Very rough draft
v1.4

THE ENEMY AT HOME: EXPLORING THE SOCIAL ROOTS OF CRIMINAL ORGANIZATIONS IN MEXICO[1]

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Abstract

There is anecdotal evidence of a growing presence of drug trafficking organizations (DTOs) in Mexican society. As criminal organizations become increasingly rooted in society, citizens may voluntarily or forcibly side with criminals, making it much harder for State forces to effectively fight DTOs. How embedded in Mexican society are criminal organizations? What explains the variations in the level of insertion of criminal organizations across localities? What strategies are used by organized crime to link to societal networks? What determines whether DTOs will be helpful and benevolent or coercive and violent towards citizens? At this moment, the literature has not been able to fully answer any of these questions. Reliable survey data on the topic is scarce, in good part because the issues we attempt to measure are highly sensitive and citizens have incentives to provide false information, or no information at all. To overcome this crucial measurement problem, we implement a series of list experiments embedded in the *Survey on Public Safety and Governance 2011*, which is co-coordinated by the Office of the Mexican Presidency, Stanford University, the Center for U.S.-Mexican Studies at UCSD, and ITAM. We find a much broader presence of DTOs across Mexico than had been expected. There is tentative evidence that relationships between criminals and citizens are a function of the observed levels of violence in particular localities, the level of development at the locality, and the degree of social connectedness of individuals.

[1] We thank Rafael Giménez, Lorena Becerra, Kosuke Imai, Victoria Murillo, Benito Nacif, Francisco Guerrero, Barbara Walter, Alexandra Uribe, and Alex Ruiz Euler for generously sharing their survey questionnaires, facilitating access to data, as well as giving us good advice, useful suggestions, conversations, and insights to this and to related previous versions of this paper. The Polling Unit of the Mexican Office of the Presidency funded and carried out the Survey on Public Safety and Governance in Mexico (SPSG 2011) used in this paper. We thank the excellent research assistance of Tesalia Rizzo. Alberto Diaz-Cayeros thanks the Office of the President of the University of California (UCOP) for its support through the Center for U.S.-Mexican Studies. Beatriz Magaloni thanks the support from the Center for Democracy, Development and the Rule of Law (CDDRL) at Stanford University. Vidal Romero thanks the Asociación Mexicana de Cultura A.C. and the Sistema Nacional de Investigadores of Conacyt for its support for this project.

THE ENEMY AT HOME:

EXPLORING THE SOCIAL ROOTS OF CRIMINAL ORGANIZATIONS IN MEXICO

News media and casual conversations with Mexican citizens are full of stories which point to a growing and ubiquitous presence of drug trafficking organizations (DTOs) in Mexican society and government organizations. In many urban localities citizens can easily spot supposed *narcos*[2] freely shopping in malls, eating at posh restaurants, and driving around in attention getting vehicles—usually highly equipped with expensive wheels, noisy stereos, and passengers with a certain attitude. Many popular songs, or *"corridos",* relate *narcos'* life and adventures. In many residential areas, rich or poor, urban or rural, it is easy to figure out which houses may belong to members of the organized crime, simply by the striking excesses in design. Some areas of Mexican territory are said to be controlled by drug-lords who have taken over State capacities, tax the citizens, and in some cases marry the town beauty queen.[3] In other territories the citizens have taken control of their own communities, deposing the local authorities and literally closing access to the towns to prevent criminal organizations from entering.[4]

The current war on crime that Mexican president Calderón started in late 2006 has increased the inner conflicts among DTOs producing a death toll of more than 60,000 people, most of them the product of in-fighting between criminal organizations. However, ordinary citizens have also become systematic casualties of this fight. While the presence of narcos is certainly not a new

[2] *Narcos* is the common word for referring to drug dealers. In this paper we refer indistinctly to *narcos* and criminals since criminal organizations in Mexico are currently dedicated to drug trafficking as well as other illegal activities, such as kidnapping, robbery, prostitution, and the like.

[3] The Mexican president Felipe Calderón declared recently at the Organization of American States meeting that certain areas of Mexican territory were controlled by organized crime (http://www.eluniversal.com.mx/primera/39271.html).

[4] See for instance the case of the town of Cherán in the western state of Michoacán (http://www.eluniversal.com.mx/estados/80308.html).

circumstance in some areas of Mexico, especially in the north, the presence of criminal organizations in society now seems to be widespread all over the country (Guerrero, 2010; Magaloni et al., 2011; Ríos and Shirk, 2011). This is a worrisome situation. To the degree that criminal organizations become increasingly rooted in society, citizens may voluntarily or forcibly side with the criminals, making it much harder for State forces to effectively fight DTOs. The existing literature agrees that the survival of groups fighting State forces necessarily requires some degree of societal support (Fearon and Laitin, 2003; Weinstein, 2007; Berman, 2009).

How embedded in Mexican society are criminal organizations? What explains the variations in the level of insertion of criminal organizations across localities? What strategies are used by organized crime to link to societal networks? What determines whether DTOs will be try to be helpful and benevolent or coercive and violent towards citizens? What are the effects of DTOs' insertion in society on societal support for the fight against organized crime?

The existing literature for the Mexican case has focused on explaining the recent upsurge in violence, but little has been said about the degree of encroachment of criminal organizations into Mexican society, the institutional mechanisms through which their influence is used, and the circumstances under which we should expect criminal organizations to be coercive or sympathetic towards citizens.

Reliable survey data on the topic is scarce, in good part because the issues to be measured are highly sensitive. Either rooted in fear or sincere support, citizens tend not to provide information about their direct relationships with DTOs, or about the presence of these organizations in society. Therefore, places with strong control of DTOs can be observationally equivalent to places in which there is no presence of DTOs, since data from public opinion surveys should

report an absence of DTOs' activity in both cases. In the case of strong DTOs' control, citizens could fear providing any information; while in the scenario without DTOs' presence citizens will accurately report the absence of criminal organizations.

Measuring DTOs presence also generates severe problems at ground level. Interviewers are put in significant danger when they walk into territories allegedly controlled by a criminal organization and directly ask people about criminal activities.

To minimize these sort of measurement problems, and the risk to our pollsters, we implemented a series of list experiments embedded in the 2011 *Survey on Public Safety and Governance* (SPSG 2011), which is co-coordinated by the Office of the Mexican Presidency, Stanford University, the Center for U.S.-Mexican Studies at UCSD, and the ITAM.

We find significant DTOs' presence not only in violent Mexico, but also in places in which we do not observe violence. Violence, then, should be signaling something different than the mere presence of criminal organizations. A known and relatively supported hypothesis is that violence is signaling territorial conflicts among DTOs (Guerrero, 2010; Merino, 2011). If this is the case, then in violent places we should observe that there is no hegemonic DTO undisputedly controlling the territory. The presence of criminal organizations in low-violence areas is less understood. We infer from our data that there is significant DTOs' presence at this places, and are not violent because there does exist hegemonic control by one criminal cartel; or it may be the case that if more than one strong cartel exists, criminal organizations have solved their credible commitment problems to have effectively partitioned the territory.

We also inquired about the sort of relationships existing between criminals and citizens. For analytical purposes, we assume two types of possible relationships: coercive and sympathetic. We approximate the coercive relationship by measuring the proportion of citizens that have

suffered extortion from criminals, and the sympathetic approach by the proportion of citizens that have asked for help from criminals. We analyze the determinants of these two types of relationships using difference-in-means tests and multivariate analysis on the basis of Imai (2011) and Blair and Imai (2012). We find rather interesting patterns, although in some cases with relatively high degrees of statistical uncertainty.

