Violence, In Mexico?
Homicide in a Democratizing Society

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Abstract

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Scholars who study Mexico have recently argued that the process of democratization the country went through in the past three decades contributed to the upsurge in violence we are currently witnessing. As one regime collapsed and the other emerged, change begot violence. Amid the flood of unequivocal assertions, however, a simple question remains: exactly how violent is Mexico? So far, the academic literature has failed to paint a systematic picture of patterns of violence in Mexico. In this thesis, I set the record straight regarding violence in Mexico and its connection to the country's transition to democracy. I make two empirical contributions that are theoretically consequential. First, I show that regardless of the data source used, violence in Mexico as measured by homicide rates decreased steadily since the early 1990s until 2007. Second, using a series of multiple regression models to determine the effect of political competition and voting participation on homicide rates, I show that democracy has not made Mexico more violent, but less. These findings force us to revisit our understanding of late twentieth century Mexico as a violent, unruly society, as well as debates on the causes of violence in the last few years. They also open new paths for theoretical reflection, raising the puzzle of change without disruption.

To my mother,
who opened the door to knowledge and self-discovery for me

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It might at first seem needless to say that before social facts can be "explained," it is advisable to ensure that they actually are facts.
Robert K. Merton (1959:xiii)

In a 1959 introduction to a book he co-edited, Robert K. Merton reminds sociologists of what is perhaps the single most challenging and important step in research: devising a question. He begins by posing a contrast between inquiry in science and inquiry in everyday life. People, especially children, Merton (1959:ix) tells us, pose questions all the time; questions, he adds, that are often difficult to answer. But the reverse is true in social science. Formulating a significant scientific question is no easy task. It is not simply a matter of selecting "one or another social fact, declaring… [yourself] puzzled by it, and… [asking] 'why is it so?" (Merton 1959:xi). Research questions are the result of a process of discovery. They require devoted immersion in accumulated knowledge. They are not the beginning of research; indeed, often they are not even its midpoint. Questions are reformulated again and again as the scholar sifts through more and more information and compares evidence gathered in the field with initial assumptions, relevant arguments, and prevailing theoretical frameworks. As the scholar hones in on what is puzzling about her object of interest, the question begins to emerge, but the process is slow, long, and characterized by frequent setbacks. Once the question is formulated, however, the path toward the answer has been half traversed already. "The experience of scientists is summed up in the adage that it is often more difficult to find and to formulate a problem than to solve it" (Merton 1959:ix).

Merton further notes that ascertaining the facts is a key part of this process. Although questions that seek to confirm patterns in social life do not constitute sociological problems proper, they are an important step in that direction (Merton 1959:xiv). It would be unproductive to ask, for example, if there is a connection between deregulation and financial crises if the fact of deregulation had not been established first. Likewise, inquiring about the relationship between religious beliefs and income levels requires that you first confirm variations in income across religious denominations. This may seem like an obvious point, but Merton (1959:xiii) reminds us that all too often science has produced explanations for things that never were:

> Consider only Seneca explaining why some waters are so dense that no object, however heavy, will sink in them or explaining why lightening freezes wine; Descartes explaining why the pineal gland could exist only in man just a short time before Niels Stensen discovered it in other animals; Hegel solemnly explaining why there could be only seven planets and none between Mars and Jupiter just as Piazzi was discovering Ceres in that very region; the talented physiologist Johannes Muller explaining why the rate of transmission of the nerve impulse could never be measured just a few years before Hemholtz proceeded to measure it; J.S. Mill explaining the impossibility of sound statistical studies of human behavior long after Quetelet and others had conducted such studies.

No other field, Merton continues, requires more careful scrutiny of basic facts than sociology. "Everyman, confident in his acquaintance with the society of which he is inevitably a part, develops firm opinions about how it works (Merton 1959:xv)." And, I would add, even those who tend to be more cautious with the limitations of their personal views are constantly

exposed to a deluge of information from the mass media about how society works, information that is often skewed if not outright fallacious. All of this "heightens the importance of fact-finding as a frequent prelude to the statement of a genuine sociological problem" (Merton 1959:xv). Belittling fact-finding as 'mere' fact-finding is a serious mistake scholars should take careful steps to avoid (Merton 1959:xiv). Figuring out the facts is not an issue of secondary importance; it is a central part of producing sound research, and often, a difficult one at that.

