers for obvious reasons discourage buyers from test-firing the gun during the transaction. The same information problem that faces buyers – working and non-working guns are often observationally equivalent – means that youth can 'produce' the ultimate services of interest (status, intimidation) with a broken gun as easily as with a working gun.

2.2.3. *Gun prices*

Interviews by SV with 116 gun-owning non-gang affiliated youths (age 18–21) reveal prices paid that range between $250 and $400. Interviews with 11 local gun brokers, who handle a large share of retail transactions on behalf of importers, suggest most of their guns are sold for between $150 and $350. These prices are typically for guns of low quality, manufactured by companies such as Lorcin, Raven and Bryco. These names were often mentioned to SV in interviews and as noted above also show up frequently in administrative data on confiscated crime guns maintained by ATF. While SV's interviews do not include information on the condition of the gun, it is noteworthy that most pistols from these manufacturers listed on websites (such as gunsamerica.com) sell for between $50 and $100 (with a $10 mailing/transaction fee), even for those used guns that are reported to be in 'excellent condition'.[12]

Thus the price markup in the underground market appears to be substantial. The street markup for illicit drugs such as heroin and cocaine appears to be somewhat higher: Jeffrey Miron estimates that '...the black market price of cocaine in the United States is 2–4 times the price that would obtain in a legal market, and of heroin 6–19

[10] Some criminologists, such as Kennedy *et al.* (1996), have observed that criminals may tend to acquire low quality guns in practice even though some express a desire for high-quality guns. ATF's top-ten crime-gun lists (ATF 2000*b*) have long noted the prevalence of cheap guns used in crime.

[11] For example one youth, 'Tony', narrated a common learning experience. SV: 'So, how did you know what to do with the .38?' T: 'I took it, started putting bullets in. Hell, I even put a rock in there and tried to fire it! You know, I just fiddled with it.' SV: 'Did it fire?' T: 'I'm not sure. I think it did.' SV: 'Well, that's kind of like saying "I might be pregnant." Either it fired or it didn't.' T: 'I mean it made a noise.' SV: 'Um, hmm. A noise. So, you really don't know anything about guns except possibly how to kill yourself.' T: 'Listen, it's not like we get taught that in school.'

[12] Under federal law guns can only be sent by mail to licensed dealers, so these web sites require some FFL to broker the sale.

times' (Miron, 2003, p. 529). But in still more stringent conditions, the price of handguns could increase to rival the drug markup. In a recent study of the underground gun market in England, based on interviews with 80 people imprisoned for Firearms Act violations, Hales *et al.* (2006) found that prices paid for handguns ranged 'from around £150 to £200 for a gun known to have been used in a crime, to a typical £1,000 to £1,400 for a new 9 mm model' (p. xii).

2.2.4. *Volume of transactions*

The underground market in firearms is a small part of the overall underground economy. We estimate that there are no more than 1,400 gun sales per year in the GB/WP area,[13] or about 1 sale per year for every 30 people living in this very high-crime neighbourhood. By comparison there would be at least 200,000 and perhaps as many as 500,000 or 1 million cocaine sales in this community every year – a difference of up to three orders of magnitude. Total revenue in this community for gun sales would be on the order of $200,000 to $500,000, compared to perhaps $10 or $20 million in the market for cocaine.[14] Our findings in this sense are quite consistent with those reported by Koper and Reuter (1996).

2.2.5. *Search costs*

SV's interviews provide three types of evidence for substantial search costs in the underground gun market in the GB/WP area:

- A system of local brokers has developed to facilitate market exchange and typically charge $30 to $50 per transaction, a large percentage of the sales price. These brokers capitalise on the information they have about the local underground economy – of the 11 brokers SV interviewed, all were over 30 and long-time residents of the area, and most were either participants in or closely connected to suppliers in the illegal markets for sex, gypsy cabs, or unregulated car repair or hairstyling.
- Even local gun brokers report that a large share of their transaction attempts fail – around 30–40%. Reasons included the inability to get a gun from a supplier; the customer and broker could not agree on the location for the transaction; and the broker either did not trust the customer's intentions or thought he or she was an undercover police officer.[15]

[13] SV interviewed five gun 'brokers', discussed in more detail below, who report an average number of gun transactions during the past year of 16. SV knew of 24 brokers working during the 15-month period of his fieldwork, and believes there were no more than 5 or 10 additional brokers not known to him, so we conservatively assume 34 total brokers in operation in the GB neighbourhood, who (if his group of 5 interviewees is representative) would have facilitated a total of 544 sales. Gun suppliers report that 60–80% of their sales are negotiated through brokers (we assume the 80% figure) and by our own estimates gun suppliers account for around half of all gun sales in the GB community, implying a total of around 1,360 gun sales per year. There are about 48,000 residents in the combined GB neighbourhoods.

[14] Our thanks to Peter Reuter for these drug market calculations. He notes that each year in the US there are perhaps 250 tons of pure cocaine, sold in pure units of 250 milligrams, suggesting around 1 billion sales nationwide each year. If we assume the national rate applies in the South Side GB/WP neighbourhood then there would be around 200,000 transactions, but given that this area is unusually disadvantaged there could plausibly be as many as 500,000 or even a million sales per year.

[15] In other cases, the transaction failed because the customer failed to bring enough cash to the transaction or tried to negotiate down the price.

- Interviews with 17 young adults who consider themselves 'regular' thieves, self-defined as deriving a substantial share of income from crime and engaging in at least four thefts per year, further support the general finding. Of the 17 interviewees in this group, only one person said they could find a gun in less than a week.

The search process in this market is further complicated by the fact that participants require information about prospective trading partners to engage in exchange.[16] In this market, reliable 'connections' appear to be scarce. The underground market for guns in Chicago does not involve large amounts of money but executing transactions with strangers is surely a risky business. The buyer may be an undercover police officer or potential informant, or simply dangerous. One gun dealer explained his preference for relying on brokers rather than dealing directly with customers:[17]

> 'You never know who these niggers are that need these things. Sometimes they just act crazy on you, 'cause you know, if I want a gun, then usually you pissed off. And, I don't like messing with these fools, 'cause they sometimes don't pay, they steal your shit. And, you know, they could be working for the cops, too, so I got to trust the folks I'm working with.'

Why do people tolerate these search costs when any Chicago resident can identify the location of numerous licensed suburban gun dealers with a quick search of the local phone directory or the Internet? These dealers are not prohibited from selling guns to Chicago residents. Even those people who are themselves ineligible to buy a gun from a licensed gun dealer can get someone else, usually a wife or girlfriend, to make a 'straw purchase' on their behalf if she obtained an Illinois Firearm Owners ID (FOID) card. The answer seems to be in part that the residents of SV's neighbourhoods are very parochial, perhaps because gang turf increases the risks of travelling to other areas.[18] One gang leader notes:

> 'Most of us, we never been outside these four or five blocks, our neighbourhood. Now, how can you bring the guns here if you don't even know how to get to other places? ... Even if we go to jail, we really spend most of our time around where we live, where we work.'

Table 2 presents the results of our analysis of administrative data on confiscated crime guns that were traced by the ATF. Chicago submits all confiscated crime guns for tracing during our study period, although of course only a fraction of crime guns are ever confiscated; see Cook and Braga (2001) and our data Appendix. With this caveat in mind, the first column of Table 2 shows that guns recently purchased in the Chicago suburbs of Cook County account for only around one-tenth of the crime guns in the

[16] In an analysis of drug law-enforcement strategy, Mark Moore points out that '...what is consistently difficult about drug trafficking is the process of reliably executing large financial transactions in a crooked world with no police or courts to enforce the contracts' (Moore, 1990, p. 138).'

[17] The account suggests part of the broker's fee is rent on broker information, and part is compensation for the unavoidable risks associated with selling guns.

[18] Another possible explanation is that federally licensed firearm dealers (FFLs) are by law required to record the identity of the official purchaser, which increases the legal risk associated with buying a gun from a dealer (even if one's girlfriend or wife makes a straw purchase).

Table 2

Markers for Straw Purchases for Guns Confiscated in Field Site and Rest of Chicago

	Grand Blvd/Wash Park	Rest of Chicago
Confiscated within 3 years of initial purchase	25.5%	27.6%
Confiscated within 3 years of initial purchase and first purchased in Cook County	10.6%	11.8%
Confiscated within 3 years of initial purchase and first purchased in Cook County by a female	2.1%	1.8%

GB/WP community, with only about a fifth of these guns (2% of the total) first purchased by a female.[19]

2.2.6. *Gun 'rentals'*

SV's sources reported that guns are often loaned out or shared in the GB/WP neighbourhood. However most of these exchanges occur outside of the market context and occur among people within the same social network, and so do not conform to what we would think of as a normal 'rental market'.

One form of sharing arises from the fact that groups of youths often join together to purchase a gun collectively. In particular youths who are not affiliated with a gang would be expected to have greater difficulty in making an arms-length connection than others. In SV's 116 interviews with non-gang-affiliated youths who had owned a gun, 40% reported obtaining their gun from a relative.[20] The importance of family sources for this group is consistent with previous surveys of criminally active youth; see Koper and Reuter (1996) for a review.

2.2.7. *Ammunition*

Ammunition (like guns) is illegal in Chicago,[21] and because most people rarely if ever fire their guns is essentially a durable good. Most people interviewed by SV have trouble securing ammunition and face large price markups compared to the legal market. Waits of 1 to 4 weeks for ammunition were not unusual. As one respondent noted, 'You really don't have someone who sells ammo around here, I mean it's like you have to hope you can get it from [the organisation] or maybe [a gun broker]. But you never

[19] Our finding that straw purchasing is rare in Chicago's underground gun market is consistent with results from interviews with incarcerated juveniles in Maryland, who also report rarely leaving their communities to get guns (Webster *et al.*, 2002). It is possible that increased enforcement by Chicago Police Department and ATF over the course of the 1990s made it less attractive for gun traffickers to use females as straw purchasers of new guns at nearby licensed dealers.

[20] In addition, 35% obtained their gun from someone affiliated with a gang; 17% from a licensed security guard; 6% from a broker; and 2% from some other source.