We find a higher average proportion of extortions in high-violence municipalities; criminals fighting for territory have a relatively shorter time-horizon, making them more prone to predation. We also find that citizens with low social networks, and those living in poorer communities are more likely to be victims of extortion; these are the individuals that one would expect are most vulnerable to criminals.

Citizens ask for criminals' help equally in communities with all levels of violence, but there are differences by type of locality: on average, citizens in non-urban areas ask for help from criminals more than those in urban areas. Citizens inhabiting relatively well-off localities are also more likely to ask for criminals help. Additionally, we found that individuals who are either very highly, or very poorly, socially connected are more likely to go to criminals for help.

The rest of the paper proceeds as follows: in the next section we present and discuss the related answers to our research questions. We then present the methods and the data with which we inquire into the presence of criminal organizations in society. At the end we discuss our findings and outline a future research agenda on the topic.

SOCIAL EMBEDDEDNESS OF CRIMINAL ORGANIZATIONS

The existing literature agrees in that a necessary condition for the survival of enemies of the State is some degree of societal support. The public policy literature on fight against crime

systematically addresses the fact that a necessary condition for effectively combating criminal organizations is for citizens to actively side with State organizations (e.g. Taylor, 2006; Sunshine and Taylor, 2003). Similarly, there is a significant literature on civil conflicts emphasizing the need to "win the hearts and minds" of citizens as a necessary condition for winning the war (Fearon and Laitin, 2003; Weinstein, 2007; Berman, 2009; Walter, 2009; Lyall et al., 2011; Berman et al., 2011).

The logic of these arguments is simple: without citizens' support, criminals and insurgents cannot hide and cannot obtain sufficient means for surviving during long periods of time. Thus, we would expect that criminals and insurgents that are actively repudiated by society would not stay free or alive for lengthy periods. Communities would be likely to denounce these opponents to the State if they enter their territories. However, this implies that citizens actually trust that State forces would punish delinquents and protect citizens. If this trust does not exist, we may observe that in some cases communities may organize themselves to defend their territories from criminals and sometimes even from police.[5] This latter scenario implies that societies have solved their collective action problems to collectively confront intruders. There is evidence showing that individuals with wider social networks—supposedly with more social capital *a la* Putnam (1993)—are less likely to fear being victims of a crime (Gainey et al., 2010) and less likely to overestimate their risk of being a victim (Magaloni et al., forthcoming).

Therefore, if citizens are not sided with the State or cohesively organized, it would be relatively easy for criminals to penetrate societies, making it much harder for State forces to fight DTOs. Siding with criminals may actually be more "attractive" for citizens as compared to

[5] Just recently the inhabitants of Chimalhuacán, a town located in the Estado de México, organized themselves to protect their communities from predatory police officials. See http://www.reforma.com/edomex/articulo/651/1300790/?Titulo=se-cuidan-vecinos-de-policia.

siding with insurgents in a civil war situation. During civil wars, insurgents usually ask citizens for help, sometimes extort them, and almost never do citizens benefit from insurgents in the short run. In the case of DTOs, a significant portion of citizens do benefit from the illicit acts of criminals directly, for example, selling stolen goods or retail drugs— "narcotienditas", which are neighbor grocery stores that sell drugs illegally, have mushroomed in Mexico—or buying protection from criminals so that their informal business can continue operating without being disturbed by the authorities. DTOs also provide lucrative, although illegal, jobs to communities. Joining organized crime may seem very attractive for some economically deprived segments of the population. Criminal organizations have ample room for extending their tentacles all over society.

Narcos may insert themselves in society on different ways. Two of these are clearly identified by the media and by informal accounts. First, a tense and damaging relationship with citizens in which criminals systematically prey on them by means of extortion, theft and murder. These criminals are highly feared, much like the roving bandits in Olson (1993). In these circumstances, for instance, we observe greater flows of internally displaced citizens (Ríos, 2011).

A second form in which narcos may be embedded in society is through a more sympathetic relationship. Criminals do conduct their "regular" activities—harming citizens—but individuals can also approach criminals for "help", such as loans (usually with high interest rates and the debtors' life as collateral), to solve local disputes, much like the stationary bandits in Olson (1993) or the Sicilian mafia (Gambetta, 1996), or as job providers (Ríos, 2009). This sympathetic relationship is one mechanism for gaining the loyalty of civil society (Iannaccone, 1992; Berman, 2000; Berman and Laitin, 2008).

Although there are global accounts in the literature and in the news of these alternative and not mutually exclusive relationships between criminals and citizens, we still do not have a sufficient and empirically well-grounded explanation on the determinants of the different types of relationships between these two groups. In the following sections we aim towards contributing in that direction.

MEASURING CRIMINAL ORGANIZATIONS EMBEDDEDNESS

Crime related activities are phenomena that are easy to spot, but quite difficult to accurately measure. The highly sensitive nature of these topics motivates all actors involved to hide information. Criminal organizations do not advertise their membership, activities, or *modus operandi*. The government does not provide much detail on their strategies to combat criminal organizations for national security reasons, and it certainly does not give out information about its own collusion with criminal organizations. On their part, citizens fear providing any information that may trigger punishment from criminals, or even from the police that is supposed to protect them. There is a significant literature on the problems related to measuring citizens' opinions and attitude for crime and civil conflict (See, for instance, Warr, 2000; Stylianou, 2003; Kalyvas and Kocher, 2009; Brück et al., 2010; Mosher et al., 2010; Lyall et al, 2011).

In addition to measurement problems related to citizens' reticence to provide truthful information, acquiring public opinion information about crime related issues faces severe problems at the ground level. In countries in which high proportions of the population do not have telephones, representative sampling must be done on the basis of some geographical frame from which homes can be selected. Interviewers then conduct face-to-face interviews, which place them in great danger when visiting unsafe areas. Knocking on houses to interview locals

about their experiences and perceptions on crime and violence is clearly a "suspicious" activity that is unwanted by criminals.

These potential issues when measuring crime and violence issues generate a downward bias on the aggregate reported proportions of citizens witnessing, being victim to, or even having positive opinions about criminal activities. We would expect the size of such bias to be a function, likely non-linear, of the level of crime and violence experienced by the individual and her risk aversion, which makes data from direct questioning of these issues non-trustable.

One solution in the literature to maximize the incidence of truthful responses to sensitive issues is the use of list experiments (Kuklinski et al., 1997a; Kuklinski et al., 1997b; Gaines et al., 2006; Corstange, 2009; Blair and Imai 2012; Glynn, 2010; González-Ocantos, 2010; Holbrook and Krosnick, 2010).

We conducted a series of list experiments embedded in a nationwide survey. In July 2011, the Public Opinion Coordination at the Office of the Mexican Presidency conducted a survey on crime, violence, and governance issues in which the authors were invited to collaborate in its design and analysis. In the following sections we discuss the overall survey design, we then present the details of the fieldwork since it is relevant to fully understand the sort of environment in which data is being collected and the usefulness of list experiments for these cases. Finally, we explain the logic of list experiments and their application to the Mexican case.

Survey Design

The overall survey design was focused on fulfilling two core objectives: (a) collecting valid information on the different levels of observed violence in México, and dividing them into measurable segments which would allow us to generate valid inferences about the actual

circumstances and implications of violence, and (b) generating more accurate data on the type and actual incidence of criminal activities. There is much unsettled discussion in the literature about the origins and actual meaning of the current wave of violence in Mexico (e.g. Guerrero, 2010, Peña-Merino, 2011; Ríos and Shirk, 2011; Magaloni et al., 2012). While there are a significant number of surveys on crime and public safety in Mexico,[6] all of these surveys lack a proper design to minimize the incentives that interviewees have for not providing truthful responses.