Merton's reflections could not be more relevant to the current media and scholarly discussions about violence and democracy in Mexico. In recent years, the media, both in Mexico and abroad, as well as non-profit organizations and the U.S. government have conveyed the notion that violence in Mexico has reached startling proportions. In 2008, the U.S. Joint Forces' annual report made the following claim under the heading *Weak and Failing States*: "In terms of worst-case scenarios for the Joint Force and indeed the world, two large and important states bear consideration for a rapid and sudden collapse: Pakistan and Mexico" (U.S. Joint Forces Command 2008:36). According to this report, the Mexican government's efforts to curb drug-cartel violence and corruption in public institutions have systematically failed and the situation could soon become a national security problem for the United States. The New York Times and The Washington Post have developed special online sections covering drug violence in Mexico and its social, political, and economic ramifications (The New York Times 2010; Washington Post 2010). Mexican newspapers have undertaken similar projects (Reforma 2011g; El Universal 2011) and *Proceso* (2011), a left-wing magazine that conducts serious investigative journalism, has focused its content almost exclusively on this issue. The impression one gets from these news stories is that Mexico is a lawless country where homicides, kidnappings, and corruption are rampant. Newspapers in Mexico (Nájar 2005; Alzaga 2008; Garcia 2009) have compared the situation with the dramatic death toll left by the war between paramilitary groups, the state, and drug trafficking organizations in Columbia during the late 1980s and early 1990s. These sources portray Mexico as a country on the brink of implosion.

Scholars studying political development in Mexico have turned their attention to issues of violence as well. There is a burgeoning literature on the quality of democracy in Mexico, Latin America, and other developing countries more broadly that addresses how violence and public insecurity undermine citizenship, civil society, the rule of law, and the emergence of democratic institutions (e.g. Caldeira and Holston 1999; Bailey and Godson 2000; Caldeira 2000, especially chapters 3-5; O'Donnell 2004; Diamond and Morlino 2005). A second, related line of research has argued not only that violence and public insecurity undermine democratic institutions, but that the process of democratization itself contributed to higher levels of violence in Mexico (Villarreal 2002; Davis 2006).[1]

This view of Mexico as a violent country is not new, nor is it confined to either popular or elite audiences in Mexico or abroad. Indeed, Mexico has historically conjured images of death and disorder. There is a symbolic continuity that runs across depictions of Aztecs as savages excising the hearts of ritual victims (Keen 1990; Graulich 2000), unruly revolutionary bandits (Frazer 2006), corrupt twentieth-century politicians (Camp 1990, 2002), and ruthless modern day drug-traffickers (Poppa 1998; Osorno 2009; Grayson 2009; Reyna 2011). Perhaps in a more romantic hue, but one no less infused with unsettling connotations, images of EZLN rebels overtaking the streets of San Cristóbal convey a similar impression (Womack 1999). These representations are manifested in literature and popular culture as well. From the works of Juan Rulfo (1989, 2006) and Octavio Paz (2010) to the contemporary cult of Saint Death (*La*

[1] For a journalistic but interesting version of this argument see O'Neil (2009).

Santa Muerte) (Lomnitz 2005:486-496) and the day of the dead celebrations in November (Brandes 1998a, 1998b, 2003), Mexico's "peculiar" relationship with death and violence has been consecrated as a distinctively national trait (Lomnitz 2005). Whether grim or romantic, dreadful or jocund, the picture is always one of a country untamed.

The specter of Merton's reflections on sociological questions and social facts looms large over these discussions. Amid the flood of unequivocal assertions a simple question remains: exactly how violent is Mexico? The problem with a great deal of the literature on violence and democracy in Mexico, as well as the information disseminated by pundits and the media, is that it fails to present a systematic picture of patterns of violence in the country, opting, instead, for the use of reputedly shocking numbers—"6,000 deaths one year, 10,000 the next"—as if isolated values were faithful indicators of trends or magnitudes. For example, in their book on organized crime and democracy in Mexico, Bailey and Godson (2000:12) first claim that crime rates in Mexico soared during the 1990s, especially after the 1994-1995 peso devaluation. Ironically, however, they immediately follow this claim by noting that it is based on government reports that are unreliable because they are incomplete and use divergent classifications of crime (Bailey and Godson 2000:12-14). In the end, their most robust assertion is fairly unsurprising: "the Mexico City metropolitan area is by far the subregion most seriously affected by crime in the country" (Bailey and Godson 2000:13). And even that claim is based on a single report from Mexico City's Legislative Assembly, the methodological validity of which is not discussed.

