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Firearms and Community Feelings of Safety

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I. INTRODUCTION

A recent advertisement from the National Rifle Association argues that women must take responsibility for their self-defense. "One choice is a firearm," the ad reads, "a deeply *personal* decision that requires deliberation, knowledge and maturity" (emphasis added).

More than 50% of gun owners cite protection as one reason they own a firearm.[1] Gun owners, particularly those who own their guns for protection, report they feel safer because of their guns. For example, 89% of individuals whose primary reason for gun ownership was self-defense said "yes" when asked "Do you feel safer because you have a gun at home?"[2] The findings are not at all surprising. If their guns made them feel less safe, owners could simply get rid of their guns.

This Article emphasizes that the decision to own a firearm is more than solely a personal issue or a household issue—it affects others in the community as well. In the jargon of economics, the decision to acquire a gun has externalities. Families who own guns could theoretically increase community safety, e.g., by deterring criminals, a positive externality, or reduce community safety, e.g., by increasing the risk of accidental injury, a negative externality.

The externalities may be actual, perceived, or both. This Article explores whether increased gun ownership raises or lowers the *perceived* safety of others in the community by looking at subjective beliefs, an issue that has yet to be examined.

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1 LH Research, *Gun Control (adult survey)*, April 1, 1993, at 7.
2 GARY KLECK, POINT BLANK: GUNS AND VIOLENCE IN AMERICA 120 (1991).

II. METHODS

Data were gathered from a national random-digit-dial telephone survey of adults eighteen years and older. The survey, which included 800 individuals who personally own a gun and 400 non-gun owners, was conducted by Fact Finders, Inc., for the Harvard Injury Control Center, in May and June of 1994. Using techniques developed by Waksberg,[3] telephone numbers were randomly generated to include households both with listed and with unlisted numbers. Once a phone number was selected for inclusion in the sample, as many as ten attempts were made to screen the selected household. Respondents were not identifiable by name or address. The refusal rate was 27.2%.

To ensure a nationally representative sample, the sample was stratified by the population of each state. The number of interviews designated for each state was determined by that state's population relative to the total population of the fifty states. The state stratification was performed separately for gun owners and for non-gun owners. This methodology enabled us to estimate the percentage of gun owners in each state and region.

Due to the stratification, gun owners in states with relatively few gun owners, e.g. Massachusetts, are overrepresented in the sample compared to gun owners in states where a high percentage of people own firearms, e.g. Mississippi. Conversely, non-gun owners are over-sampled in Mississippi and undersampled in Massachusetts. This effect may be corrected by weighting the data with estimates of state gun ownership. In analyzing the data, the results are similar whether weighted or unweighted data are used. For simplicity of exposition, only unweighted data will be presented.

Gun owners comprise almost 30% of the U.S. population.[4] Our survey indicates that approximately 33.7% of adults personally own a gun. By obtaining 800 gun owners and 400 non-owners, the survey oversampled approximately four-to-one for gun owners. To get a national estimate, observations were weighted to correct for this oversampling.

The first three questions in the survey ask about crime in the respondent's neighborhood and about how safe the respondent feels. The fourth question, which is the first about firearms, asks: "Thinking specifically about guns, if more people in your community were to

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[3] Joseph Waksberg, *Sampling Methods for Random Digit Dialing*, 73 J. AM. STAT. ASS'N 40, 41 (1978).

[4] NATIONAL OPINION RESEARCH CENTER, GENERAL SOCIAL SURVEYS, 1992-93, at 277 (1993).

acquire guns, would that make you feel more safe, less safe, or the same?" The response to this question is the dependent variable in our analysis. One hundred and eleven gun owners and thirty-seven non-owners did not answer the question and are excluded from the analysis.

Independent variables included gender, race (white or other), community (urban or other), region (South or other), education (completed college or not), family income (<$35,000; >$35,000), whether any children under eighteen live in the household, whether there was a gun in the house when the respondent was growing up, and for gun owners, whether one reason for owning guns is protection. The South is defined as Alabama, Arkansas, Florida, Georgia, Louisiana, Mississippi, North Carolina, South Carolina, Texas, Virginia, and West Virginia. More than a hundred individuals did not reveal their family income. There is a missing income variable for the individuals with missing responses.

Bivariate analysis is used initially to explore the relationship between dependent and independent variables, using the chi-square test for significant differences in the discrete independent variables. Multiple regression is used to control for potential confounding, permitting analysis of any one factor while statistically holding the others constant. In the multiple regression, a dichotomous outcome variable is used (feel less safe versus feel more safe or the same), and logistic regression techniques are employed to determine potential correlates of perceived safety.