[21] Chicago law forbids the possession of ammunition except if the individual 'is the holder of a valid registration certificate for a firearm of the same gauge or caliber as the ammunition possessed, and has the registration certificate in his possession while in possession of the ammunition', or 'is a licensed weapons dealer . . . or [runs] a licensed shooting gallery or gun club'. Put differently, anyone found in illegal possession of a gun will also by definition be in illegal possession of ammunition if the gun is loaded. Secondary sales of either guns or ammunition are illegal by private parties in Chicago.

know, so, lots of times it's just a waiting thing, where you hope that someone who you got the gun from might have some bullets. But that really never happens, usually it's the gang that sells it or you just know somebody.' One non-gang affiliated youth reported that he spent $50 to get 10 bullets for a Beretta semi-automatic for which he had paid $300. By contrast, for $50 in the legal market one can purchase a box of 500 rounds of 9 millimetre ammunition. The ratio of street to legal prices in this case is on the order of 50 to 1.[22]

While older professional thieves often have more reliable sources of ammunition, even this group carefully rations bullets. One professional criminal reports to SV: 'I'm stealing a lot of car radios right now, and sometimes, if I get really brave I may try to take a purse. For that shit, I keep the gun, but I never use it, you know. I don't even load it, I keep the bullets I got for the bigger shit I do.'

3. Explaining Transaction Costs in the Underground Gun Market

Why do the high transaction costs documented in the previous Section exist and persist in the underground gun market studied by SV on the South Side of Chicago? In market environments where search for trading opportunities is costly and information is scarce, there can be a market 'thickness' effect in which transaction costs decline as the number of buyers and sellers increases. This seems like a potentially promising explanation for the high transaction costs we find in the gun market, since illegality impairs information transmission. But that leaves unanswered the question of why the gun market is so thin. We consider several explanations including policing, gangs and neighbourhood or city-specific factors, with an eye toward identifying policy levers to further reduce the efficiency of these markets (Schelling, 1984). Anti-gun policing and low overall rates of household gun ownership seem to be among the more important contributors to limiting the number of willing suppliers.

3.1. *Theory*

The illegality of the gun market in Chicago creates information problems in matching prospective buyers and sellers. Neither side of the market can take advantage of the well-developed infrastructure for legal advertising. In addition the illegality of the market means that participants do not have recourse to the courts to enforce transactions. The risk of theft, arrest, injury or even death associated with exchange means that buyers and sellers will want to obtain additional information about the characteristics of their trading partners. Matches of buyers to sellers will differ in quality depending on the degree to which one knows one's trading partner, or knows those who know one's trading partner. Given the information requirements and scarcity associated with exchange in the underground gun market, economic models that

[22] http://www.ammunitionstore.com/pricelist_ammo4.htm#9mm. In their interview study of prisoners for the Home Office, Hales *et al.* (2006) also find high prices for ammunition, and conclude that 'Ammunition appears to be a limiting factor and harder to obtain than firearms (p. xiii).' Interestingly their informants report that guns are usually sold bundled together with a small amount of ammunition, which is not true in Chicago.

emphasise search costs are a natural starting point for understanding the source of the transaction costs that we document in the previous Section.

The stochastic matching model developed by Diamond (1982) provides one way to understand transaction costs in the gun market. The prohibition on gun sales in Chicago introduces trade frictions, and moves us away from what Diamond describes as the 'fictional Walrasian auctioneer' that is usually assumed to facilitate exchange. Illegality makes it difficult to advertise, and so trade requires some search effort by both buyers and sellers with some probability of failure that is inversely related to overall market activity. In this type of environment economic activities can create trading externalities and positive feedback effects: 'The externality comes from the plausible assumption that an increase in the number of potential trading partners makes trade easier. The positive feedback is that easier trade, in turn, makes production more profitable' (Diamond, 1982, p. 882). That is, there will be a market 'thickness' effect where search costs decline with an increase in the number of market participants.

Similarly, Gan and Li (2004) and Gan and Zhang (2005) develop models with heterogeneity in products and buyer preferences, where search costs lead to a market thickness effect on match quality. Since match quality is relevant to our definition of transaction costs – product uncertainty and risk of injury or arrest should be lower when buying or selling a gun to someone about whom more is known – this type of model provides another complementary explanation for why there would be a market thickness effect on transaction costs in the gun market. An increase in the number of market participants increases the odds of encountering a buyer or seller that one knows or is at least known within one's social network.

Note this literature suggests it is in large part the *combination* of illegality and 'market thinness' that drives the transaction costs we document in the underground gun market. In 'thin' but legal markets, trading institutions can develop to reduce the costs to buyers and sellers of finding trading partners. For example, eBay has special Sections of its website devoted to the markets for antique dolls (pre-1930), Annette Funicello bears, imitation pearl pins and brooches, and game-used Major League Baseball memorabilia.[23]

If the market were illegal but thick, as for narcotics, institutions would develop to facilitate exchange, and sellers and buyers would have incentives to develop reputations (Koper and Reuter, 1996; Venkatesh, 2006).[24]

The limited evidence available on price mark-ups for other illegal, thin markets is suggestive of large markups. For example, one estimate from the Centers for Disease Control in the United States found that the Supreme Court's *Roe V. Wade* decision legalising abortion may have reduced the average price of an abortion from $500 to $150, while other estimates suggest prices may have declined by as much as 90% in

[23] See http://www.ebay.com

[24] For example drug-selling corners have developed in that market and seem to change locations easily in response to law-enforcement pressures, given that buyers and sellers are closely connected and so information about changes in trading locations is easily transmitted back and forth. In contrast in the underground gun market some white ethnic street gangs or gun importers help to organise fist-fighting events in the city's warehouses but these occur only every 3–4 months. The coordination costs of moving these fighting events in response to legal or other threats is greater than with relocating a drug corner and so these events are advertised only among a selected clientele.

some jurisdictions. There is also evidence that the market for illegal abortions prior to *Roe* was characterised by substantial price dispersion and often considerable physical risk (Graber, 1996, pp. 60–7). Similarly, pharmaceuticals to induce abortion that are sold for 50,000 rials in Pakistan or India are reported to have a retail street price in Tehran on the order of 200,000 to 700,000 rials.[25] The Center for Strategic and International Studies (1996, p. 115) reports that in the 1990s, Iraqi agents offered to buy a nuclear warhead from the director of a Russian nuclear research centre for $2 billion. By comparison the average cost of producing a nuclear warhead for the US is probably no more than $80 million.[26]

3.2. *Sources of Market 'Thinness'*

Why is the gun market so 'thin'? The descriptive results presented in Section 2 suggest that the durability of guns (and ammunition) may play some role, as does the possibility of shared ownership of guns by groups of youths. But this cannot be a complete explanation, particularly on the supply side.[27] After all, drug dealers regularly come into contact with many of the people who would at least periodically want a gun; why do they not diversify into the gun trade as well? In what follows we consider four general types of explanations: police pressure; interference by gangs; neighbourhood-specific factors; and city-specific factors.

3.2.1. *Police*

A drive through Chicago's South Side highlights the limits on policing the underground markets for drugs and sex services; street corners populated by drug dealers or prostitutes are a common sight, even in the middle of the day. And yet we find that the police activity does discourage participation in the gun trade. Police pressure against guns has the effect of jeopardising gang profits from the more lucrative drug trade, if the gang is careless about its involvement with guns.

While historically gangs were often organised for defensive or social purposes (Klein, 1995; Akerlof and Kranton, 2000), over time some gangs have undergone a process of 'corporatisation' (Levitt and Venkatesh, 2000). The most important income-generating activity of the gangs studied by SV on the South Side of Chicago is the distribution of illegal drugs (Levitt and Venkatesh, 2000).

As one gang leader explained to SV about why his organisation does not sell guns: 'It's really not worth it because not that many people buying.' Another gang leader notes: 'Police don't like [guns] moving around here, man. We stay away from that shit,

[25] http://www.parstimes.com/women/abortion_tehran.html

[26] Stephen Schwartz of the Brookings Institution estimates that from 1940 to 1996 the US spent about $5.5 trillion in constant 1996 dollars on nuclear weapons and weapons-related programmes (http://www.brookings.edu/fp/projects/nucwcost/schwartz.htm). Between 1945 and 1990 a total of 70,000 different warheads were produced (http://www.brook.edu/fp/projects/nucwcost/50.htm). Dividing the total expenditures 1940–96 by the total production 1945–90 yields around $79 million per warhead in 1996 dollars. To the extent there was additional production from 1990–6, the cost per nuclear warhead to the US government would be even lower than this crude estimate would suggest.

[27] On the demand side, many owners loan their guns out and never get them back, lose them, or sell them when cash is tight (Cook and Ludwig, 1996). In addition many youth in SV's neighbourhoods seem to have trouble finding suitable places to store their guns, which further increases the probability of theft or loss (Cook *et al.*, 2005).

see, 'cause we already got enough trouble with them [police].'[28] Police typically assume that gang members or alumni caught in possession of a gun obtained the weapon from the gang and so crack down on the gang accordingly.[29] These remarks are consistent with what one police officer explained to SV:

> 'Look, I'll be honest with you. There will always be drugs, drug dealing and drug dealers. The reason we get tight on guns is that it's better that there be drugs and no one gets killed than if someone gets killed. We love guns! We love getting them because it makes the job easier on the street. So, when we find one, yes, we really go after them [gang leaders] because they know the rules. They know the agreement, and if we get a gun, that means they broke it.'

3.2.2. *Gangs*

An alternative possible explanation for the 'thinness' of the underground gun market studied by SV is that gangs actually suppress the gun trade in order to preserve a monopoly over the capacity to inflict lethal violence in the neighbourhood. Yet SV's interviews do not find that gangs expend a great deal of effort in suppressing gun markets. Gang leaders are interested in knowing who is selling guns on their turf, and charge the standard 'tax' applied to other forms of underground exchange but do not seem to take any unusual actions to reduce the number of sellers in the gun market.

In fact, SV's interviews suggest that a substantial amount of gang involvement by neighbourhood youth is itself motivated by the transaction costs that seem to exist for other reasons in the underground gun market. For members, a gang creates a social network within which gun transactions can be accomplished with relatively little risk. The gang leadership has information about the reliability of its members and can make a credible threat to punish misbehaviour. Many respondents to SV's interviews on the South Side of Chicago report that they joined or stay in the gang to preserve access to guns. As one former gang member notes, 'You never leave [the gang] before you got the gun, because after you leave, they don't really have no reason to help you get one.'

In practice access to guns within the gang is regulated, with most transactions in the form of loans or rentals with strings attached. The general rule is that members can only own guns if authorised by gang leaders. These gang leaders in turn ration gun ownership in part by age. 'Shorties', young rank-and-file members who often want guns for social status, are typically authorised to access guns during gang wars (though even then many shorties are only allowed to carry knives), drug sales (at least for one member of the 4–6 member drug selling team assigned to provide security), and drug pick-ups and drop-offs outside the gang's own turf. These constraints are motivated by

[28] Another gang leader expressed his frustration about gun use by gang alumni: 'It's like these niggers get stupid after they leave. I mean, they know not to keep a gun on them when they do this [engage in income-generating crime], 'cause the cops hate that shit. I mean, they could use a knife or something. Why the gun? That just brings down [the police] on us really, I mean, that's the thing that happens all the time, [the gang] gets blamed and we get shut down.'