The survey that was designed was made up of 2,700 face to face interviews of individuals 18 years or older, conducted in their homes. A multi-stage stratified sampling method was used on the basis of federal electoral sections (*secciones electorales*), which is the smallest geo-referenced unit for which there is publicly available information. The country is divided into 65,937 non-overlapping electoral sections.

The electoral sections were stratified combining two criteria: first, the level of violence, which was divided into three categories based upon the number of violent deaths at the municipal level—which is the smallest geo-referenced unit for which there is official crime data—divided by the lowest quartile, the inter-quartile range, and the upper quartile. The second criterion was the type of electoral section, urban or non-urban, according to the Federal Electoral Institute. 300 electoral sections were randomly selected in total by systematic jump and random start. In order to secure sufficient cases for statistical inference we assigned an equal number of electoral sections for every violence strata, 100 electoral sections, and then the sample was weighted to represent the population distribution.

[6] See, for instance, the National Surveys about Security (Encuestas Nacionales sobre Seguridad-ENSI) at http://www.icesi.org.mx/estadisticas/estadisticas_encuestasNacionales.asp, or the Mexico United against Delinquency and Consulta-Mitofsky surveys on Public Safety perceptions at http://www.icesi.org.mx/estadisticas/estadisticas_encuestasNacionales.asp.

Within every electoral section 9 questionnaires were applied. The starting point at every sample point was the address where the voting booths were set up in the 2009 federal election. The first questionnaire was applied at the home closest to the right corner of the same block of the starting address going clockwise, selecting three homes in each block by systematic jump selected at random. The enumerator would continue the interviews in the cross-corner block in which she began. For localities without geometrical blocks, enumerators selected homes in spiral clockwise with systematic jump. Rejection rates were tallied by the enumerators. An adjustment of quotas was made to reelect the population by age and gender, according to official census data. The margin of error for the full sample is 1.89 percent at the 95 percent confidence interval. The survey was collected from July 9 to 17 of 2011.

The sample frame excluded the state of Tamaulipas, which was deemed too unsafe for the enumerators. The states of Baja California Sur, Campeche, Yucatan and Quintana Roo do not have sample points due both to their relatively small size and the fact that their municipalities fall in the low violence stratum, which by construction was underrepresented in the gross sample. The original sample frame was implemented with some substitutions of polling points in rural areas of the state of Chiapas. Those substitutions were not related to violence, but to logistical difficulties related to reaching the selected points during the rainy season.

Field Work

Fieldwork in conflict zones has been a systematic concern for researchers (e.g. Blumenthal, 1972; Fafchamps and Vicente, 2009; Bullock et al., 2011; Lyall et al., 2011; Matanock and García-Sánchez, 2011; Moreno, 2012). The current state of crime and violence across Mexico represents a potentially dangerous environment for enumerators conducting face-to-face

interviews.[7] Phone surveys are not an option for producing nationwide representative samples in Mexico because of poor phone coverage: the proportion of homes with a telephone (land line) is around 45 percent, and 62 percent of citizens have cellular phones, however, the subpopulations with phone and/or cellphone are significantly different from the subpopulations without phone or cellphone on many relevant characteristics.

Assaults and intimidation from criminals and some authorities are part of a regular workday for enumerators. Around the time during which the *SPSG 2011* was being conducted in the field, there were reports of nine enumerators from two different polling firms being kidnapped by criminals in the western state of Michoacán; fortunately, they were released after a couple of days[8]. Clearly, pollsters are in a high-risk occupation in Mexico these days. Enumerators told us that one of the starting point addresses in the sample was full of bullet holes.

During the collection of the *SPSG 2011,* members of drug gangs harassed some enumerators. In order to understand some of the challenges faced by the enumerators of the polling firm, we met for several hours with them in Mexico City on August 16, 2011, this gave them an opportunity to share their impressions and stories while collecting the survey. Around half of the enumerators participated. The experiences they shared were chilling.

In many of the locations where the survey was collected enumerators were escorted either by the police, or by the drug trackers themselves, while they were doing their work. During the interviews sometimes members of the drug gangs would hang around watching ("un *Zeta* los miraba mientras contestaban"). In some cases it was never clear if the police were escorting

[7] In its first 2012 quarterly report the World Association of Public Opinion Research (WAPOR) issued a country report on how crime is affecting public opinion research in Mexico (Moreno, 2012); it describes the sort of problems that polling firms are facing due to crime in the country (http://wapor.unl.edu/wp-content/uploads/2012/04/1q2012.pdf).

[8] The news report can be consulted at http://www.eluniversal.com.mx/notas/783139.html.

enumerators to protect them from criminals, or if the police themselves were part of the criminal organizations. In several locations they were told to leave town before sunset, because after that the local dwellers feared for their safety—just like in vampire movies.

At one particular town, a group of enumerators was told not to return the next day to finish their interviews, but to come back the following day, because "tomorrow is when the narcos come down to collect their payment (*cuota*)." Our interviewers noted that in the North of the country narcos often guard the town doing rounds (*rondines*) every couple of hours, like the police would patrol a “regular” town. It was also common to observe men known as “falcons” posted at the entrance of certain areas and other strategic points in urban and rural localities, these individuals are in charge of communicating the presence of authorities or foreigners to the criminal organizations.

Consistent with some anthropological work (McDonald, 2005), enumerators noted that it is relatively easy to figure out whether a town has a strong presence of DTOs. The women wear gold chains and earrings. The homes, even when they look relatively poor ("casas humildes"), have satellite dishes and expensive sound equipment. People spend large amounts of money on entertainment, and also provide substantial charitable donations to the local church, or to the feast of the local patron saint. Their cars are easily distinguished, generally pick-up trucks with an upscale sound system "and wheel rims that cost as much as the car itself".

The fieldwork team told us that these are not uncommon circumstances in their work, and that in some parts of the country these circumstances existed even before the fight against organized crime began in late 2006. Nevertheless, the situation that was previously contained to a cluster of known dangerous zones is now widespread across the country.

Enumerators also faced problems in places in which there was not an apparent presence of criminal organizations. This is a sort of negative externality stemming from the climate of crime and violence that is present in the rest of the country. Local police organizations and organized communities are extremely suspicious of foreigners in their territories. The municipal police at one Eastern city detained enumerators because they were conducting "suspicious activities." They were not released until the chief police office called us at ITAM to verify whether our poll actually existed and the research indeed had an academic purpose.

In the Southern part of the country, the enumerators had the impression of firmer police control. Policemen often stopped them, asking to see the questionnaires, but would allow them to do their work. In the state of Oaxaca—where many municipalities exercise self-government (*usos y costumbres* system)—enumerators had to ask for permission from the municipal authorities before conducting the survey, show a valid identification (the electoral card usually), and give the telephone number of the person in charge of the project.

Rejection rates in some of the more dangerous polling points were caused either because people refused to open the door, or, as in the case of Ciudad Juarez, because many homes had been abandoned. The overall rejection rates were 1.82 questionnaires with a standard deviation of 2.95. Hence, on average the enumerators had to knock at two homes before finding a third one to interview. Rejection rates were much lower in rural than in urban locations, regardless of the level of violence. Somewhat surprisingly, the high violence strata were not the ones with the highest rejection rates. In urban places of medium violence we observed the highest rejection rate, that of 2.77, with a standard deviation of 3.5.