Surveys have various limitations: due to sampling error, those that sample the population may obtain different results than those that interview the whole population. In a survey of 400 respondents, for projection to the entire U.S. population, the results are subject to an error margin of plus or minus seven percentage points for each question because of chance variation in the sample; in a survey of 800, the error margin is plus or minus four percentage points.

Telephone surveys are subject to systematic error.[5] Individuals without household telephones are underrepresented.[6] The survey may also underrepresent criminals, because of the time they spent incarcerated or their possible reluctance to be interviewed.[7]

Finally, self-report data may be subject to inaccuracies because of social desirability responses, recall bias, intentional distortions or non-

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[5] JAMES H. FREY, SURVEY RESEARCH BY TELEPHONE 45-46 (2d ed., 1989).

[6] PAUL J. LAVRAKAS, TELEPHONE SURVEY METHODS 13-15 (1987).

[7] Philip J. Cook, *The Case of the Missing Victims: Gunshot Wounds in the National Crime Survey*, 1 J. QUANTITATIVE CRIMINOLOGY 91, 100 (1985).

candid responses.[8] For example, while *registered* gun owners generally provide valid responses to questions about gun ownership,[9] individuals who own guns illegally may be reluctant to admit ownership.

III. RESULTS

Eighty-five percent of non-gun owners report they would feel less safe if more people in their community acquired guns; only 8% would feel more safe.[10] By a ten-to-one margin, they prefer others not to acquire firearms. Over 80% of non-gun owners would feel less safe if others acquire guns whether respondents are male or female, white or non-white, live in urban or suburban/rural areas, have high or low income, are young or old, have children living at home or not, and had a gun in the house when growing up or not.[11]

For gun owners, the acquisition of firearms by others in the community would leave about equal numbers feeling less safe as feeling more safe.[12] Among gun owners, those likely to feel less safe are females, non-whites, urban dwellers, those who did not have a gun in the home when growing up, and those who own a gun for reasons other than protection.[13]

Although the survey oversampled gun owners, by appropriate weighting data may be extrapolated to the United States as a whole. For the entire population—gun owners and non-gun owners together—71% feel less safe and 19% feel more safe when others in the community acquire firearms.[14] Among the general population, those who are particularly likely to feel less safe are women and non-gun owners.

IV. DISCUSSION

If the goal were to maximize safety for U.S. residents, what is the optimal number of private households that should own guns? In answering we must consider two effects. First, do guns in Household *A* make that household more safe or less safe, and second, do guns in Household *A* make *other* households (*B, C . . .Z*) feel more safe or less safe? Although studies have attempted to provide information con-

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8 LU ANN ADAY, DESIGNING AND CONDUCTING HEALTH SURVEYS 129-42 (1989).

9 Arthur L. Kellermann et al., *Validating Survey Responses about Gun Ownership among Owners of Registered Handguns*, 131 AM. J. EPIDEMIOLOGY 1080, 1083 (1991).

10 *See* Table 1.

11 *Id.*

12 *See* Table 2 (reporting that 41% feel less safe, 40% feel more safe, and 19% would experience no change).

13 *Id.*

14 *See* Table 3.

cerning objective risks, the evidence is far from definitive.

Various studies have discussed the effect of a gun in the home on the risk of injury to those *in* the household. Gun control advocates emphasize the spontaneous and impulsive nature of many firearm injuries.[15] Their analyses indicate that access to a firearm may be an important risk factor for lethal assault, completed suicide, and unintentional shootings.[16] Gun control advocates conclude that if individuals were well-informed, few would keep firearms in their homes.

By contrast, pro-gun advocates believe the risks of gun ownership are minimal while the protective benefits conferred by firearms are substantial.[17] Unfortunately, controversy exists not only about the advisability and effectiveness of gun use in self-defense, but even about the number of times guns are actually used for defensive reasons.[18]

Some studies have attempted to determine whether gun ownership increases or reduces objective safety in a *community*. Typically, areas with high rates and low rates of gun ownership are compared in a cross-sectional analysis. Most studies conclude that gun density is positively associated with homicide rates.[19] The evidence on suicide is mixed: some studies find a positive relationship between gun density and suicide,[20] while others find no relationship.[21] Research indicates

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15 *See, e.g.*, David A. Brent et al., *Firearms and Adolescent Suicide: A Community Case-Control Study,* 147 AM. J. DISEASES OF CHILDREN 1066, 1070 (1993); Richard A. Goodman et al., *Alcohol Use and Interpersonal Violence: Alcohol Detected in Homicide Victims,* 76 AM. J. PUB. HEALTH 144 (1986); Arthur L. Kellermann et al., *Suicide in the Home in Relation to Gun Ownership,* 327 NEW ENG. J. MED. 467, 470 (1992); Gary J. Ordog et al., *Gunshot Wounds in Children under 10 Years of Age: A New Epidemic,* 142 AM. J. DISEASES OF CHILDREN 618, 620 (1988).