[29] During SV's fieldwork on the GB/WP neighbourhood, 43 gang members exited out of the 2 largest street gangs in the area, of which 37 continued to work in some capacity in the local underground economy (such as selling drugs, committing burglaries, fencing, or providing off-the-books services as day labourers or security guards). Of this group, 11 were arrested and in every case a gun was confiscated. In 7 of these cases, the police confronted the gang leaders about whether they had provided the suspect his gun.

the gang's other economic interests, including the fact that gun violence induces police crack downs on gang drug-selling activities and also may scare away customers.

Sometimes gang leaders actually enlist the police as agents in controlling gun use by notifying the police about unauthorised gun possession by rank-and-file shorties. In this scenario the police usually confiscate the gun but do not make an arrest, which helps to reduce enforcement costs to both gangs and the police. As one police officer notes:

> 'Yes, I suppose I'll admit that, on occasion, we will act on a call from [the gang leaders]. We prefer to have the guns off of the street. That is our first priority. It's hard, we cannot stop guns from coming through here, but these kind of arrangements help us to control who gets hurt. That's not good policing some would say, but they are not seeing what I see every day.'

Older gang members are less likely to use guns in ways that are contrary to the gang's economic interests both because age may reduce impulsivity and because many older members stay in the gang primarily for economic reasons.[30]

3.2.3. *Neighbourhood-specific factors*

A third possible explanation for SV's findings of high transaction costs in the gun market attributes them to factors that are unique to the neighbourhoods he studied. The neighbourhoods studied by SV are located somewhat far away from suburban gun dealers, are notorious for having among the city's most powerful street gangs, and could plausibly be subject to unusually vigorous policing against guns.

Yet we find that neighbourhood-specific factors cannot be a very important explanation for the transactions costs documented by SV given that prices, availability and other characteristics of the gun market in the GB/WP area as measured by administrative and other survey data appear to be so similar to the rest of Chicago. Compare for example the first and second columns in Table 2 on the proportion of confiscated crime guns traced by ATF that show the hallmarks of having been 'straw purchased' in suburban gun stores. Appendix Tables A1 to A4 show crime guns found in SV's study area are similar to those from the rest of Chicago along other dimensions as well. The similarity between these administrative data and SV's interviews of course also enhances our confidence in the reliability of the latter.

Table 3's statistics suggest SV's findings are also consistent with the reports of 1,194 arrestees interviewed in Chicago in 1996–7 as part of the US Department of Justice's Drug Use Forecasting (DUF) system (see data Appendix). For example, the prices paid are in the same range: of the 20% of DUF arrestees who ever owned a gun, more than two-thirds report having paid between $100 and $499 for their most recent gun, with a median price of $150 (median price of $100 for adult males, as seen in column two). DUF respondents also report high transaction costs. Of those arrestees who never owned a gun but indicated they might want one someday (just under one-quarter of

[30] Gang leaders also value the human capital developed by experienced members and so are more likely to formally or informally waive the gang's rules on gun ownership for older members. As one gang official notes, 'The way we do it is that we just don't write down that [the older guys] are carrying something.' Gang leaders sometimes use access to guns as an incentive for performance; for example, in some gangs the custom is to provide a gun to members who successfully execute authorised drive-by shootings.

Table 3

Gun Acquisition and Gang Membership among Chicago Arrestees

	Full sample	Adult males only
Sample size (*N*)	1,194	1,074
Ever own handgun?		
Yes	20.8%	20.4%
Gun acquisitions (for those ever owned)	%	%
Stole	6.1	6.9
Rented/borrowed	10.4	10.3
Bought	61.9	59.6
Gift/other	21.6	23.2
Total	100.0	100.0
Amount paid if bought:	%	%
$ 0–50	5.7	6.8
$ 50–99	20.5	24.7
$100–199	34.1	34.2
$200–499	33.0	26.0
$500 or more	6.8	8.2
Total	100.0	100.0
(Median paid)	($150)	($100)
Might want gun? (of those never owning)	17.6%	17.4%
How long to get gun? (those who want one)		
More than a week	61.4%	60.4%
Gang member?		
Current	21.1%	19.8%
Current or Past	44.3%	43.6%

Source. Author calculations from Drug Use Forecasting System data for 1996 and 1997 (ICPSR 9477).

those who never had a gun), fully 61% indicated that it would take them more than one week to get a gun.

The DUF survey reports in Chicago also confirm SV's field data about the limited involvement of drug dealers with gun sales. Only 40% of the arrestees interviewed in Chicago as part of the DUF system agree with the statement that 'if you want a gun, drug dealers will be able to get one for you'. Finally, DUF responses suggest that gang membership is quite common in Chicago as a whole, not just in the GB/WP neighbourhood studied by SV. Fully one-fifth of Chicago arrestees interviewed in DUF report being gang members at the time, while a total of 44% had ever been in a gang.

3.2.4. *City-specific factors*

The final type of explanation we consider for the thinness of the gun market studied by SV are city-specific factors. It appears that guns are somewhat more difficult for criminals to get in Chicago than other cities, although guns are surprisingly difficult for criminals to get in other cities as well. To the extent to which Chicago's gun market works less well than in other places, the most likely explanations are the city's low rate of household gun ownership and police emphasis on guns, rather than the city's ban on private possession of handguns.

Detailed ethnographic information is not available for cities other than Chicago. However the 1996–7 interviews of arrestees in 22 cities conducted by the Drug Use Forecasting (DUF) project included an addendum about gun ownership and use.

Making reliable inferences from the DUF data is made difficult by the fact that the study uses unrepresentative ('convenience') samples of arrestees in participating cities. In several cities, sample characteristics appear far out of line with what we learn from other sources. Nevertheless the DUF data provide one of the best (albeit imperfect) ways to compare gun markets across cities.

The top panel of Figure 1 shows that the fraction of arrestees interviewed in the Chicago DUF site who report that they ever owned a gun, 21% (measured along the vertical axis), is much lower than the mean and median values for DUF cities (31% and 33%, respectively). The Figure also highlights obvious measurement error – specifically, the rates of gun ownership reported by arrestees in two of the Texas cities in the sample, Dallas and San Antonio, are implausibly low. For that reason we should be cautious drawing strong inferences from the pattern of findings across individual DUF sites. But the overall finding that a minority of arrestees had ever owned a gun, and a still smaller percentage currently owned one, is plausible, since it is in line with the prevalence of gun use in crime. (We discuss this matter in greater detail below.)

Several other measures available from these DUF arrestee interviews also suggest that guns may be difficult for a high proportion of criminals to access across cities. Of the 18% of Chicago arrestees who had never owned a gun but thought they might want one someday, about 70% report that it would take them at least a week (which includes those who say they think they would be unable to get a gun at all), while only around 15% say they could get a gun within a day. In the other DUF sites about 60% of arrestees who had never owned a gun but might want one think getting a gun would require at least a week, while only around 20% think they could get a gun in a day

The potential importance of gun prevalence to transactions costs is illustrated in Figure 1. The top panel depicts a positive relationship between DUF reports of gun ownership by interviewed arrestees and the best available county-level proxy for household gun ownership, the fraction of suicides that involve firearms (FSS), with a slope for this regression relationship equal to +0.310 (SE = 0.16, p = 0.06).[31]

The bottom panel of Figure 1 shows the same basic pattern when we adjust for arrestee and offence characteristics for DUF respondents to account for differences across cities in the survey samples. We first regress the individual DUF responses about lifetime gun ownership against a detailed set of arrestee and offence characteristics.[32] We then replace our measure for actual DUF gun ownership on the vertical access with the DUF site means for the regression residuals, and continue to find a positive relationship between this measure and FSS (slope = +0.36, se = 0.15, p = 0.03).

To what extent does gun policy contribute to scarcity of guns to criminals? One intriguing pattern in Figure 1 is that the three DUF cities with the most stringent

[31] The US does not maintain administrative data on gun ownership and most surveys are not representative at the local level. The fraction of suicides committed with guns has been shown to be highly correlated with survey-based estimates of household gun ownership at the state or region level in both the cross section and within jurisdictions over time (Azrael *et al.*, 2004; Cook and Ludwig, 2006*a*).

[32] These characteristics include interactions between gender and race/ethnicity, age (using separate indicators for two-year age categories from 15 to 30, then 5 year age groups to age 60, with a catch-all category of 60 and over), indicators for whether the arrestee self-reports having used drugs in the past year, an indicator for self-reported sold drugs in past year, whether the respondent tested positive for various drugs in the urinalyses tests administered to arrestees as part of the DUF, and whether the respondent self-reports having ever used marijuana, cocaine or heroin. We also condition on a rich set of indicator variables for the specific criminal charge for which the arrestee was arrested.

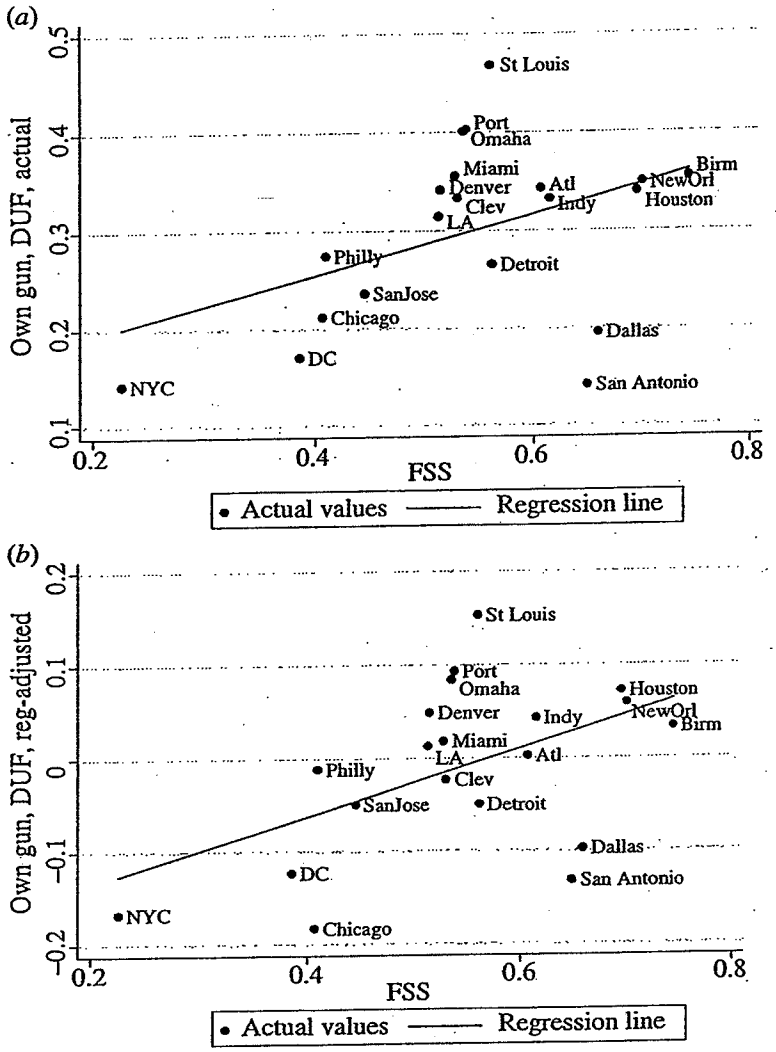

Fig. 1. *Lifetime Gun Ownership Rates Among Arrestees Interviewed in 22 Cities by DUF vs. Household Gun Ownership Rate Proxy* (fraction suicides with gun, FSS)

Notes. (a) Actual lifetime gun ownership reports by DUF arrestees. (b) Lifetime gun ownership reports by DUF arrestees, regression-adjusting for offender and offence characteristics.

restrictions on private handgun ownership (Chicago, New York City and Washington, DC) are all clustered together with low rates of household gun ownership and low rates of lifetime gun ownership reported by arrestees in the DUF study.