In some respects, it is harder to conduct any type of field work when dealing with criminal organizations than with insurgents in a civil war. In the former situation, with an elevated

presence of violent criminal organizations there are no neutral parts to the conflict. Personnel conducting fieldwork are potential victims for criminals, either for simple robbery or worse (such as human trafficking). In a civil war, enumerators may be of little value for combatants in many circumstances.

In a civil war the sides in conflict are clearly identified, usually insurgents and State forces. If a military officer approaches you in the field, it is very likely that he works for the State. In the context of public insecurity, however, a military or a police officer may be colluded with the criminals and there is no way to know this *ex ante*. To make matters worse, we would expect that the likelihood of a State official being colluded with the criminals to be positively correlated with the level of crime and violence in the region, since high levels of crime and violence are probably related to ineffective enforcement organizations in the area. Moreover, locals may also be part of criminal bands, with a likelihood positively correlated to the level of crime and violence. There is no one to trust in scenarios of high crime incidence.

List experiments

As can be inferred from the previous section, asking directly about crime related issues would probably generate highly inaccurate information and would put enumerators at great risk. To minimize these potential problems we designed a series of list experiments that we embedded in the *SPSG 2011*. List experiments are aimed at maximizing truthful responses from interviewees in public opinion surveys. They are most useful when individuals have incentives to provide socially acceptable responses or individuals fear some sort of reprisal if they provide any information or opinions about sensitive issues.

A list experiment considers two groups of individuals, a control group and a treatment group, which are selected randomly from the overall sample such that the groups are equivalent. The individuals in the control group are shown a list of *n* items, they are then asked how many of the items they have/do/know of/agree with. It is important to ask them not to specify which items. These n items are non-sensitive, in the sense that we would expect that they do not induce any fear or social desirability effects. The treatment group receives the same list with the *n* items plus an additional "sensitive" item. Interviewees in the treated group are also asked to specify a number of items they have/do/know of/agree with, but not to mention which items. The difference on mean items between the control and treatment groups provides an adequate estimate of the aggregate proportion of the population that mentioned the sensitive item (For more detailed explanations see Corstange, 2009; Glynn 2010; Imai, 2011; Blair and Imai, 2012).

The *SPSG 2011* questionnaire had five embedded list experiments. We randomly selected 3 groups of 900 individuals: one control group and two treatment groups. There were three different types of questionnaires, one for every group—divided not only for the list experiments but also for other type of experiments embedded in the survey, which were placed latter in the questionnaire so that they would not contaminate the list experiment. The individuals in the sample were randomly assigned to every group. When selecting the subjects in sample, the interviewers applied questionnaire 1 to the first individual selected at the polling point, questionnaire 2 to the second subject that was selected, and questionnaire 3 to the third individual; then, they began again with questionnaire 1 and so on. Since the selection of the individuals in the sample was done randomly, there is no reason to suspect any systematic bias in the selection of individuals across groups.

The lists were directly read by the interviewee from cards given by the enumerator. Each person interviewed received a total of 3 different cards. Figure 1 describes cards given to each group, and their exact wording. The control group received all three cards listed in its row, the same for the two treatment groups. In the first experiment, in which gun ownership was the treatment, there was only one treatment group (n=1,800) since both treatment groups received the same card. For the other two cards, there were two different treatment groups (n=900), one for each experiment.

The list experiments were placed close to the beginning of the questionnaire to prevent any contamination from other parts of the interview, especially those related to public safety. We conducted a training session with enumerators and their coordinators to ensure that they understood the mechanics of the interview. Enumerators were instructed not to provide any additional information to the interviewees other than that specified in the questionnaire and the cards containing the lists.

Figure 1 - Description of List Experiments

	Card 1	Card 2	Card 3
Introduction to all groups	Please tell me how many of these things you have in your home. We just want to know how many you have, do not tell me which ones.	Please tell me how many of these things you have done in the past 6 months. We just want to know how many you have done, do not tell me which ones.	Please tell me how many of these things you have done in the past 6 months. We just want to know how many you have done, do not tell me which ones.
Control Group	**1.** Refrigerator. **2.** TV. **3.** Computer. **4.** Votive candles.	**1.** I got drunk at a party I went to. **2.** I did some exercise outdoors. **3.** I attended church almost every Sunday.	**1.** I have received benefits from the Oportunidades program. **2.** I have participated in a tanda.* **3.** I gave charity (limosna) in church or the street.
Treatment Group 1	**EXPERIMENT 1** **5.** Gun.	**EXPERIMENT 2** **4.** I have seen cars or trucks with armed men who are not policemen in broad daylight.	**EXPERIMENT 4** **4.** I have given money to drug or criminal organizations so that they do not harm me.
Treatment Group 2		**EXPERIMENT 3** **4.** I asked for help from someone working for organized crime.	**EXPERIMENT 5** **4.** I have given money to the police so that they protect me.

Inherent in any experiment are the assumptions on which the experiment is based. List experiments rely on two sets of assumptions: no liars and no design effect. Floor and ceiling effects can generate "liars": if an individual has performed none or all of the actions listed, he or she may lie so as to not reveal that he or she has performed (or not) the sensitive item. Thus, all of the lists are designed to include items rarely expected from the same individual, so that most individuals will have performed at least one of the control items but not all of them.

The other assumption inherent in the list experiment is that there is not a "design effect". That is, adding an item to the list will not have an effect upon the responses for the other items on the list, a "design effect" would mean the items are not independent from each other. Thus, we need to test whether the responses on the control items in the list with the sensitive item are significantly different from the responses on the control items in the list without it. New techniques developed for testing this assumption allow us to compare these responses and, ideally, accept the null hypothesis of no design effect.[9] More specifically, we can identify joint probabilities by comparing the treatment group to the control group, and we expect each probability to be equal to or greater than zero because otherwise there is likely downshifting in the control group. Using a test of two stochastic dominance relationships based on expectations about the joint probability, we can compare the relationships within each number of list items given and emerge with a minimum probability. Using a Bonferroni correction, we reject the joint null if the minimum probability is less than a set alpha.[10] In the list experiments we conducted, the list experiments regarding armed convoys, DTO lending, extortion by DTOs, and extortion by the police, all pass the test of no design effect (with, respectively, p=0.66, p=0.37, p=20, p=0.55). The list experiment regarding gun ownership fails the "no design effect" test (p= 0.0007).

The survey was well randomized across rural and urban regions and across localities with different levels of violence, which are two of the factors that we believe should have the most effect on the responses. The complete balance of information can be consulted in the Appendix.

[9] For more explanation and the R code for the test, see Blair and Imai, 2012; for cases of failure in Colombia, see Matanock and García Sánchez, 2011

[10]

EVIDENCE OF *NARCO* PRESENCE IN MEXICAN SOCIETY

The results of the list experiments show a significant presence of criminal organizations all over Mexico, higher than we had anticipated. Table 1 shows the difference in means between the treated and the control groups in the survey for the five list experiments we included.

Table 1 - Average Effect of List Treatment.

Treatment	Average Effect	Standard Error
Convoy	0.38	(0.04)***
Help from criminals	0.12	(0.04)***
Criminal extortion	0.10	(0.04)***
Police extortion	0.11	(0.04)***
Gun ownership	0.15	(0.04)***

*p < .10; **p < .05; ***p < .01.

The list experiments succeeded in providing insight into the prevalence of various criminal activities and citizen responses to them. Although the survey did not include direct questions of sensitive items that could have been asked only to the control group, we know from the pre-testing stage that there are probably large differences in the responses citizens would have given to a direct question. For one thing, the non-response rate is extremely low in the list experiment and it was more than 10 percent in the pre-test. When the question of convoys of armed-men going around the streets in broad daylight was asked directly in a national survey a few weeks earlier, only 27 percent reported seeing that kind of activity, this number jumps an additional 11 percentage points in the list experiment.