16 *See, e.g.*, Arthur L. Kellermann et al., *Gun Ownership as a Risk Factor for Homicide in the Home,* 329 NEW ENG. J. MED. 1084, 1090 (1993); Arthur L. Kellermann & Donald T. Reay, *Protection or Peril? An Analysis of Firearm-Related Deaths in the Home,* 314 NEW ENG. J. MED. 1557, 1559 (1986); Kellermann et al., *supra* note 15, at 470.

17 DON B. KATES, GUNS, MURDER AND THE CONSTITUTION (1990).

18 *See, e.g.*, Philip J. Cook, *The Technology of Personal Violence,* 14 CRIME & JUST. 1, 54-57 (1991); KLECK, *supra* note 2, at 120; David McDowall et al., The Incidence of Civilian Defensive Firearm Use, (University of Maryland Violence Group Discussion Paper, Nov. 10, 1992).

19 *See, e.g.*, Martin Killias, *International Correlations between Gun Ownership and Rates of Homicide and Suicide,* 148 CAN. MED. ASS'N J. 1721, 1723 (1993); John H. Sloan et al., *Handgun Regulations, Crime, Assaults and Homicide: A Tale of Two Cities,* 319 NEW ENG. J. MED. 1256 (1988); Garen J. Wintemute, *Firearms as a Cause of Death in the United States, 1920-1982,* 27 J. TRAUMA 532, 534 (1987).

20 *See, e.g.*, Myron Boor, *Methods of Suicide and Implications for Suicide Prevention,* 37 J. CLINICAL PSYCHOL. 70, 74 (1981); David Lester, *Gun Ownership and Suicide in the United States,* 19 PSYCHOL. MED. 519, 520-21 (1989); Robert E. Markush & Alfred A. Bartolucci, *Firearms and Suicide in the United States,* 74 AM. J. PUB. HEALTH 123, 126-27 (1984); Ian R. H. Rockett & Gordon S. Smith, *Homicide, Suicide, Motor Vehicle Crash and Fall Mortality: United States' Experience in Comparative Perspective,* 79 AM. J. PUB. HEALTH 1396, 1400 (1989); Wintemute, *supra* note 19, at 534.

that gun prevalence affects the lethality of robbery but not the rate at which robberies occur.[22]

All these studies have serious limitations.[23] Among other problems, reported data on gun ownership are somewhat unreliable, and the direction of causality in the associations is often ambiguous: for example, would a positive serious crime-gun ownership correlation indicate that more guns lead to more serious crime, or vice versa?

There is also research that analyzes natural experiments concerning the relationship between private deterrence and crime. Results are quite controversial,[24] but a pro-gun review of the evidence concludes that "much of social order in America may depend on the fact that millions of people are armed and dangerous to each other."[25]

The issue of maximum safety could be examined in terms of subjective beliefs rather than objective reality. Subjective belief and objective reality are often positively correlated, but even if they were not, we agree with Wright, that an "enhanced feeling of psychological safety . . . is NOT a trivial benefit."[26]

For example, guns in Household *A* could make its residents *feel* more safe or less safe, and guns in Household *A* could also make residents of *other* households feel more safe or less safe. Evidence exists, and reason suggests, that most gun owners, particularly those who own guns for protection, feel safer because of their guns. Whether other members of the family feel safer is not so certain.

Reviewing this evidence, Gary Kleck argues that "[r]esults from a number of national surveys have all indicated that most protection gun owners feel safer because they have a gun in their home, whereas almost none feel less safe. If these self assessments are accurate, the net effect of home gun possession on gun owners is to reduce fear of crime."[27] Kleck does not address the possibility that gun possession by one household may affect the feelings of safety in another household.

When asked a hypothetical question, the large majority of Ameri-

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[21] *See, e.g.,* Ronald V. Clarke & Peter R. Jones, *Suicide and Increased Availability of Handguns in the United States,* 28 SOC. SCI. & MED. 805, 806 (1989); John H. Sloan et al., *Firearm Regulations and Rates of Suicide: A Comparison of Two Metropolitan Areas,* 322 NEW ENG. J. MED. 369, 371 (1990).