Figure 2 shows that Cook County, which is dominated by Chicago, experienced a temporary dip in our proxy for household gun ownership rates, FSS, following the city's handgun ban in 1982. (We present 5-year averages for FSS to reduce measurement error.) However a simple difference-in-difference estimate suggests this is not due to the ban, since from 1979–82 to 1983–7 the dip in FSS in Cook County (−4.3 percentage points) is actually smaller than in surrounding counties unaffected by the ordinance (−8.8 percentage points) or in the rest of Illinois (−6.0 points). Nor did household gun ownership rates decline in the District of Columbia following that city's handgun

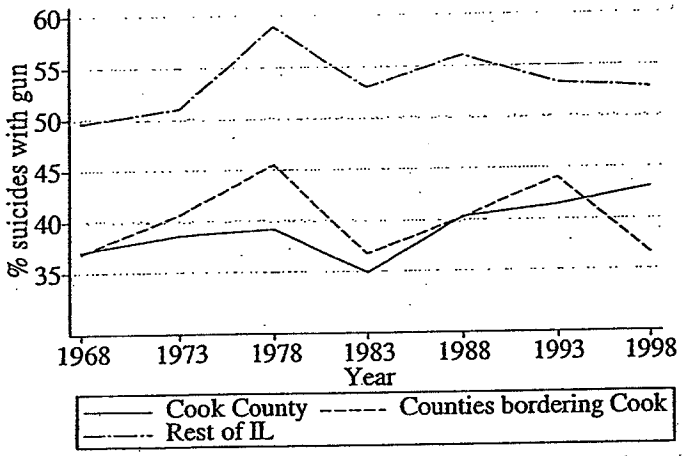

Fig. 2. *Trends in % Suicides with Guns (Proxy for Gun Ownership) for Cook County, Neighbouring Counties and the Rest of Illinois*

ban in 1978, either absolutely or compared to the nearby city of Baltimore over this period (Cook and Ludwig, 2006*b*, p. 710). The fact that Chicago and DC have low gun ownership rates may be more cause than consequence of restrictive local gun laws.

We should note that it is possible that handgun bans affect gun availability to criminals in ways other than by reducing household gun ownership rates, as might occur if owners are now less likely to resell their guns through unregulated secondary market transactions. Our FSS measure would not be informative about these types of effects, and more direct measures of gun access to criminals (such as those in the DUF) are not available for multiple points in time. Chicago's handgun ban may also have helped to reduce criminal access to guns by preventing the location of licensed gun dealers in high-crime neighbourhoods.

SV's interviews also point to another important policy – the Chicago Police Departments' (CPD) long-standing emphasis on taking guns off the street. Starting in the 1950s the CPD has emphasised a policy of 'making your presence felt', which involves getting patrolmen out into the community to interact with the public, make vehicle or other stops and search for guns as appropriate. At least during the 1950s and 1960s officers who confiscated illegal guns were provided with departmental citations.[33] During the period 1999–2003, the Chicago Police Department averaged over 10,000 firearms confiscations per year, far in excess of other large cities.[34]

Pushing in the other direction is the prevalence of gang membership. Table 4 shows that Chicago together with Los Angeles are outliers in the DUF sample with respect to gang activity, with around 20% of arrestees in these cities reporting membership in a gang at the time of their arrest, about eight times the median value in the DUF sample and about twice as high as the rate reported in the next-highest city, Birmingham. Chicago and LA continue to have unusually high rates of gang membership if we limit

[33] Personal communication of Philip Cook with Herman Goldstein, August 18, 2004.

[34] Chicago Police Department, *Annual Report: 2003 Year in Review*. By comparison, from 1999 to 2001 a total of around 12,000 guns of all types were confiscated each year in New York State as a whole (Council of the City of New York, Office of Communications, September 12, 2003, 'Committee Hears Testimony on Proposals to Stem the Flow of Illegal Guns Into the City').

Table 4

Gang Membership Among Arrestees in DUF Sample

	Full sample			Adult Males		
City	Sample (*N*)	Currently in gang	Currently or ever in gang	Sample (*N*)	Currently in gang	Currently or ever in gang
Chicago	2,216	20.5	44.9	2,077	20.3	44.2
Los Angeles	3,076	18.9	33.6	1,161	12.3	27.1
Birmingham	3,630	10.8	20.3	1,816	4.9	14.6
Denver	5,589	8.4	22.8	2,336	3.6	17.9
Phoenix	1,555	7.8	19.5	677	5.3	16.5
St. Louis	2,331	6.3	23.3	1,352	5.0	25.2
Indianapolis	4,313	5.4	18.3	1,836	5.3	21.5
Portland	495	5.3	13.5	239	1.3	10.0
San Antonio	4,040	5.1	17.1	2,127	3.0	14.2
San Jose	1,370	5.1	16.6	721	2.2	12.2
Cleveland	2,733	3.2	17.5	1,258	1.4	15.4
Omaha	2,750	2.8	13.8	1,936	3.5	16.2
Houston	2,360	2.5	12.3	1,505	3.3	14.6
Miami	1,360	2.1	9.8	1,299	2.0	9.5
Dallas	3,274	1.9	11.2	2,056	2.5	12.9
Fort Lauderdale	2,783	1.5	10.2	1,816	1.9	12.9
New York	2,189	1.1	11.1	1,456	1.2	14.1
Detroit	2,238	1.0	8.0	1,549	0.9	9.3
Philadelphia	2,371	0.8	10.9	1,452	1.3	14.7
New Orleans	2,838	0.7	6.4	1,887	1.1	7.3
Atlanta	7,285	0.7	6.5	5,511	0.7	7.3
Washington, DC	2,735	0.4	4.2	1,538	0.4	5.1
Median						

Source. DUF samples of arrestees, 1996 and 1997. (See Appendix for details.)

the sample to just adult males (last three columns of Table 4) or regression-adjust for a more elaborate set of arrestee and offence characteristics (not shown).

Consistent with SV's interview reports, among DUF arrestees in Chicago we find that the proportion who report ever having owned a gun is much higher for those in gangs compared to other respondents (30% vs. 19%). The same differential between gang and non-gang members is found in other DUF cities, although the absolute levels of gun ownership are much higher for both groups (58% and 29%).

4. Gun Availability and Gun Use in Crime

The previous Sections of the article present evidence of substantial transactions costs in the underground gun market in Chicago's South Side, in the rest of the city as well, and to some extent in other cities across the US. The key question for social welfare is whether the difficulty a criminal has in obtaining a gun affects what really matters for social welfare – gun use in crime. This question is not settled by evidence that only a fraction of all arrestees interviewed as part of the DUF have ever owned a gun, since it remains possible that the most serious criminals can get guns even though most have not. The results presented in this Section suggest that transactions costs in the underground gun market do have some impact on gun use in crime.

One indirect piece of evidence that gun market frictions affect gun use in crime is that gun use in violent crime is not the norm in the US, despite its deserved reputation for outstripping other Western nations in this regard. Cook (1976) finds that the value of items taken in completed robberies is over twice as high in gun robberies as for robberies with other weapons. Yet in a country with 200–250 million guns in private circulation, guns are used in only around 27% of personal robberies and 8% of serious assaults (Perkins, 2003, p. 2).[35] Gun use is far higher than in Britain, for example, but lower than what we would expect in a truly gun-saturated society.

Table 5 demonstrates that the patterns of gun involvement in crime across jurisdictions within the US is also consistent with the hypothesis that guns are used less often in crime in gun markets where the prevalence of guns is low (contributing to 'thinness' in the underground market). In particular we consider the relationship between the fraction of suicides involving firearms (FSS) and gun involvement in crime using data for the 200 counties with the largest populations in the US in 2000. We measure gun involvement in crime using data on the share of homicides and robberies with guns as reported in the UCR.[36] It should be noted that that UCR data are known to have considerable measurement error at the county level (Maltz, 1999). The data that describe gun involvement in these UCR crimes appear to be even noisier.

The first column of the Table shows the cross-sectional relationship between household gun ownership rates and gun involvement in crime: A one percentage point increase in FSS increases the share of homicides (top panel) and robberies (bottom panel) that involve guns by about one-third of a percentage point. We estimate this model pooling three years of data to reduce measurement error in our FSS proxy for household gun ownership rates (Cook and Ludwig, 2006*a*); given that FSS evolves slowly over time within areas, almost all of the variation will be cross-sectional. We focus on the years 1994–6 because these are the last years for which data on gun involvement in robbery are available for Cook County, Illinois, which contains the city of Chicago.

We initially try to account for possible confounding factors by conditioning on the percentage of the county that is urban and African-American (both powerful predictors of crime), the county's population (in thousands) and population squared to account for the well-documented relationship between crime *rates* and overall city size; see for example Blumstein (2000). To account further for unmeasured criminogenic factors we also condition on the county's burglary rate. The second column of Table 5 reveals that our analysis is not very sensitive to excluding these covariates. The third column of Table 5 shows our cross-section results are also not sensitive to whether we weight by county population or not in the analysis.[37]

[35] That guns are used in a small minority of violent crimes might be due in part to the deterrent effect of sentencing add-ons for gun use in violent crime, rather than the difficulty of accessing guns. Previous research yields mixed results on the deterrent effect of sentencing enhancements for gun use (McDowall *et al.* 1992; Marvell and Moody, 1995; Raphael and Ludwig, 2003).