The list experiments also allow us to inquire about sensitive issues with a far more unambiguous phrasing than we can in direct questioning. For instance, the 2011 National Survey on Victimization and Public Security Perception (ENVIPE 2011) reports a 28 percent incidence of extortions in Mexico. "Extortion", however, had a very broad definition: "Threats, pressure, or fraud demanding money or goods; or inducing you to do something or precluding you from doing something."[11] In the same *SPSG 2011* we included a similar item, which asked about whether the individual "had received an extortion phone call."[12] Thirty one percent responded affirmatively in this case. In our list experiment we find that 11 percent of the population has been extorted by criminals, a much smaller proportion than in other surveys, using a more direct phrasing: "I have given money to drug or criminal organizations so that they do not harm me." This wording would have certainly generated fear in some respondents, however, the more gentle wording -such as the two I described above- has the problem of including too many situations different from the ones specifically related to criminal organizations, and these could not be disaggregated to allow for a more precise measurement. The narrower wording of the list experiment provides us with much more precise information.

In the following subsections we focus on the evidence from the list experiments, this allows for a more thorough understanding of the presence of organized crime in Mexican society. Specifically, on the list experiments regarding criminal convoys, extortion by criminal organizations, and citizens' asking for help from criminal organizations, we disaggregated the reported effects by different segments in the population and we explore their determinants using

[11] "Amenazas, presiones o engaños para exigirle dinero o bienes; o para que hiciera algo o dejara de hacerlo."
[12] "Le han llamado por teléfono para extorsionarlo."

some of the methods described in Imai (2011) and Blair and Imai (2012), complemented with additional information from the *SPSG 2011*.

Presence of DTOs (Convoy treatment)

A first, though imperfect, approach to the degree to which criminal organizations are present in Mexican society is by inquiring into whether citizens commonly observe criminals freely transiting the streets.

Thirty-eight percent of the respondents presented with the list that included the convoy item (one third of the sample) responded that they have witnessed this kind of activity (Table 1 above). The wording of this sensitive item in the list—"I have seen cars or trucks with armed men who are not policemen in broad daylight"—implies that criminals are relatively confident about not being denounced by citizens to authorities. This type of behavior, which seems to be meant to show citizens who actually controls town, is quite routine among *narcos*.

We can gain further insights if we disaggregate by level of violence and by type of locality. Table 2 shows the difference-in-means test for the convoy experiment for the combined segments. While criminals operate in the open in all these segments in non-trivial proportions there is, surprisingly, a significantly higher presence of *narcos* in low violence areas.

Table 2 - Convoy Treatment

Level of Violence	Urban	Non-urban
High	0.37 (0.10)***	0.29 (0.11)***
Medium	0.36 (0.10)***	0.35 (0.11)***
Low	0.50 (0.10)***	0.40 (0.11)***

*p < .10; **p < .05; ***p < .01.

It should be noted that, based on this measurement, we are not fully quantifying the degree of the overall presence of DTOs in Mexican territory, since it only refers to open transit of *narcos*. Thus, we are not measuring other types of open presence—for instance, the existence of "falcons" or street gangs established at some area in the neighborhood. Therefore, we are probably underestimating the presence of criminal organizations in Mexican territory, that is, things are probably worse than is portrayed in Table 2.

What we are approximating with this list experiment is a very specific strategic behavior of criminals. As we mentioned before, we assume that moving around fully armed in broad daylight is a way in which criminals signal to citizens that they are in charge. If this assumption is plausible it will add to our hypothesis that low-violence localities are more likely places controlled by one single drug cartel or as territories effectively partitioned among DTOs. One may argue that the criminal's decision of operating overtly or covertly is a partial function of the likelihood of being killed by a rival DTO. As a consequence, in disputed territories criminals would tend to operate relatively more covertly, for fear of being targeted by rivals.

Types of Presence of Criminal Organizations (Help and extortion from criminals treatments)

Regarding how insidious DTOs are to everyday life, we pointed out in Table 1 that 12 percent of the treated group recognizes that they ask for help from individuals connected with the drug trade, and 10 percent report being victims of extortion by criminal organizations in the past 6 months, this is a rather high proportion by most interpretations. If Mexico´s adult population is aroun 85 million people, then our results imply that 8.5 million citizens have been extorted by criminals and 10.2 millions have asked for help from criminals.

In order to disaggregate the results by different segments of the population, we first present the difference in means tests and we then conduct multivariate analysis to show the differences between methods. We do this since conducting multivariate analysis is a relatively novel procedure for list experiments, which traditionally have been analyzed using difference-in-means tests (Corstange, 2009; Blair and Imai, 2012).

Our analysis shows that citizens are not targeted equally across the country. Using difference-in-means tests we find rather different patterns of relationships between criminals and the population depending upon level of violence and type of locality. In the municipalities in which we find significant evidence of extortion or "help", the percentage of the population who are extorted by criminals, or ask for help from criminals, is above 20 percent in most cases (See Tables 3 and 4).

Table 3 - Help from Narco Treatment

Level of Violence	Urban	Non-urban
High	0.10 (0.09)	0.05 (0.10)
Medium	0.20 (0.10)**	0.07 (0.10)
Low	0.24 (0.09)***	0.15 (0.10)

*p < .10; **p < .05; ***p < .01.

Table 4 - Extortion by Narcos Treatment

Level of Violence	Urban	Non-urban
High	0.23 (0.09)***	0.22 (0.10)**
Medium	0.01 (0.08)	0.15 (0.09)*
Low	0.12 (0.09)	0.16 (0.10)

*p < .10; **p < .05; ***p < .01.

According to these preliminary results, the differences in the way *narcos* relate to citizens across these segments are relatively clear. On the one hand, criminals extort citizens—and likely harass them in many other ways—in high violence localities, both urban and non-urban, in almost equal proportions. It seems that when rival DTOs are in conflict, citizens end up paying the bill. Given that competition for preying upon citizens exists, criminals may have incentives to extract as much as possible from citizens—beyond an "efficient" tax that would allow for future collection, very much as the roving bandits in Olson (1993)—and/or to intimidate them in order to attempt to signal that they are gaining control over the territory.

On the other hand, we may infer that DTOs in low-violence municipalities either do not face credible competition or have solved their commitment problems for an effective partition of the territory. In either case, criminal organizations face no credible threat and, thus, can establish a more long-term relationship with society in which DTOs can establish themselves as power brokers in the zone, even dispensing favors to citizens. In our meeting with enumerators we were told that it is not uncommon that citizens argue that there are "good narcos who protect our town" or that "narcos generate employment and get the economy moving."

Individuals inhabiting low-violence places, however, cannot escape from all extortions. We find that police, the ones supposed to protect them, extort citizens in urban settings. Surprisingly enough, the extortion rate is not different from the one observed in the list experiment for criminals, which comes in at 11 percent (See Table 5). This is a rather disturbing finding, which seems to accurately portray the daily life of many Mexicans.

Table 5 - Extortion by Police Treatment

Level of Violence	Urban	Non-urban
High	0.11 (0.09)	0.19 (0.09)**
Medium	0.08 (0.09)	0.00 (0.10)
Low	0.17 (0.09)**	0.09 (0.09)

*p < .10; **p < .05; ***p < .01.