In a similar vein, political pundit Denise Dresser gave a speech in 2009 on law enforcement and drug-cartel violence in Mexico before the U.S. Senate Subcommittee on Crime and Drugs and the Senate Caucus on International Narcotics Control. In her opening remarks, she stated: "My home has become a place where too many people die, gunned down by a drug-trafficker, or assaulted by a robber, or shot by an ill-trained law enforcement officer or kidnapped and strangled by a member of a criminal gang" (2009:1). Given the severity of such an observation, one would expect her to marshal considerable evidence showing this to be the case. In fact, however, she presents only one figure in her entire testimony regarding the magnitude of homicide rates in Mexico: that over 6,000 people died in 2008 as a result of drug related violence (2009:1).

It is striking that otherwise serious works fail to properly contextualize violence from a historical, geographical, or cross-national perspective, especially when the magnitude of violence itself is the focus of the arguments. The assertion that rates of violence are too high or that this or that many homicides constitute a shocking amount demand a comparison with previous rates or rates in other geographies. In the absence of temporal or spatial markers, numbers remain meaningless.

This thesis has a modest goal. I intend to set the record straight regarding violence in Mexico as measured by homicide rates.[2] I begin by showing how the argument that democratization led to more violence in Mexico emerged from a dialogue between a theoretical tradition in sociology that posits the disruptive nature of social change and the literature on the quality of newly established democratic regimes. In this first part I also critically assess the evidence presented for this argument in the case of Mexico. In the second chapter I show how challenging it is to get the facts straight when dealing with crime. This chapter brings together findings from the secondary literature with an assessment of different data sources to explain

[2] Although the terminology varies across countries, legal systems distinguish between voluntary and involuntary homicide. This paper focuses exclusively on the first type, but the generic term 'homicide' is used throughout for brevity.

how crime rates are socially produced and what this means for our understanding of the real amount of crime in any society. Part of this chapter's contribution consists in mapping a research agenda required to have a better sense of the quality of homicide data for Mexico. Then, in the third chapter, I show that regardless of the data source used, there is a clear empirical pattern: violence in Mexico as measured by homicide rates decreased steadily since the early 1990s until 2007. The fact that Mexico had become considerably more peaceful in the course of the past twenty years—and according to some, the past 100 years—does not, however, disprove the connection between democratization and violence. Indeed, one could argue that had it not been for democracy, the downward trend in homicide rates would have been much steeper. I present, however, the findings from a statistical study suggesting that democracy has not made Mexico more violent, but less. I conclude with a discussion about how these findings set the stage for a more productive research agenda regarding violence and democracy in Mexico.

CHAPTER I: CHANGE, DISORDER, AND VIOLENCE

Contrary to widespread assumption, not all plausible beliefs about society are necessarily true.
Robert K. Merton (1959:xv)

During the second half of the twentieth century, the literature on democracy in both political science and sociology focused mostly on studying the factors that contribute to the emergence of democratic regimes (Lipset 1959:75, 83-85; [1960] 1963; 1994:3-4; Moore 1967:413-32; Dahl 1971:74; Therborn 1977; O'Donnell and Schmitter 1986; O'Donnell, Schmitter, and Whitehead 1986; Mann 1988:188-209; Huntington 1991; Rueschemeyer, Stephens, and Stephens 1992; Linz and Stepan 1996). As a whole, this body of work revealed there is no single path to democracy and a range of factors can produce the transition from a non-democratic to a democratic political regime. Although research on democratization continues—with special emphasis on Eastern Europe and Africa—a few years after several countries in Europe, Asia, and Latin America transitioned to democracy in the last quarter of the twentieth century (Huntington 1991), scholars became interested in studying the quality of these newly established regimes (Caldeira and Holston 1999; O'Donnell 2004). They were puzzled by the fact that anti-democratic practices, institutions, and outcomes persisted in these countries despite having achieved what the mainstream literature in political science (Schumpeter 1947:269-271; Dahl 1971:1-9) considers to be the basic features of democracy—namely, competitive elections and political rights, including voting rights, free speech, and the right of association. This research program has been primarily organized around three interrelated tasks: 1) properly characterizing new regimes in light of their democratic and non-democratic features; 2) identifying how different factors undermine the performance of democratic institutions; and 3) expanding the definition of democracy to include attributes beyond electoral procedures. Findings from this line of research have recently been combined with a theoretical tradition in sociology and political science about the disruptive effects of social change to produce the argument that democratization itself can be a source of violence. This argument has been used to explain violence in contemporary Mexico, but, as I will show, it lacks empirical support.