[36] We do not consider the fraction of aggravated assaults that involve guns because this offence is more susceptible to differences across areas and over time in definitional problems about the distinction between aggravated and simple assault.

[37] We also find that all of the estimates shown in Table 5 are usually qualitatively similar when we focus on just the 100 or 50 largest counties in the US, although the estimates particularly for gun involvement in robbery are usually much less precisely estimated when we employ less data. We cannot focus on all counties in the US because the Vital Statistics system only makes county-level data on suicide mortality available for the larger counties.

Table 5

Relationship Between Household Gun Ownership Rates (Correlate of Market Frictions) with Gun Use in Crime in 200 Largest US Counties

% homicides with guns	'Cross-section' model (1)	'Cross-section' model (2)	'Cross-section' model (3)	Panel model (4)	Panel model (5)	Panel model (6)	Panel model (7)
Coefficient for HH gun ownership (FSS)	0.354** (0.041)	0.323** (0.042)	0.320** (0.050)	0.157** (0.036)	0.165** (0.036)	0.128** (0.041)	0.083** (0.036)
Covariates?	Y		Y	Y		Y	Y
Weight by population?	Y	Y		Y	Y		Y
County and year fixed effects?				Y	Y	Y	Y
County-specific linear trend?							Y
Sample years	94–96	94–96	94–96	79–99	79–99	79–99	79–99
N	557	572	557	3,924	3,987	3,924	3,924
R-squared	0.365	0.095	0.223	0.557	0.552	0.430	0.615
% robbery with guns							
Coefficient for HH gun ownership (FSS)	0.316** (0.028)	0.369** (0.033)	0.257** (0.029)	0.036 (0.028)	0.066** (0.031)	0.041** (0.019)	0.010 (0.017)
Covariates?	Y		Y	Y		Y	Y
Weight by population?	Y	Y		Y	Y		Y
County and year fixed effects?				Y	Y	Y	Y
County-specific linear trend?							Y
Sample years	94–96	94–96	94–96	79–99	79–99	79–99	79–99
N	538	541	538	3,620	3,634	3,620	3,620
R-squared	0.561	0.187	0.528	0.630	0.614	0.675	0.711

Notes. Parentheses contain robust standard errors that are adjusted to account for within-county correlation in error terms. ** = Statistically significant at 5% level. The analytic sample consists of data for the 200 largest counties in the US for the period 1979–99, where gun involvement in homicide and robbery is measured using data from the FBI's Uniform Crime Reporting system and our proxy for household gun ownership is measured using the fraction of suicides involving firearms collected from the Vital Statistics system. Our 'cross-section' estimator pools together data from three years to reduce measurement error in FSS (Cook and Ludwig, 2006*a*); we focus on 1994–6 for the cross-section because these are the last years for which data on gun involvement in robbery are available for Cook County, Illinois, the county that contains the city of Chicago. Covariates included in the regression models include percentage of county black, the county's burglary rate from the UCR, county population (in thousands) and population squared, and (in the cross-section models) percentage of the county living in an urban area in the 2000 census.

The last four columns of Table 5 show that the positive relationship between FSS and gun involvement in violent crime persists when we switch from cross-section to panel regression analysis. However, the magnitudes of the coefficient estimates are smaller. The fourth column shows that a 1 percentage point increase in FSS within a county leads to an increase in the share of homicides that involve guns equal to 0.16 percentage points (significant at the usual 5% cutoff), with an effect for gun involvement in robbery that is equal to 0.04 percentage points ($p = 0.2$).[38]

Of course without a clear source of exogenous identifying variation in household gun ownership rates, these estimates do not necessarily provide reliable estimates of the causal effects of household gun prevalence on gun use in crime. Much of the variation in household gun ownership across counties over time in the US over this period derives from a general convergence in gun prevalence between the traditionally high-gun regions in the South and West with the region where guns have traditionally been less common, the Northeast (Cook and Ludwig, 2006*a*). It is thus interesting that when we also condition on county-specific linear trends (last column of Table 5) the positive relationship between FSS and gun involvement in crime remains, at least for homicide. Furthermore, in a simple 20-year difference-in-difference test that captures the long-term convergence in gun prevalence between the historically high and low-gun areas, we again obtain a qualitatively similar estimate. All told, these results presented in Table 5 provide at least suggestive evidence that one likely source of transactions costs in the underground gun market – low household gun ownership rates – is related to gun use in crime.

Finally, it is interesting to consider how gun use in crime in Chicago compares to other places. Once we control for the basic set of county characteristics described above (race and urbanicity, population and the burglary rate) the proportions of homicides and robberies that involve guns were about 6 percentage points lower in 1994–6 in Cook County (dominated by Chicago) compared to the other 200 largest counties in the country.[39]

5. Discussion

Our findings about the presence of substantial transaction costs and price mark-ups in Chicago's underground gun market stand in contrast to conventional wisdom in the sociology and criminology literatures, which in the context of the US has emphasised the ease with which criminals can access guns in the informal market, as well as the inelasticity of demand by criminals. For example, Sheley and Wright (1998) stress the

[38] Bertrand *et al.* (2004) discuss the problems of incorrectly accounting for serial correlation in difference-in-differences analysis, many of which are relevant for our estimates since our key explanatory variable of interest (FSS) is also highly serially correlated. We present robust standard errors that allow for an arbitrary correlation in error terms over time within each county.

[39] This finding is quite similar when we do not control for the burglary rate. The difference is closer to 5 percentage points if we compare Cook County to just the 50 or 100 largest counties in the US The raw (unadjusted) differences in fraction homicide and robbery that involve guns for Cook County versus the 200 largest counties equal around +8 percentage points, although the regression-adjusted comparison seems like a more meaningful indicator, at least in part because of the documented relationship between city size and both the gun homicide rate and share of homicides that involve guns (Blumstein, 2000, pp. 37–8).

ease of access on the basis of a survey of 16–18-year-old high school students drawn from a convenience sample of 53 schools. Half reported that obtaining a gun would be 'little' or 'no' trouble if they desired one, while the other half of the sample indicated that getting a gun would be 'a lot of trouble' or 'impossible'. The vagueness of these adjectives (how would a youth who thought they could get a gun in a month respond?) leaves the authors free to impose their own spin. See also, for example, Jacobs (2002); Sheley and Wright (1995, pp. 148ff.); Wright and Rossi (1994, Chap. 12.). We believe that the difference is more a matter of interpretation and emphasis than outright contradiction. But there may remain some question whether our data are misleading.

Our study relies in large part on the unusually detailed interviews and field observations of Sudhir Venkatesh, who sought to capture information about prices, waiting times and other specific characteristics of market operation, rather than potentially ambiguous descriptions of people's perceptions of how markets work. Of course SV's fieldwork, like any survey work in this area, necessarily relies heavily on self-reports from people who regularly engage in criminal or anti-social activities, which in turn raises concerns about misreporting. However SV's interviews are quite consistent with the variety of other data sources that are available to us, including those that do not rely on self-reports by criminals.

So why does the gun market in the Chicago South Side neighbourhood studied by SV have such high transaction costs? We have argued for an explanation in terms of illegality and market thinness. Handguns have been illegal in Chicago since 1982, and more generally under the 1968 Gun Control Act youths and convicted criminals cannot possess firearms or obtain them directly from licensed gun dealers. Since gun transactions are illegal in Chicago, communication between potential buyers and sellers is made difficult, especially in a thin market.

But why is the underground gun market so thin? Even if there are relatively few buyers in this market, owing in part to the durability of guns, why do drug dealers and drug-selling gangs not diversify into the gun trade given that they already come into regular contact with most of the people who would be interested in having a gun and could presumably enter into the gun selling business at low marginal cost? We argue that police emphasis on guns is an important contributing factor, since gangs are reluctant to jeopardise the profits associated with the more lucrative drug trade. Gang leaders control a stash of guns and regulate their distribution and use by members with an eye to the gang's corporate objectives. Some youths report joining a gang to gain access to guns but that access is limited.

The underground gun market in the high-crime South Side Chicago neighbourhood studied by SV is not unique. Other data sources indicate that high transaction costs characterise the underground gun market elsewhere in Chicago and in some other large cities. These cross-city comparisons in transaction costs are limited by the fact that the arrestee samples are not representative of all criminals or even all arrestees in the participating cities; better data on criminal reports about underground gun markets across cities should be a priority for future research. Cross-national comparisons of underground markets would also be of great interest for tracing out the effects of gun prevalence and regulations on transactions prices and costs.

One policy implication of our findings is that law enforcement efforts targeted at reducing gun availability at the street level seem promising.[40] If 'thinness begets thinness' in markets with non-trivial search costs, as suggested by Diamond (1982), then the impact of stepped-up enforcement activities may produce multiplier effects. Of course this virtuous cycle becomes vicious if reversed, which is of some concern given recent cuts in federal funding for law enforcement in general and for gun-oriented activities in particular (Donohue, 2004; Lichtblau, 2004). Our results also provide some support for police strategies that hold the gang as a whole accountable for gun possession or misuse by individual members, thus creating an incentive for gang leaders to regulate gun access among members. This collective-deterrence strategy seeks to leverage gang cohesion together with the economic motivations of gang leaders and was a key feature of Boston's Operation Ceasefire (Braga *et al.*, 2001; Piehl *et al.*, 2003).

While the public safety gains from local restrictions on gun ownership may be modest, broad efforts that could reduce the rate at which households own guns have promise. In principle widespread household gun ownership can have positive as well as negative externalities, by generating a general deterrent threat to criminal predation (Lott, 2000). However in practice weapon choice by violent criminals is positively correlated with prevalence of gun ownership. The best evidence indicates that an increase in gun prevalence results in more homicides, burglaries and perhaps suicides as well (Duggan, 2001, 2003; Cook and Ludwig, 2003, 2006*a*). The dollar value of the negative externality may be considerable – in one estimate, $600 per year per gun-owning household (Cook and Ludwig, 2006*a*). Increased sales taxes on guns and ammunition, or even licensing systems with annual permit fees for gun ownership, may further contribute to market thinness and increase transaction costs to criminals.

Data Appendix

Our analysis of Chicago's underground gun market draws on data from 6 main sources: intensive field interviews and observations conducted in high-crime neighbourhoods on the city's South Side by one member of our team (Sudhir Venkatesh), discussed in the text; data on crime gun traces from Chicago collected by the Bureau of Alcohol, Tobacco and Firearms (ATF); a census of all arrests made in the state of Illinois from 1990 to 2001 recorded by the Illinois State Police (ISP); city- and state-level data on crime rates and gun ownership from the FBI's Uniform Crime Report (UCR) system; the census of all death certificates in the US maintained as part of the Vital Statistics (VS) system; and data from the Drug Use Forecasting (DUF) system of arrestee interviews, specifically data from the 1996–7 gun addendum to DUF. In what follows we discuss each of the last 5 sources in turn.