In addition to difference-in-means tests, we used multivariate regression analysis of survey data for list experiments on the basis of Imai (2011) and Blair and Imai (2012).[13] We specified a linear model with identical covariates for the two treatments: extortion and help from criminals. As explanatory variables we included a set of demographic variables—sex, age, education, and type of locality (urban and non-urban). We also include two indicators of the level of economic development in the municipalities in the sample, the unemployment rate in 2010 and a marginalization index.[14]

In addition, we included three variables that approximate different aspects of citizens' relation to their societal environment using data from the *SPSG 2011*. First, a *conversation index* that was constructed using factor analysis from a battery of questions that ask about the frequency with which of individuals have conversations with neighbors, family, friends and work mates. Second, we include a *media exposure index* constructed from a set of questions that asked about the frequency with which individuals are exposed to news in radio, TV and newspapers.

Finally, a *social networks variable* was constructed following the logic of Calvo and Murillo (2004 and 2007), and McCarty et al. (2005), but with a different structure given that the

[13] We use the *List* 3.0 package for R.
[14] The marginalization index comes from the National Population Council (Conapo). For details on the index´s construction see: http://www.conapo.gob.mx/index.php?option=com_content&view=article&id=487&Itemid=194.

objectives we pursue with this variable are slightly different from the originals. We utilize a set of questions that asked individuals how many persons with a specific name they know; there were a total of six names.[15] To "know" someone was defined to the interviewee as someone that can recognize him by name, that he knows how to contact -either by phone, mail or personally- and with whom he has had contact with in the previous two years. On the basis of this information we created the social networks variable as the sum of the number of persons with the name *i* that every individual *j* knows multiplied by the inverse proportion (ρ) of that name in the population. This function rewards knowing individuals with rare names in the population, such that,[16]

$$Social\ networks_j = \sum_{i=1}^{6} name_i * (1/\rho_i)$$

Table 6 shows the coefficients and standard errors of the models. The coefficients of these variables are robust to different alternative specifications.[17]

[15] The names we tested were: Guadalupe, Juan, Laura, Jesús, Juana, and César.
[16] Details on the construction of the indexes and any other details regarding the variables can be consulted upon request to the authors.
[17] The additional models are available upon request to the authors.

Table 6 – Multivariate regression model (Standard errors in parenthesis)

	Help from criminals		Extortion from criminals	
	Sensitive item	Control items	Sensitive item	Control items
(Intercept)	0.196	1.462	0.380	0.800
	(0.288)	(0.206)	(0.289)	(0.211)
Women	-0.094	-0.093	-0.186	0.214
	(0.084)	(0.057)	(0.080)	(0.053)
Age	0.020	-0.055	0.009	0.012
	(0.031)	(0.022)	(0.031)	(0.021)
Education	0.020	0.018	0.012	-0.006
	(0.015)	(0.011)	(0.014)	(0.010)
Urban locality	-0.153	-0.013	-0.063	0.049
	(0.091)	(0.063)	(0.088)	(0.061)
Conversation index	-0.020	0.079	0.018	0.034
	(0.043)	(0.03)	(0.045)	(0.029)
Media exposure index	-0.103	0.062	-0.008	0.067
	(0.042)	(0.029)	(0.046)	(0.031)
Low social networks	0.195	-0.287	0.170	-0.313
	(0.101)	(0.068)	(0.100)	(0.064)
High social networks	0.118	0.022	-0.038	0.033
	(-0.100)	(0.072)	(0.101)	(0.068)
High violence (municipality)	0.041	0.035	0.317	-0.071
	(0.109)	(0.076)	(0.103)	(0.071)
Low violence (municipality)	0.023	0.088	0.100	-0.043
	(0.114)	(0.080)	(0.112)	(0.078)
Unemployed (% municipality)	-6.8E-06	5.6E-06	-2.1E-06	7.4E-07
	(4.9E-06)	(3.5E-06)	(4.8E-06)	(3.3E-06)
Marginalization Index (municipality)	-0.072	0.019	0.138	0.008
	(0.065)	(0.045)	(0.068)	(0.046)

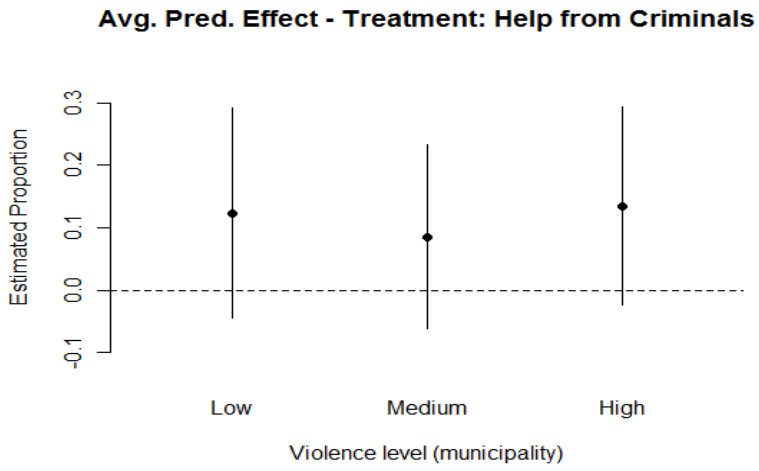
Based on the above model, we focus our analysis on three variables from the model that can shed light on the differences across individuals and localities that are extorted and/or helped by criminals: level of violence, social networks, and marginalization.

(a) Level of violence and type of locality

The multivariate regression model shows some different patterns compared to the difference-in-means test for the "help from narcos" treatment, and similar results for the "extortion by criminals".

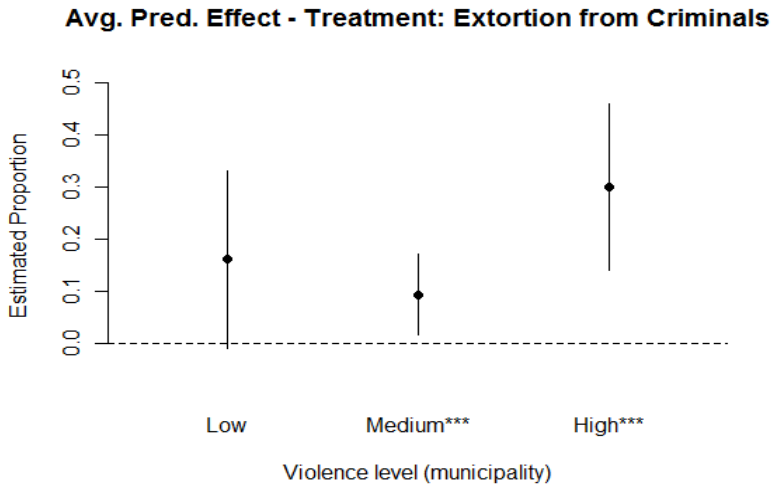
Figures 2 and 3 shows the predicted effects for the level of violence at the municipal level.[18] We find that citizens in all levels of violence are equally likely to ask for help from criminals, but that citizens, on average, are more likely to be extorted in high violence municipalities as compared to low and medium violence municipalities. Note that the low violence interval contains the zero, although low and high intervals overlap in some degree.

Figure 2



[18] For generating the predictions and confidence intervals we use the predict method for item count technique in the List package for R as specified in Imai (2011) and Blair and Imai (2012).

Figure 3



From these results we may infer that criminals do indeed have a relatively worse relationship with citizens in high violence areas, as compared to low and medium violence areas.

Figures 4 and 5 further disaggregate the list experiment results by predicting, *ceteris paribus*, the treatment effect for different combinations of the level of violence and the type of locality; these results approximate a multivariate version of the difference-in-means tests we presented on tables 3 and 4. We can surmise from Figure 4 that there are differences on the average percentage of citizens asking for help by type of locality in which citizens live. Individuals in non-urban localities are more prone to ask for help from criminals—although with relatively high statistical uncertainty. Extortions on average are more frequent in high-violence non-urban localities, while the lowest incidence is observed in low-violence urban localities.