At the heart of all research on democracy lies a methodological conundrum that has two parts. First, scholars seek to use the concept of democracy as a descriptive or analytical category, yet it is heavily invested with normative and ideological meaning. In other words, it is difficult to disentangle what a democracy is (descriptive category) from what it should be and what it should do (normative imperatives). Second, the prevalent model of democracy emerged from studying culturally and historically specific societies—Western Europe and the United States—but it is intended to help us understand democratic regimes everywhere, including regimes in societies with dramatically different cultural and historical configurations.

In the late 1940s, Schumpeter suggested these methodological dilemmas could be resolved by focusing not on the sources ('will of the people') or outcomes ('common good') of democracy, but on its procedures. He argued that the 'will of the people' and the 'common good' are idyllic notions, too ambiguous to serve as useful empirical parameters for judging whether existing regimes are democratic. Instead, he proposed democracy be defined as an "institutional arrangement for arriving at political decisions in which individuals acquire the power to decide by means of a competitive struggle for the people's vote" (Schumpeter 1947:269). Because the central part of this definition is the selection of representatives, its conceptual core is the notion of "free competition for a free vote" (Schumpeter 1947:271).

Although scholars subsequently introduced additional factors and subtle shifts of emphasis (e.g. Dahl 1971:2-3), competition and political rights remain the central components of the mainstream definition of democracy among political scientists.

In the late 1980s and 1990s when scholars studying Latin America began to take a closer look at the newly established democracies in the region, they found the procedural definition of democracy inadequate. The persistence of non-democratic factors despite the establishment of electoral competition and political rights seemed to contradict the expectations produced by the model inspired on western democracies. In light of that model, political regimes in Latin America seemed to be underperforming or dysfunctional democracies. In their efforts to capture the hybrid nature of these regimes, scholars produced a slew of new concepts: delegative democracies (O'Donnell 1992; 1993: 1356, 1367), illiberal democracies (Zakaria 1997; Smith and Ziegler 2008), populist democracies (Drake 2009, especially chapters five and six), domesticated democracies (Smith 2005), and electoral caudillismos (Close and Deonandan 2004).[3]

Initially, the logic underlying these concepts was that competitive elections and political rights had done nothing to eliminate important aspects of the fallen authoritarian regimes. For example, when discussing the transition to democracy in Brazil, O'Donnell (1988) argued that authoritarian military and bureaucratic elites continued to hold important positions of power and their presence could inhibit the development of a truly democratic regime. In addition, he claimed that only a system in which "the web of political relations that develops tends to encourage… democratic relations… in other areas of social life" is genuinely democratic (O'Donnell 1988: 297-298). So elections, opposition, and the circulation of elites are no longer sufficient. In this and other texts, O'Donnell argues for raising the bar for democracy beyond elections and political rights to include 'democratic' relations outside the realm of institutionalized politics.

A few scholars, however, began to formulate the problems that persisted after democratization as a result of the specific post-democratic conjuncture rather than considering them unresolved legacies from the pre-democratic era (Caldeira and Holston 1999; Méndez, O'Donnell, and Pinheiro 1999:2). For example, Caldeira and Holston (1999) presented descriptive evidence showing that violence and police brutality increased dramatically in Brazil despite having gone through a process of political democratization. They do not claim that democratization produced this upsurge in violence, but they do believe it is mistaken to consider it a remnant of the authoritarian regime that was in place until the early 1980s (Caldeira and Holston 1999:715). They call attention to its novelty as a distinctly "post-democratization phenomenon" that is not to be blamed on the country's authoritarian past (Caldeira and Holston 1999:715). Caldeira and Holston also show that while Brazilians now vote and participate in relatively free elections, the judicial system consistently fails to protect their civil rights, with the poorest members of society carrying the heaviest burden of a corrupt and ineffective court system. This has led each social class to use the resources at their disposal to protect themselves from corrupt government institutions, often by supporting anti-democratic policies such as violent crime-fighting tactics (Caldeira and Holston 1999:712-714).

Some scholars have gone further to claim not simply that the violence and insecurity in newly established democracies in Latin America are a distinct post-democratic phenomenon, but to argue that they are the result of democratization itself (Villarreal 2002; Davis 2006; Karstedt

[3] For a discussion of the methodological foundations of this conceptual proliferation see Collier and Levitsky (1997).