[40] The possibility of buy-and-bust or sell-and-bust operations by undercover police officers could further erode trust in the underground gun market and increase the information requirements for successful exchange. Similarly, offering rewards for information about gun sellers and possessors, either in the form of cash or leniency for the informant's own legal difficulties, should further inhibit the flow of information in the underground market, which consists primarily of word-of-mouth within social networks. Providing informants with incentives might also reduce the value of guns to youth for social status, since public display of a firearm would now entail additional legal risk. This type of reward programme has been employed in New York but has to date not been rigorously evaluated (Golden and Almo, 2004). In Boston, law enforcement efforts focusing on the illegal diversion of handguns from retail sources reduced the prevalence of new handguns recovered in crime (Braga and Pierce, 2005).

A. Crime Gun Traces

We draw on data from the Bureau of Alcohol, Tobacco and Firearms (ATF) on crime guns confiscated by the Chicago Police Department between 1999 and 2003 submitted to ATF for tracing. By using serial numbers that are unique to a given gun (conditional on manufacturer), ATF tries to identify the first legal purchaser of the firearm by accessing the commercial transactions records maintained by law by dealers, distributors and manufacturers.

Between 1999 and 2003 the Chicago PD submitted all confiscated crime guns to the ATF for trace requests, as part of ATF's Youth Crime Gun Intervention Initiative (YCGII). A total of 43,413 guns were submitted for tracing over this period, of which 23,237 (53.5%) were successfully traced. This tracing success rate is quite similar for our study area of GB/WP and for the rest of Chicago. This tracing success rate is also quite similar to national data for 1999 (54%). Nationwide in 1999, 10% of guns could not be traced because the guns were too old, while others could not be traced because of problems with the serial number or errors in the paperwork and the like. It is important to note that even when guns are successfully traced this process can only identify the first purchaser from a FFL, and provides no information on subsequent transactions in the underground distribution chain; see Cook and Braga (2003) for more on the trace process and limitations of the ATF data.

B. Arrest Data

Our arrest data consists of a census of all arrests made in the state of Illinois from 1990 to 2001 reported to the ISP. These data provide information on the date of each arrest, the arresting agency (so that we can distinguish arrests in Chicago versus elsewhere in the state, but cannot determine where within Chicago a crime was committed), all criminal charges filed against the suspect as part of the arrest, and (albeit with some additional measurement error) the disposition of these charges.

C. UCR Crime Data

To measure gun involvement in crime in Chicago and other cities we use standard data from the FBI's Uniform Crime Report (UCR) system. These data capture crimes voluntarily reported by victims to the police and then voluntarily submitted by police to the FBI. Problems with the UCR data in terms of variation across areas and time in victim reporting to police and police reporting to the FBI are well known; see for example Maltz (1999). However the UCR data are generally believed to be more reliable for more-serious than for less-serious offences.

D. Vital Statistics

To measure gun ownership rates we use data from the Vital Statistics (VS) census of all deaths to construct a measure of the fraction of suicides within a jurisdiction that is committed with firearms (firearm suicides divided by suicides, or FSS). While the VS is generally thought to capture most deaths that occur in the US, one source of measurement error comes from the fact that coroners or medical examiners report the cause of death on the death certificate, which may disagree with the results of subsequent police investigations and more generally can be subject to some ambiguity. (For example, when the beat-era writer William S. Borroughs famously tried to shoot an apple off of his wife's head but missed and killed her instead the medical examiner handling the case may plausibly have had some doubts about whether to classify this as an accident, homicide or, from the perspective of Borroughs' wife, suicide at least in a probabilistic sense). The fraction of suicides that involve a firearm has been shown to be strongly correlated

with survey-based measures of household gun ownership rates in the cross-section (Azrael *et al.*, 2004) and within states or regions over time as well (Cook and Ludwig, 2006*a*).

E. Drug Use Forecasting Data

The Drug Use Forecasting (DUF) system was administered by the US Department of Justice and has collected survey information on arrestees from 1987 through 1997. (The successor to the DUF is called the ADAM, which was itself recently discontinued.) Usually the sample includes arrestees from 24 different US cities, although sites vary somewhat from year to year. Within participating cities, first a set of selected booking facilities are selected and then arrestees within these booking facilities are asked to be interviewed. In Chicago and 10 other DUF sites (Atlanta, Cleveland, Denver, Detroit, Houston, Kansas City, Omaha, Philadelphia, St. Louis and Washington, DC) the catchment area for selecting booking facilities was the city. In the other DUF sites (Dallas, Ft. Lauderdale, Indianapolis, Miami, New Orleans, Manhattan, Phoenix, Portland, San Antonio, and San Jose) booking facilities were selected from catchment areas defined by borough, county or parish. Each site attempted to collect data from around 225 adult males per quarter and 100 adult females. Some (but not all) sites also attempted to collect data from 100 juvenile males and 100 juvenile females.

Typically around 90% of arrestees asked to participate agreed to answer survey questions about drug use and involvement with crime, while 80% agreed to provide urine samples for drug testing. These sources of data are complemented by administrative data from police arrest records regarding the arrestee's demographics (age, race) and the crime for which the person was arrested.

In 1995, 1996 and 1997 the DUF survey included a gun addendum that asked survey respondents to report on their experiences with guns, including ownership, gun use in the most recent crime, acquisitions, victimisation experiences and general availability in the community. Because these data were collected for only the second half of 1995 we focus our analysis on data from 1996 and 1997. The DUF data used in our analyses are restricted-use and obtained under a special agreement with ICPSR. For more information about the dataset see the documentation for ICPSR study number 9477.

Table A1

Type of Crimes Leading to Gun Confiscation in Chicago, by Age of Possessor

	Grand Boulevard/Wash Park			Other Chicago Neighbourhoods		
Recovery crime type	Juvenile (<18) %	Youth (18–24) %	Adult (25+) %	Juvenile (<18) %	Youth (18–24) %	Adult (25+) %
Firearms offence	50.0	39.4	37.0	57.8	51.1	51.0
Narcotics crime	43.6	50.6	49.6	24.8	33.8	33.1
Violent crime	5.1	8.3	11.1	13.7	11.6	10.8
Other crime	1.3	1.7	2.3	3.6	3.6	5.0
Total	100.0	100.0	100.0	100.0	100.0	100.0
(Number)	(78)	(348)	(395)	(548)	(2,432)	(3,252)

Source. See Table 1

Violent crime = homicide, robbery, assaults, kidnapping, sex crimes (i.e. rape/assault); Narcotics crime = drug offences not distinguished by possession, sales, or type of drug; Other crime = burglary, theft, fraud, explosives, vice crimes, integrity crimes, etc.; Firearms offence = illegal carrying or possession of a firearm (carrying and possession are not distinguished in the data).

Table A2

Source States of Guns Confiscated in Chicago

	Grand Blvd/Wash Park (%)	Rest of Chicago (%)
State		
Illinois	46.2	48.3
Indiana	11.5	11.6
Mississippi	10.9	9.6
Wisconsin	3.4	2.8
Georgia	2.4	1.8
Arkansas	2.3	1.8
Kentucky	2.3	2.5
Alabama	2.0	1.8
Texas	1.9	2.0
Tennessee	1.7	2.2
Other	15.4	15.6
Total	100.0	100.0

Source. See Table 1.

Table A3

Type and Calibre of Guns Confiscated in Chicago

	Grand Blvd/Wash Park (%)	Rest of Chicago (%)
Number	4,483	38,930
Type of firearm		
Semiautomatic Pistol	49.0	50.2
Revolver	34.6	33.0
Shotgun	7.7	7.9
Rifle	7.2	7.0
Derringer	1.5	1.6
Other	0.1	0.2
Total	100.0	100.0
Caliber/Gauge		
9 mm	18.7	18.0
.38	15.9	15.5
.22	11.4	12.9
.380	10.4	11.2
.32	7.5	6.7
.25	7.2	8.4
.357	6.9	6.5
.45	5.5	4.7
12 gauge	5.4	5.7
.40	2.5	2.1
Other	8.7	8.3
Total	100.0	100.0

Source. Authors' calculations of guns submitted by Chicago Police Department to ATF for tracing in 1999–2003 (see Appendix).

Table A4

Retail Price and Age of Guns Confiscated in Chicago

	Grand Blvd/Wash Park			Rest of Chicago		
	Juveniles (under 18)	Youth (18–24)	Adults (25+)	Juveniles (under 18)	Youth (18–24)	Adults (25+)
Number	72	301	293	484	2,055	2,525
Retail Price						
Mean	$294	$312	$326	$297	$316	$350
Median	$173	$311	$400	$269	$303	$410
Price Distrib	%	%	%	%	%	%
<$150	43.1	28.9	30.0	35.5	30.5	23.7
$150–300	11.1	20.9	16.0	17.9	19.4	17.2
$300–450	15.2	23.5	23.5	19.4	21.7	25.0
$450–600	29.2	24.9	29.4	26.2	26.3	31.2
>$600	1.3	1.7	1.0	0.8	2.1	2.9
Total	100.0	100.0	100.0	100.0	100.0	100.0
Age of gun	%	%	%	%	%	%
< = 3 years	18.2	22.3	25.6	18.4	25.7	24.0
4–7 years	27.3	19.8	20.2	23.2	20.4	23.3
8–12 years	10.9	17.8	15.5	17.6	17.1	16.7
13–19 years	10.9	11.6	6.2	10.1	11.2	9.1
20 + years	32.7	28.5	32.5	30.7	25.6	26.9
Total	100.0	100.0	100.0	100.0	100.0	100.0

Source. See Table 1. 'Retail price' is estimated price of gun sold new at retail from Blue Book figures, and does not account for actual condition of gun, which is not available in the ATF data.

Duke University and NBER
University of Chicago and NBER
Columbia University
Harvard University

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EXHIBIT 11

Submitted Statement for Acting Deputy Superintendent Ernest Brown
Chicago Handgun Ordinance
June 29, 2010

Good afternoon Chairman Beale, Committee members and Aldermen. My name is Ernest Brown; I'm the Acting Deputy Superintendent of the Bureau of Patrol for the Chicago Police Department.

I'd like to discuss with you the importance of the City continuing to prohibit assault weapons in addition to prohibiting carrying firearms in public.

Putting more guns on the street is not the answer to making the pubic, or police any safer. Whether it is traffic enforcement, responding to in-progress calls or domestic calls, each time someone other than the police officer is armed, it raises the level of danger for the officer.