Figure 4

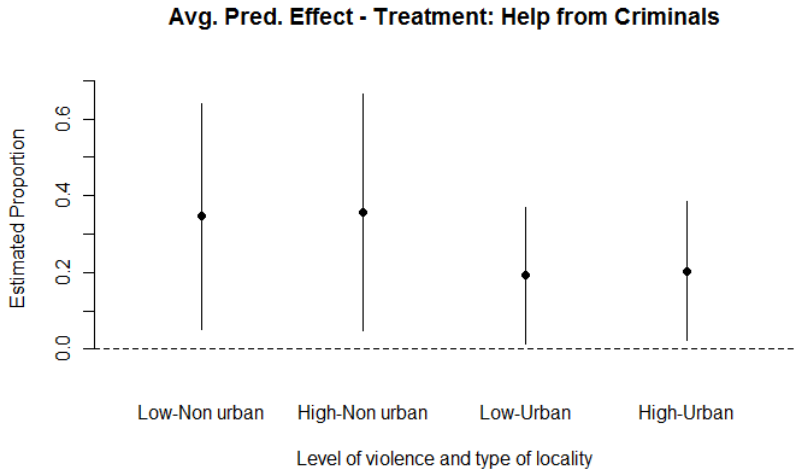
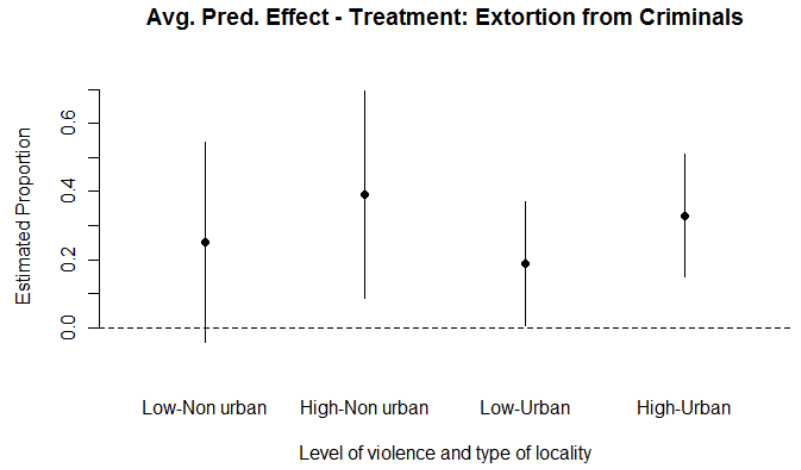


Figure 5



These results reinforce the logic that high-violence localities will show a higher prevalence of predatory narcos, although it does not confirm that stationary narcos are more present in lower violence areas. Criminals have a better relationship with citizens in non-urban areas, most likely because hiding is more difficult in these territories due to lower population density and it is easier to know who is who. In urban zones it may be easier for criminals to live undercover.

Citizens' cooperation, therefore, plays a fundamental role in non-urban areas for the survival of criminals. Coercive strategies to incentivize citizens' silence are harder to sustain in the long-term in the countryside.

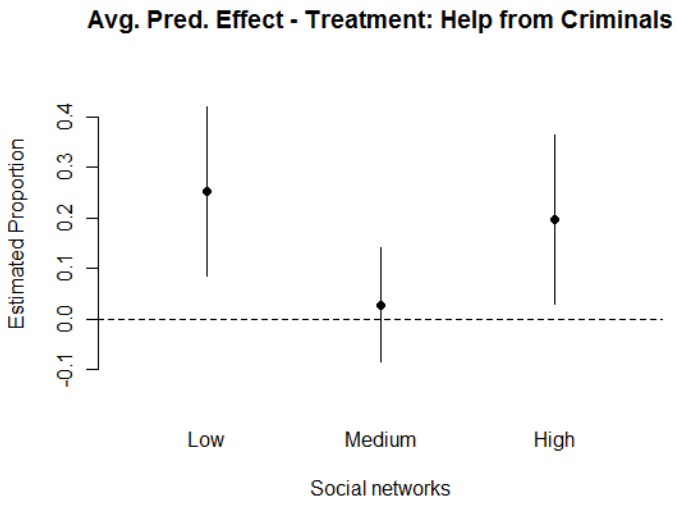
(b) Social networks

As we pointed out above, key to the survival of criminals is some degree of societal support, be it coerced or voluntary. In that sense, the degree of cohesion in a society would determine the degree and type of embeddedness of criminals within it. The average predicted effects of the model show different relationships between criminals and society as a function of the extent of citizens' social networks.

As shown in Figure 6, the extreme quartiles of low and high social networks are more likely to ask for help from criminals; the medium networks category is non-significant. Low social networks imply citizens that have relatively less support instances, thus, these individuals should be willing to consider narcos as a source of support. Similarly, other works have found that individuals with ampler social networks are less likely to fear being victim of a crime (Gainey et al., 2010; Magaloni et al., forthcoming).

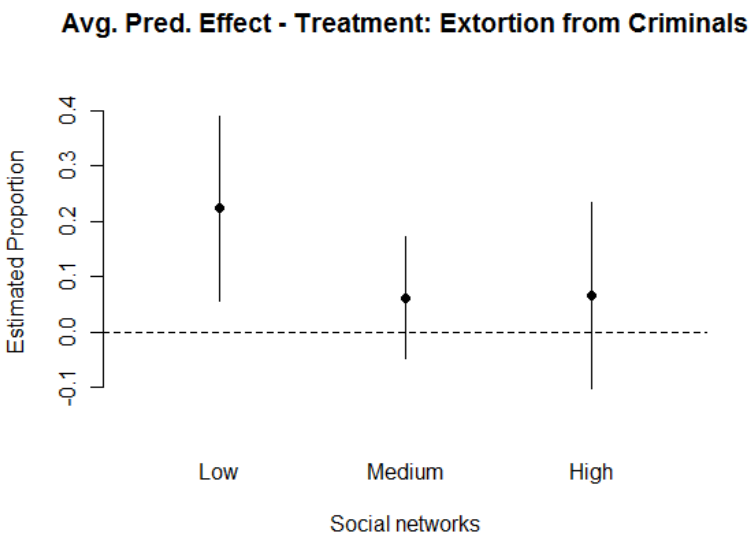
The high incidence in individuals with high social networks is more puzzling. One possible explanation is that citizens with high social networks are valuable targets for criminals to co-opt, since these types of citizens would provide *narcos* with a way into society. *Narcos*, thus, have incentives to interact with these individuals.

Figure 6



The picture is clearer regarding extortion from criminals. On the one hand, individuals with medium and high social networks are not targeted by criminal organizations; the proportion of extorted individuals in these segments is statistically no different from zero. On the other hand, individuals immersed in low social networks are the preferred victims of extortion (Figure 7), perhaps because these individuals are weakly equipped to resist criminal organizations. In the absence of a trustworthy police force—which is the case in many places in Mexico—the only instance left available for help is the family and the community. If an individual is not socially connected, then he has practically no one to ask for protection, and is easily preyed upon by criminals.