[22] Cook, *supra* note 18, at 18.

[23] Robert L. Ohsfeldt & Michael A. Morrisey, *Firearms, Firearm Injury, and Gun Control: A Critical Survey of the Literature,* 13 ADVANCES HEALTH ECON. & HEALTH SERVICES RES. 65, 75-76 (1992).

[24] *See, e.g.,* KLECK, *supra* note 2; David McDowall et al., *General Deterrence through Civilian Gun Ownership: An Evaluation of the Quasi-Experimental Evidence,* 29 CRIMINOLOGY 541 (1991).

[25] KLECK, *supra* note 2, at 143.

[26] James D. Wright, *The Ownership of Firearms for Reasons of Self-Defense, in* FIREARMS AND VIOLENCE 320 (David Kates ed., 1984).

[27] KLECK, *supra* note 2, at 29.

cans (and 41% of gun owners) report they feel less safe if more peo-
ple in the community acquire firearms. These data suggest that one
household's decision to purchase a gun imposes psychic costs on
many others: most people in the community believe, rightly or
wrongly, that they become less safe.

However, the evidence comes from a single question. Further re-
search should pose additional questions to determine the consistency
of responses and to explore why respondents feel more safe or less
safe when others acquire guns. Table 4 provides some possible rea-
sons which could be explored.

For example, it may be that gun owners are more comfortable
around guns. They may divide the world into camps of good guys
(the law-abiding) and bad guys (criminals) and believe that the bad
guys already have firearms. In contrast to gun owners, non-gun own-
ers may be more fearful of firearms, and believe that a loaded weapon
in almost anyone's hands is a danger. Some individuals may feel less
safe, not because they worry about guns *per se*, but because their neigh-
bors' decision to obtain firearms is perceived as a signal that crime has
increased. Unfortunately, the survey provides no evidence on these
issues.

Nor does the study indicate the intensity of respondents' prefer-
ences—how *much* more safe or less safe individuals feel when others
acquire firearms. For example, while our findings show that a large
majority of Americans feel less safe as others in their community ac-
quire guns, it is possible that, overall, there are positive rather than
negative subjective externalities to gun ownership. This result could
occur if the small minority who felt safer felt a great deal safer, while
the large majority who felt less safe felt only slightly less safe.

V. CONCLUSION

This Article emphasizes that there are externalities in the deci-
sion to own a firearm. Unlike pollution externalities, which are al-
most exclusively negative, guns can provide both external benefits and
costs.

Most people feel the external effects of gun ownership. Our
study demonstrates that the vast majority of Americans believe they
will either be more or less safe when others in the community acquire
guns. Most people probably do not know much about or may not care
enough about the preferences of others when making the decision to
obtain a firearm. If the externalities are primarily negative, then indi-
vidual decision-making may lead to too many people obtaining fire-
arms. The result could be an equilibrium in which, compared to the

optimum, too many households contain guns.

Other external effects are also possible. For example, the decision of one individual to acquire a gun may influence the likelihood that other individuals will obtain a gun or will go out on the street at night, decisions which may have further effects on community safety, perceived and actual.

While the decision to acquire a firearm is personal, it has public ramifications. There are externalities, and the existence of externalities means that private decision-making cannot be expected to lead to the social optimal. This Article provides suggestive evidence that possession of firearms imposes, at minimum, psychic costs on most other members of the community. More information is needed concerning the size and distribution of the psychic and real externalities caused by private gun ownership.

Table 1

AMONG NON-GUN-OWNERS

IF MORE PEOPLE IN COMMUNITY ACQUIRE GUNS

| | N | % Feel More Safe | % Same | % Feel Less Safe | Logistic Regression (1=feel less safe 0=feel same/safer) (N=349) | |
					Odds Ratio	95% Confidence Interval
Overall	363	8	6	85		
Sex						
Male	108	10	7	82	0.65	(0.33, 1.26)
Female	255	7	6	87		
Race						
White	269	7	8	86*	1.13	(0.54, 2.36)
Other	87	14	2	84		
Community						
Urban	152	12	3	84**	0.92	(0.49, 1.73)
Other	209	5	9	86		
Region						
South	95	9	7	83	0.98	(0.49, 1.95)
Other	268	8	6	86		
Education						
College	125	5	4	91	2.05	(0.97, 4.30)
Less	237	10	8	82		
Income						
> $35,000	165	8	7	85	1.13	(0.55, 2.33)
< $35,000	153	7	5	89		
Missing	45	13	11	76	0.47	(0.20, 1.13)
Age						
≥ 50	106	8	10	81	0.61	(0.27, 1.36)
< 50 years	255	8	5	87		
Children under 18 at Home						
Yes	155	12	3	85**	0.70	(0.34, 1.44)
No	207	5	9	86		
Gun in House When Growing Up						
Yes	151	10	7	83	0.63	(0.34, 1.16)
No	211	7	6	87		