The risk of misuse or intimidation is very high when guns are carried in public. Intimidation by gangs in particular would increase if gang members could lawfully carry arms in public.

In addition, assault weapons remain a very real problem for law enforcement. Just last February on the Southeast side of Chicago, three teenagers, aged 14, 15, and 17, were shot and killed with an assault weapon, an AK-47, in the middle of the afternoon. The gunman has been captured and is awaiting trial, but we'll never replace the lives of these 3 children, and the lives of their families have been changed forever (Chicago Police Department).

A year before that, a couple of our officers from the 22nd District were responding to a call of a "man with a gun" and, as they approached, they were immediately attacked by a man, who unbeknownst to them had just shot and killed his employer.

He stood in the street armed with an assault weapon, and fired at the responding officers. Pinned down in their car by the firepower of the assault weapon, they were forced to return fire from the safety of their vehicle. Luckily, our officers survived, and the man was captured (Chicago Police Department).

And it wasn't long ago that officers from our gang unit intercepted street gang members that were on their way to execute a rival gang member on the West Side. As the officers curbed the car that was going to make the hit, the street gang members inside the car began a shootout with Police. One of the weapons they used was an AK-47. Two of the street gang members were killed in the shootout (Chicago Police Department).

Finally, it was just 4 years ago that 14 year old Starkeshia Reed was shot and killed with an assault weapon, while she was in her own home, getting ready for school (Chicago Police Department).

These stories have become too commonplace. Of the 10,000 guns we recover each year, approximately 350 of them are assault weapons. Since the Federal Assault Weapon Ban ended in September 2004, we have confiscated more than 1,800 assault weapons.

The International Association of Chiefs of Police also joins us in the concern for the dangers of assault weapons. The IACP has lobbied for years for the reinstatement of the Federal Assault Weapons Ban (2003 IACP Resolutions, 2008 IACP Resolutions).

Assault weapons, by their very nature, are hazardous to the general public and appropriate for use only under certain conditions. Assault weapons are not designed for the purpose of self-defense in the home and are not necessary for that purpose.

Assault weapons are a class of semi-automatic firearms designed with military features to allow for rapid and accurate spray firing. They are not designed for "sport;" they are designed to kill humans quickly and efficiently.

Fifty-caliber sniper rifles should also be specifically banned. These weapons are also used by the military for their long range accuracy and massive power. These are not the types of weapons that are used for sport, or that should be in the possession of anyone other than law enforcement or the military.

Allowing easy access to highly lethal, military-style weapons by individuals who pose a danger to us, such as terrorists and other felons, threatens the safety of our police officers, our families and our communities.

Police officers are at particular risk from these weapons because of their high firepower and ability to penetrate body armor. Recognizing this danger, we have authorized specially-trained officers to carry assault weapons, in order to match the firepower of the assault weapons that criminals are using.

It is for these reasons that we will continue to push for an assault weapons ban, and why it is appropriate in our ordinance.

Thank you.

###

References Cited

Chicago Police Department

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EXHIBIT 12

City Council Committee on Police and Fire
July 1, 2010

On June 18 and June 29, this Committee held hearings on gun violence and took testimony from experts on possible policies to reduce such violence in our city. These hearings contemplated the impact of the United States Supreme Court's *McDonald* decision on the City's handgun ban, and on future policies the City can enact to address gun violence.

More than 30 people testified at these hearings. We've heard from numerous experts on gun violence, from the Corporation Counsel and other legal experts, from the Superintendent of the Chicago Police Department and other CPD officers, from business owners, from leaders in our faith and community organizations, from those who have lost loved ones to gun violence, and even from some of the plaintiffs in the *McDonald* case.

Among the experts that testified were:

- Robyn Thomas, the Executive Director of Legal Community Against Violence
- David Hemenway, from the Harvard School of Public Health
- Thom Mannard, Executive Director of the Illinois Council Against Handgun Violence
- Tom VandenBerk, President and CEO of the Uhlich Children's Advantage Network
- Mark Walsh, the Executive Director of the Illinois Campaign to Prevent Gun Violence
- Dr. Marie Crandall, from the Trauma Unit at Northwestern Medical Faculty Foundation
- Claude Robinson, the Executive Vice President at the Uhlich Children's Advantage Network
- Annette Holt, from Purpose Over Pain
- Juliet Leftwich, the Legal Director of Legal Community Against Violence, and
- Daniel Webster, Co-Director of the Johns Hopkins Center for Gun Policy and Research

I would also like to acknowledge that one of the experts we invited, Dr. Jens Ludwig, a Professor of Social Service Administration, Law, and Public Policy at the University of Chicago's Crime Lab, was unable to speak but prepared testimony that was distributed to the members of the Committee on June 29. This testimony sets forth Dr. Ludwig's research on the costs of gun violence in Chicago. We've distributed this testimony to the Committee members again today, and I would like to note that it is on the record, and to thank Dr. Ludwig.

During our prior hearings, we also distributed and placed on the record the testimony from several of our other experts, as well as references from their work and numerous other studies on

the causes and effects of gun violence, and recommendations on what we can do to address this problem.

From the evidence that was presented at these hearings, the Committee can make the following findings:

1. Chicago, like other big cities, has a serious problem of gun violence. The total economic and social costs of gun violence in Chicago are substantial. Gun violence severely impacts Chicago's criminal justice and health care systems. Gun violence foments fear in Chicago communities, which can harm property values and drive residents to flee neighborhoods.

2. An increase in the number of guns in circulation contributes to an increase in the number of incidents of gun violence. The presence of a gun makes a crime more lethal than it would be if a gun were not present.

3. Handguns, to an extreme degree, disproportionately contribute to gun violence and death in Chicago.

4. A strong permitting system for firearm owners is vital. Persons who commit violent crimes or threaten public safety by repeated substance abuse should not be allowed to possess firearms. Fingerprinting is necessary to identify ineligible persons. Public safety requires that firearm owners complete a certified firearms training course that includes both classroom instruction and range training.

5. A vigorous firearms registration system is necessary. Registration gives law enforcement essential information about firearms ownership, allows first responders to determine in advance whether individuals may have firearms, facilitates the return of lost or stolen firearms to their rightful owners, permits officers to seize unregistered weapons, and permits officers to charge an individual with a crime if he or she is in possession of an unregistered firearm. Requiring owners to confirm registration information annually is necessary to further these ends.

6. Shootings in the home are a major cause of death, particularly of children and minors. Requiring owners to secure or store their firearms when minors are present, or likely to be present, can reduce the number of accidental and intentional youth firearms injuries, including youth suicides. Further, limiting the number of firearms in the home that may be kept in an operable condition even when no minor is present reduces the risk of firearms injury in the home.

7. Requiring owners to quickly notify law enforcement of the loss, theft, or destruction of their firearm aides law enforcement in reducing illegal gun trafficking, and in identifying and prosecuting gun traffickers. Requiring owners to report the loss or theft when they know or should have known of the loss or theft enhances these purposes. A notification requirement also assists law enforcement in returning firearms to their lawful owners.

8. Limiting the number of handguns in circulation is essential to public safety. Limiting registration of handguns to one per person per month will help limit handgun injuries and crimes, as well as illegal handgun trafficking and straw purchasing.

9. The carrying of firearms in public should be prohibited. In a dense, urban environment like Chicago, public carrying presents a high risk that everyday interpersonal conflicts will result in gun injury. Carrying allows carriers, particularly gang members, to intimidate others. Carrying also increases the threat to law enforcement when responding to calls for assistance.

10. The public safety requires a ban on assault weapons. Assault weapons are not designed for the purpose of self-defense in the home and are not necessary for that purpose, nor are they designed for sport. They are military-style weapons and pose a particularly dangerous threat to law enforcement, as well as to civilians.

11. "Junk guns" – cheap, low-quality handguns that are prone to misfire, fire when dropped, or otherwise malfunction, and that are usually easily concealed – are disproportionately associated with criminal misuse, especially by juveniles and young adults. Banning junk guns will reduce accidents and the risk of criminal abuse.

12. Gun dealers in the City present a risk of firearms flowing quickly into the community and into the hands of criminals, through theft or illegal trafficking, or even through legitimate purchases. Further, there are many federally-licensed gun dealers close to Chicago from which Chicago residents may purchase firearms.

The Committee understands and respects the constitutional rights of Chicago residents. The Committee is mindful of the rulings of the United States Supreme Court, and of the protections conferred by the Second Amendment. The policies that will be recommended by the Committee and contained in the Responsible Gun Ownership Ordinance are in full accord with those rights and protections and are necessary for the ongoing protection of the public welfare and the safety of the residents of Chicago.

EXHIBIT 13

IN THE UNITED STATES DISTRICT COURT
FOR THE NORTHERN DISTRICT OF ILLINOIS
EASTERN DIVISION

SHAWN GOWDER,	)	
	)	
Plaintiff,	)	
	)	
v.	)	
	)	No. 11 CV 1304
CITY OF CHICAGO, a municipal corporation, the CITY OF CHICAGO DEPARTMENT OF ADMINISTRATIVE HEARINGS, MUNICIPAL HEARINGS DIVISION, SCOTT V. BRUNER, Director of the City of Chicago Department of Administrative Hearings, the CITY OF CHICAGO DEPARTMENT OF POLICE, and JODY P. WEIS, Superintendent of the City of Chicago Department of Police,	)	JUDGE DER-YEGHIAYAN
	)	
Defendants.	)	

DEFENDANTS' NOTICE OF DEPOSITION

TO: Stephen Kolodziej
Brenner Ford Monroe & Scott Ltd.
33 N. Dearborn St., Suite 300
Chicago, IL 60602

PLEASE TAKE NOTICE that pursuant to Fed. R. Civ. P. 30, Defendant City of Chicago will take the deposition of the following individual before a notary public or any officer authorized to administer oaths on the dates and times specified below:

Name of Deponent	**Date and Time**
Shawn Gowder	June 28, 2011 at 9:30 a.m.

The deposition will take place at the City of Chicago, Department of Law, 30 North LaSalle Street, Suite 1230, Chicago, Illinois, 60602 and will continue from day to day until completed.

DATED: May 16, 2011

MARA S. GEORGES,
Corporation Counsel
City of Chicago

By: _____
One of the attorneys for Defendant

Michael A. Forti
Mardell Nereim
William Macy Aguiar
Rebecca Alfert Hirsch
Andrew W. Worseck
City of Chicago, Department of Law
Constitutional and Commercial Litigation Division
30 North LaSalle Street, Suite 1230
Chicago, Illinois 60602
(312) 742-0260
Attorney No. 90909

CERTIFICATE OF SERVICE

The undersigned, an attorney of record for the Defendants, hereby certifies that on May 16, 2011, she served a copy of the foregoing **Defendants' Notice of Deposition** on the party listed below by electronic mail and U.S. Mail, postage prepaid, before 5:00 p.m.