Figure 7

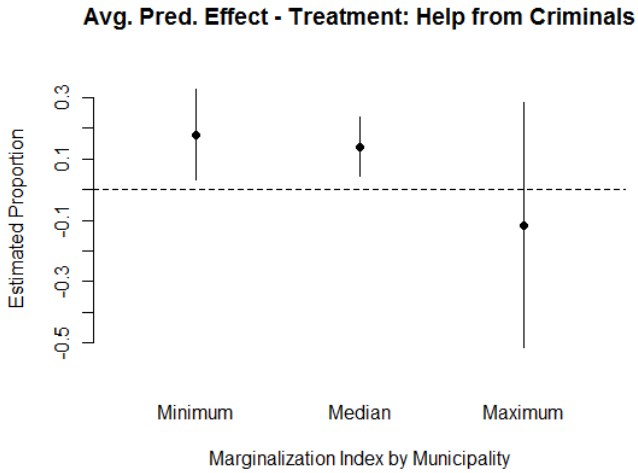


(c) Marginalization

Finally, we estimate the average predicted effects of the marginalization index at the municipal level. We also find relatively clear patterns here. It is individuals in poorer localities who are extorted by criminals and citizens in low and medium marginalization localities who get help from criminals.

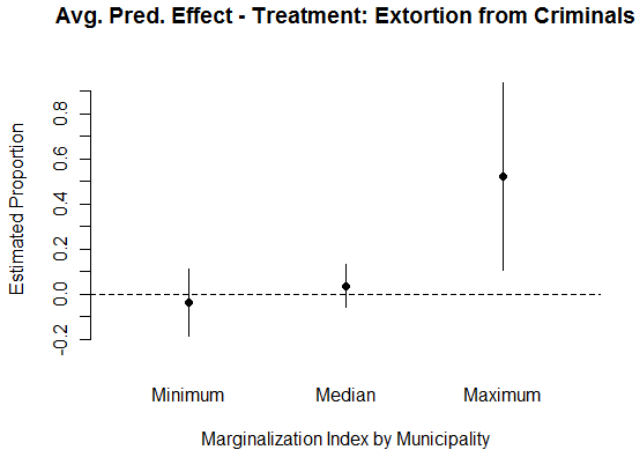
We find that it is not citizens in worse-off localities who get help from criminals as we may have expected. On the contrary, it is individuals living in localities of low and medium marginalization who receive certain benefits from *narcos*. Likely there is some characteristic of the communities of the different levels of marginalization explaining why it is the case that the narcos choose to behave more sympathetically to citizens in relatively well-off communities (Figure 8).

Figure 8



In the absence of a trustable and effective police force, citizens in worse economic conditions are relatively in more danger than well-off citizens, who can afford to protect themselves with their own means when the State organization is incapable of protecting its citizens. Note as well that high marginalization may also be signaling the absence of effective public institutions, including police organizations. Therefore, individuals in poorer communities are then at higher risk than those in relatively richer areas of being extorted by criminals (Figure 9).

Figure 9



DISCUSSION AND FURTHER RESEARCH

This paper adds to our knowledge of crime and violence both methodologically and substantively. Methodologically, we contribute to a growing literature which uses list experiments and other techniques to generate valid inferences about sensitive issues in conflict zones. To our knowledge, the data we present constitutes the first list experiment on crime and violence done in Mexico. We also generate valuable information for the logistics of field work in Mexico and similar zones with high incidences of crime and violence.

While our research contributes towards better methodologies for the study of crime and violence, there are improvements that can be implemented in future research. The subject of societal support of police forces and/or DTOs is an issue that we cannot fully address with the *SPSG 2011* data, or any other observations that are available. One potential candidate to use is endorsement experiments as seen in Lyall et al. (2011). However, it is not feasible to implement endorsement experiments exactly as presented in Lyall et al. (2011), because they require the presentation of a policy to which both combatants agree, and then presenting the policy to interviewees. Unfortunately, in the case of the fight against organized crime, there are no policies in which all the parts in conflict agree; it is usually a one-dimensional space in which criminals aim at violating the law and the State at enforcing it. We may, however, implement a modified version, more like a traditional frame experiment.[19]

On the substantive side, our work adds for a better understanding on the mechanics of DTOs' embeddedness in society. Understanding the degree of penetration of criminal organizations in society, and how criminals relate to citizens is key to understand (a) the kind of harm delinquents

[19] For instance, we may ask a control group its position about a policy for which there is a known policy position from the government/criminals, without mentioning any source; then to the treated group we add the source of the policy and then ask the interviewee position on the issue. The difference on proportions in favor of the policy between the two groups would be approximate endorsement effect for one of the parts in conflict.

are inflicting upon society, and (b) the sort of policies that State officials should implement in order to combat criminal organizations.

For the Mexican case, there is still much disagreement and a paucity of academic work on Mexico's fight against organized crime. Our work provides valuable information for understanding the causes and effects of the current situation of crime and violence. From our results, we infer that criminals follow different approaches in their interactions with citizens.

On the one hand, in high violence municipalities, criminals may follow a coercive approach, extorting citizens, like the roving bandits in Olson. The likely reason for this is that, in these areas, narcos have weak control over the territory and they tend to have a short time-horizon, which induces them to prey upon citizens. Individuals with low social networks are also more extorted on average since the absence of trustworthy police organizations leave these individuals at the mercy of criminals, with no one to go to for help. Finally, individuals inhabiting relatively poorer communities are also more extorted, ceteris paribus.

On the other hand, delinquents may follow a relatively sympathetic approach to citizens by helping them, likely in exchange for a payment, much like the stationary bandits in Olson. However, our results are less clear here than in the case of extortion. It seems that "good narcos" are dispensing favors in low, medium, and high violence communities in similar proportions. They also dispense favors slightly more on average in non-urban localities, which are places where the community can more easily finger them to authorities. Dispensing favors is a way to buy citizens' complicity. We observe a higher proportion of citizens receiving help from delinquents in rich and medium communities than in poorer areas. Individuals with low and high social networks receive similar proportions of help from criminals. We speculate that in both cases criminals would be interested in infiltrating these segments of society, since are relevant

for constructing wider and denser networks. This last result is quite troubling, since it indicates that narcos have been able to penetrate even the most cohesive segments of society.

In terms of policy applications our results point to the urgency of strengthen the social fabric in Mexico. Criminal organizations are widely present in Mexican society and in many cases citizens are passively or actively helping to their survival.

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Appendix - Treatment and Control Groups Balance

	Convoys and DTO Extortion		**DTO's help and Police Extortion**	
	Control	**Treatment**	**Control**	**Treatment**
	n %	n %	n %	n %
Gender: Male	427 47.44	442 49.11	427 47.44	484 53.78
Gender: Female	473 52.56	458 50.89	473 52.56	416 46.22
Age: 18-24	144 16.00	171 19.00	144 16.00	166 18.44
Age: 25-32	171 19.00	195 21.67	171 19.00	165 18.33
Age: 33-40	173 19.22	176 19.56	173 19.22	181 20.11
Age: 41-53	213 23.67	194 21.56	213 23.67	190 21.11
Age: 54+	199 22.11	164 18.22	199 22.11	198 22.00
Education: Primary at most	353 39.22	311 34.59	353 39.22	335 37.22
Education: Secondary+	410 45.56	448 49.83	410 45.56	401 44.56
Education: University+	137 15.22	140 15.57	137 15.22	164 18.22
Income: $1-$1,500	195 26.46	191 25.43	195 26.46	189 25.82
Income: $1,501-$3,000	238 32.29	268 35.69	238 32.29	222 30.33
Income: $3,001-$6,000	204 27.68	191 25.43	204 27.68	212 28.96
Income: $6,001-$1mil	67 9.09	74 9.85	67 9.09	77 10.52
Income: >$1million	33 4.48	27 3.60	33 4.48	32 4.37