2006; LaFree and Tseloni 2006; Pridemore and Kim 2006). This argument builds on a longstanding tradition in sociology about the destabilizing nature of social change. Indeed, sociology was founded on the notion that significant social transformations are disruptive. Although today the discipline is enshrouded in a progressive hue associated with a stance in favor of social change, its modern founders reacted to the central transformations of their time with a strong sense of apprehension, alarmed by the destruction left in the wake of the French Revolution and the emergence of industrial capitalism. Comte ([1890] 2009:3-4) opposed the political upheavals that followed the revolution in France and argued for piecemeal reforms that would accompany what he viewed as an evolutionary process in history that did not require radical interventions. Likewise, Tocqueville (2003:66-67) thought that without the appropriate checks, the spread of democracy—which he defined as equality of conditions—could devolve into tyranny, as it had done when Napoleon II rose to power. The reactions of other theorists to the multiple transformations that fueled the transition to modernity ranged from despair to optimism, but regardless of their assessments and normative positions, all found the process to be disruptive. Marx and Engels ([1972] 1978; Engels [1972] 1978) viewed the emergence of industrial capitalism as a process that alienated workers. Durkheim (1984:291-328) was crucially concerned with the disintegration produced by anomic forms of the division of labor. And Weber ([1905] 2002:120-121) found that rationalization was depriving the world of meaning.

The arguments about how the transition to democracy produces violence can be roughly grouped into four schools of thought that stem from these theoretical traditions. The Durkheimian approach focuses on how processes of social change can temporarily disrupt the interactions, norms, rituals, and symbolic practices on the basis of which communities maintain social cohesion. The various strands of social control theory constitute the most prominent line of research to emerge from this approach (Janowitz 1975; Meier 1982; Villarreal 2002; Dicristina 2004; LaFree and Tseloni 2006:31-32; Pridemore and Kim 2006). The Tocquevillian perspective directs its attention to culture and emphasizes the role of emergent values, practices, and institutions in producing disruptive social patterns (Karstedt 2006). The Weberian tradition focuses on the state and how processes of social change affect bureaucratic and administrative structures, fragmenting them or creating conditions that make it more likely for them to work in ways that produce violence (Davis 2006). The Marxist tradition has developed arguments based on a dialectical logic in which processes of transition generate contradictory effects that erupt in different forms of violence (LaFree and Tseloni 2006:29-31).

The empirical literature has produced various strands of argumentation within each school as a result of interpreting the theories at the core of each tradition in different ways. In addition, research often combines elements from more than one tradition.[4] As a whole, however, these four schools serve as a useful classification for locating the explanatory mechanisms and conceptual focus of most arguments about the connection between democratization and violence.

In one of the most ambitious articles in this subfield, LaFree and Tseloni (2006) test the connection between the spread of democracy and homicide rates during the second half of the twentieth century in a sample of 44 countries while controlling for economic development, economic inequality, and population structure. They claim to be testing hypotheses derived from different theoretical traditions—including the Durkheimian and Marxist traditions—but the theories are not treated seriously and are only loosely connected to the variables their models

[4] A classic example is Huntington's theory ([1968] 2006) of the social disintegration produced by modernization, which is a combination of Durkheimian and Marxist-Leninist approaches.

actually measure. For instance, they claim the Marxist perspective "predicts that violent crime rates will increase along with the brutalizing effects of the market economies that so far have universally accompanied democratization" (LaFree and Tseloni 2006:26). The problem with this hypothesis, of course, is that it conflates the causal significance of democratization and markets. Previous research has shown that market economies and democracy are not inevitably conjoined (Therborn 1977). And even if they were, that does not make them equivalent causal factors.

Their empirical data are also problematic. Their findings are limited by the fact that most of the countries in their sample are highly industrialized Western societies (LaFree and Tseloni 2006:34-35, 37). As a result, it is unsurprising that they found only small changes in homicide rates across the time period they study (LaFree and Tseloni 2006:38-39, 41). Despite these limitations, LaFree and Tseloni did find some evidence to support the Durkheimian argument that transitional processes are disruptive. Their results show "that countries moving from autocratic to transitional democracies experienced a significant increase in homicide rates" (LaFree and Tseloni 2006:43). They estimate homicide rates increased an average of 54.4 percent by virtue of the transition process (LaFree and Tseloni 2006:42). Indeed, others (e.g. Pridemore and Kim 2006) have found support for the Durkheimian paradigm in the specific context of democratization as well, perhaps making it the most tested framework in this budding literature. The question remains, however, whether this argument, in any of its theoretical variants, has any bearing on Mexico.