Stephen Kolodziej
Brenner Ford Monroe & Scott Ltd.
33 N. Dearborn St., Suite 300
Chicago, IL 60602
Tel: (312) 781-1970
Fax:(312)781-9202
Email: skolodziej@brennerlawfirm.com

EXHIBIT 14

IN THE UNITED STATES DISTRICT COURT
NORTHERN DISTRICT OF ILLINOIS
EASTERN DIVISION

SHAWN GOWDER,	) Docket No. 11 C 1304
	)
Plaintiff,	)
	) Chicago, Illinois
vs.	) October 18, 2011
	) 9:00 o'clock a.m.
CITY OF CHICAGO, a muncipal corporation, et al.,	)
	)
Defendants.	)

TRANSCRIPT OF PROCEEDINGS - Motion
BEFORE THE HONORABLE SAMUEL DER-YEGHIAYAN

APPEARANCES:

For the Plaintiff: FORD & BRITTON PC
BY: MR. STEPHEN KOLODZIEJ
33 North Dearborn Street
Suite 300
Chicago, Illinois 60602

For the Defendants: CITY OF CHICAGO
BY: MS. REBECCA ALFERT HIRSCH
30 North LaSalle Street
Suite 1230
Chicago, Illinois 60602

LAURA LACIEN, CSR, RMR, FCRR, CRR
Official Court Reporter
219 South Dearborn Street, Suite 1902
Chicago, Illinois 60604
(312) 408-5032

that; right.

MR. KOLODZIEJ: -- although there's almost no discussion of this. But my question, Judge, is with -- are you allowing them then to take the plaintiff's deposition and no further because my concern is we're going to --

THE COURT: I want to know what you'll get out of the plaintiff's deposition, why would you need it because there is an ordinance. It talks -- the ordinance doesn't talk about plaintiff. It talks about individuals that fall into a category. It has nothing to do with what the plaintiff's name is, what his other backgrounds are, what his skin color is, what his eye color is. It doesn't matter. It applies to everybody that falls into a category. And based on what the government had, they denied him the permit.

So you cannot now go expand beyond to say let me do a fishing expedition and find out, okay, did you murder somebody, ah-hah, I would have denied you because now you have admitted that you murdered somebody. It's not going to happen.

So unless you persuade me that plaintiff's deposition is necessary based on the facts and claims in this case, plaintiff's deposition is not going to take place, okay.

On the other issues, I will grant that to you. You could do your discovery.

there pending. Okay.

MR. KOLODZIEJ: All right.

MS. HIRSCH: Thank you.

MR. KOLODZIEJ: And I'm sorry, the new status date was April --

THE COURT: April 18th.

MR. KOLODZIEJ: And that's at 9:00?

THE COURT: 9:00 o'clock.

MR. KOLODZIEJ: And the order will reflect, though, that the plaintiffs -- the defendants are not allowed to take the plaintiff's deposition?

THE COURT: I'm just telling them that right now.

MR. KOLODZIEJ: Okay.

THE COURT: It's in the record. It's on the record.

MR. KOLODZIEJ: I appreciate that.

MS. HIRSCH: Thank you, your Honor.

MR. KOLODZIEJ: All right. Thank you very much.

MS. HIRSCH: Thank you.

THE COURT: And once again, on the issue of conviction, please jointly submit something to me in the next 30 days or less. I need to know exactly what case vacated it or changed the law or whatever based on case law and then what's the procedure afterwards. I mean, when something is vacated, to me it's vacated. Did they then recharge the

person or they revived the old arraignment or charges, what happened.

You know, I know that the docket is like kind of technical, you know, there's letters, dots, numbers. You guys are the experts maybe or you could find out from your systems what happened and then you could have a stipulated joint order, joint document saying that these -- this is what happened relating to the conviction.

MR. KOLODZIEJ: And you'd like that within 30 days?

THE COURT: If you can. I mean, right now we have some time. Yeah.

MR. KOLODZIEJ: Okay. All right. Thank you.

MS. HIRSCH: Thank you, your Honor.

THE COURT: Thank you.

(Which concluded the proceedings in the above-entitled matter.)

C E R T I F I C A T E

I hereby certify that the foregoing is a transcript of proceedings before the Honorable Samuel Der-Yeghiayan on October 18, 2011.

/s/Laura LaCien

_____ April 27, 2012
Laura LaCien Date
Official Court Reporter

EXHIBIT 15

05/05/2004

CRIMINAL HISTORY DATA

Arrest

DCN: CB9915800 Date of Arrest: 01/10/1995
Name: GOWDER, SHAWN D Date of Birth:

Residence:

Arresting Agency: CHICAGO POLICE DEPARTMENT NCIC: ILCPD0000
Agency Case Number: Officer Badge Number: Photo Available: Yes

Arrest Charges

Count	Statute Citation	Literal Description	Inchoate Code	Class
1	720 ILCS 5.0/24-1-A-10	CARRY/POSS FIREARM IN PUBLIC	O	4

Arrest Type: Date of Offense: 01/10/1995

States Attorney Section

Filing Decision: DIRECT FILED WITH COURT Decision Date:

Count	Statute Citation	Literal Description	Inchoate Code	Class
1	720 ILCS 5.0/24-1-A-10	CARRY/POSS FIREARM IN PUBLIC	O	4

Agency Name: COOK COUNTY STATE'S ATTORNEY NCIC: IL016013A

Court Charges/Disposition

Count	Statute Citation	Literal Description	Inchoate Code	Class
1	720 ILCS 5.0/24-1-A-10	CARRY/POSS FIREARM IN PUBLIC	O	A

Disposition: GUILTY Disposition Date: 08/21/1995
Case Number: 95CR0257101
Agency Name: COOK COUNTY CIRCUIT COURT NCIC: IL016025J

Status	Sentence	Fine Amount	Date
SENTENCED TO	1 YEAR(S) PROBATION		08/21/1995

END OF RECORD

STATE USE ONLY

WARNING:RELEASE OF THIS INFORMATION TO UNAUTHORIZED INDIVIDUALS OR AGENCIES OR MISUSE IS PROHIBITED BY FEDERAL LAW

TITLE 42 USC 3789G PERTAINING TO CRIMINAL HISTORY INFORMATION

R25

CHICAGO POLICE DEPARTMENT

3510 South Michigan Avenue/Chicago, Illinois
60653
Identification Section

CRIMINAL HISTORY REPORT

CPD-31903C (REV. 7/04)

GOWDER, SHAWN D
IR # **1067696**
SID #
FBI # **794923VA3**
IDOC #

EXHIBIT
tabbies
Grp 7

CPD photo

MALE
BLACK
6'00"
225 lbs
EYES : BRO
HAIR : BLK
HAIR STYLE : SHORT
COMPLEXION : DRK

Current Arrest Information:

Date of Birth:
Age: 38 years
Place of Birth: ILLINOIS
SSN #:
Drivers License #:
Drivers Lic. State: ILLINOIS
Scars, Marks &Tattoos:

Key Historical Identifiers:

Alias or AKA used	Date Used	Dates of Birth Used	Social Security Numbers Used
GOWDER, SHAWN	03-MAY-2004		
GOWDER, SHAWN D	10-JAN-1995		
GOWDER, SHAWN D	18-DEC-1993		Not Available

Criminal Justice Summary: Total arrests: **3** (0 Felony, 2 Misdemeanor) Total convictions: **0**

ARREST

Arrest Name: **GOWDER, SHAWN**
Date of Birth:
DCN or CB: **015809250**
Officer: **MINICH**

Arrest Date: **03-MAY-2004**
Arrest Address:
Residence:
Officer Badge#: **3732**

Holding Facility: **CPD - DISTRICT 008**
ICAGO, IL 60632
HICAGO, IL 60621
Arresting Agency: **CPD**

Count	Class	Type	Statute	Arrest Charge Description	Inchoate
[1]	C	M	720 ILCS 5.0/12-1-A	Assault - Simple	

COURT CHARGES/DISPOSITION

Statute	Charge	Class	Case#
720-5/12-1-A	ASSAULT - SIMPLE	1	20041227684

Disposition: **STRICKEN FROM DOCKET WITH LEAVE TO REINSTATE** *Disposition Date:* **12-OCT-2004**
Sentence: **NO SENTENCE 000 YEARS 00 MONTHS 000 DAYS** *Sentence Date:*

R26

ARREST

Arrest Name: **GOWDER, SHAWN D** Arrest Date: **10-JAN-1995** Holding Facility:
Date of Birth: Arrest Address:
DCN or CB: Residence: **60621-0000**
Officer: **MORGAN** Officer Badge#: **9939** Arresting Agency: **CPD**

Count	Class	Type	Statute	Arrest Charge Description	Inchoate
[1]	L		POSSS FIREARM/PERSON	Possession Of Firearm On Person	

COURT CHARGES/DISPOSITION

Statute	Charge	Class	Case#
720-5/24-1(A)(10)1	CARRY/POSSES FIREARM IN P	F	95CR0257101

Disposition: **PROBATION - TERMINATED - SATISFACTORY** *Disposition Date:* **07-AUG-1996**
Sentence: **NO SENTENCE 000 YEARS 00 MONTHS 000 DAYS** *Sentence Date:*

Disposition: **SENTENCED/PROBATION –** *Disposition Date:* **21-AUG-1995**
Sentence: **PROBATION 1 YEARS 0 MONTHS 0 DAYS** *Sentence Date:* **21-AUG-1995**

ARREST

Arrest Name: **GOWDER, SHAWN D** Arrest Date: **18-DEC-1993** Holding Facility:
Date of Birth: Arrest Address:
DCN or CB: Residence:
Officer: Officer Badge#: Arresting Agency:

Count	Class	Type	Statute	Arrest Charge Description	Inchoate
[1]	A	M	RESIST	Resisting Arrest	

COURT CHARGES/DISPOSITION

Statute	Charge	Class	Case#
38 31-3	OBSTR SERV OF PROCES	M	93140017801

Disposition: **STRICKEN FROM DOCKET WITH LEAVE TO REINSTATE** *Disposition Date:* **11-JAN-1994**
Sentence: **NO SENTENCE 000 YEARS 00 MONTHS 000 DAYS** *Sentence Date:*

End of Report

This Chicago Police Department IR rap-sheet should not replace the use of the Illinois State Police statewide criminal history transcript, which may contain additional criminal history data and can be obtained by performing a CQR1 inquiry via your LEADS terminal.

22-NOV-2010 12:05 Requested by: PC09808