*p <.05; **p<.01; ***p<.001

Table 2

AMONG GUN OWNERS

IF MORE PEOPLE IN COMMUNITY ACQUIRE GUNS

	N	% Feel More Safe	% Same	% Feel Less Safe	Odds Ratio	Logistic Regression (1=feel less safe 0=feel same/safer) (N=663) 95% Confidence Interval
Overall	689	40	19	41		
Sex						
Male	427	49	20	31***	0.33	(0.23, 0.47)
Female	262	26	17	57		
Race						
White	626	41	20	39**	0.42	(0.23, 0.77)
Other	57	33	7	60		
Community						
Urban	184	38	12	49**	1.77	(1.22, 2.59)
Other	497	41	21	38		
Region						
South	189	39	18	43	1.23	(0.84, 1.79)
Other	500	41	19	40		
Education						
College	178	43	19	38	0.89	(0.60, 1.33)
Less	509	39	19	42		
Income						
> $35,000	392	40	19	41	1.00	(0.68, 1.48)
< $35,000	234	38	19	43		
Missing	63	49	19	32	0.60	(0.31, 1.16)
Age						
≥ 50	255	44	22	34	0.68	(0.45, 1.04)
< 50 years	433	38	17	45*		
Children under 18 at Home						
Yes	275	36	16	49**	1.27	(0.85, 1.90)
No	408	43	21	36		
Gun in House When Growing Up						
Yes	546	43	20	37***	0.55	(0.36, 0.84)
No	140	30	14	56		
Own Gun for Protection						
Yes	258	54	13	33***	0.50	(0.35, 0.72)
No	430	32	22	46		

*$p<.05$; **$p<.01$; ***$p<.001$

Table 3
EVERYONE
IF MORE PEOPLE IN COMMUNITY ACQUIRE GUNS

	N	% Feel More Safe	% Same	% Feel Less Safe	Logistic Regression (1=feel less safe 0=feel same/safer) (N=518)	
					Odds Ratio	95% Confidence Interval
Overall	538	19	10	71		
Sex						
Male	321	30	14	57***	0.47	(0.30, 0.75)
Female	217	11	8	80		
Race						
White	428	19	12	68*	0.98	(0.52, 1.82)
Other	101	17	3	80		
Community						
Urban	199	19	5	76*	1.22	(0.76, 1.96)
Other	335	19	13	68		
Region						
South	143	19	11	70	1.02	(0.62, 1.69)
Other	395	18	10	71		
Education						
College	170	15	8	77	1.36	(0.82, 2.25)
Less	366	20	12	68		
Income						
> $35,000	253	20	10	70	1.10	(0.66, 1.83)
< $35,000	224	18	11	72		
Missing	61	23	13	64	0.53	(0.26, 1.10)
Age						
≥ 50	171	22	15	63*	0.64	(0.37, 1.10)
< 50 years	365	17	8	74		
Children under 18 at Home						
Yes	225	20	7	74*	0.90	(0.53, 1.52)
No	311	18	13	69		
Gun in House When Growing Up						
Yes	290	26	14	61***	0.59	(0.37, 0.96)
No	247	10	7	83		
Gun Owner						
Yes	363	40	19	41***	0.18	(0.11, 0.29)
No	175	8	6	85		

*p<.05; **p<.01; ***p<.001

Table 4

POSSIBLE REASONS FOR ACQUISITION OF FIREARMS TO AFFECT
COMMUNITY FEELINGS OF SAFETY

Increase Safety

1. Deter people from unlawful behavior by increasing the risks to criminals.
2. Increase the likelihood of capture or killing of current criminals.
3. Provide neighbors with weapons to assist others in resistance to crime.

Reduce Safety

1. Increase access to guns by teenagers, those angry, intoxicated, and with tempers.
2. Increase the likelihood of gun accidents.
3. Redirect crime to those without guns.
4. Increase availability of guns to criminals.