Although my analysis is not concerned with the causes behind democratization in Mexico, nor is it a detailed study of the process itself, a few comments have to be made about its general features, timeline, and central benchmarks in order to assess when an increase in violence is likely to be observed if theories about the disruptive nature of social change are correct. For many years, political scientists had a difficult time classifying Mexico's transition to democracy (Rodríguez and Ward 1994; Mainwaring, Brinks, and Pérez-Liñan 2001:54-55). It simply did not fit their prevalent theories about why such processes emerge or how they unfold (O'Donnell and Schmitter 1986; O'Donnell et al. 1986; Linz and Stepan 1996). As Schedler (2000:6) notes, "compared to the early "third wave" transitions in Southern Europe and South America, the Mexican transition… [was] characterized by multiple absences: no collapse, no foundational elections, no big pacts, no constitutional assembly, and no alternation in power." Today, scholars tend to classify Mexico as a "protracted transition" characterized by a gradual erosion of the dominant party's rule that did not culminate in a single foundational act where it formally ceded power to the opposition (Eisenstadt 2001:87-88,101-106; 2004; Martín del Campo and López Leyva 2004:749-753). The process, rather, consisted in a series of prolonged struggles over piecemeal reforms that allowed the opposition to slowly gain ground (Eisenstadt 2001:88; translation mine).[5]

The National Revolutionary Party (*Partido Nacional Revolucionario*, PNR) was founded in 1929 in an effort to organize political competition and put an end to the armed conflict between the regional military bosses that had emerged triumphant from the 1910-1920 revolutionary struggles. The PNR would morph, first, into the Party of the Mexican Revolution (*Partido de la Revolución Mexicana*, PRM) in 1938 under the auspices of President Lázaro

[5] Bangladesh, Indonesia, Kenya, and South Korea are other examples of protracted transitions (Eisenstadt 2001). Portugal, Argentina, Chile, and Uruguay are cases where the process unfolded in a different way, either because external factors intervened to precipitate the regime's fall or the elites at the head of the regime were forced into a formal pact to cede their position.

Cárdenas, and then into the Institutional Revolutionary Party (*Partido de la Revolución Institucional*, PRI) in 1946 under President Manuel Ávila Camacho.

The PRI was a corporatist party that controlled the political system for most of the twentieth century. It won every presidential election from the moment it came to power as the PNR in 1929 until the year 2000. It also won all gubernatorial elections and seats in the senate until the late 1980s. The lower house of Congress was under its control as well, having a two-thirds majority until 1988 and an absolute majority until 1997. Most municipalities—the local level of government in Mexico—were also controlled by the PRI throughout the twentieth century. And until 1997, the executive head of Mexico City was a cabinet-level regent directly appointed by the President, which basically placed the city in the PRI's hands.

Despite these results, the PRI regime was unlike the contemporaneous military dictatorships of Latin America or the totalitarian regimes in early twentieth century Europe. To start with, the 1917 Mexican Constitution granted social and political rights that remained central legal markers throughout the PRI's rule. While there were many discrepancies between written law and its application, these rights were not inconsequential, often pressuring the PRI into concessions it would not have granted otherwise. In addition, political power was firmly in the hands of civilian governments from 1946 onward, with Manuel Ávila Camacho being the last President to emerge from the ranks of military generals. As a result, the PRI regime was less severe in its use of coercion compared to its military counterparts in Latin America. Finally, opposition parties had an important presence in political life throughout this period. Elections were periodically held for positions in all levels of government and although corruption was common, the PRI's interventions did not always come down to simple fraud. For example, presidential elections were held every six years without interruption since 1934, but the PRI's victories sometimes forced it to negotiate legal reforms in order to secure political stability, thereby allowing the opposition to gradually gain ground.

Like any other process, figuring out when the transition to democracy began is an exercise in theoretically informed historical interpretation that is inevitably subject to debate. Some argue the process started as early as the 1960s, citing either the limited electoral reform passed in 1963 (Mabry 1974) or the student protests in 1968 (Loaeza 1989). There are those who consider the electoral reform of 1977, designed to incorporate the left while preserving PRI dominance, as the initial marker (Klesner 1997; Velasco 2005:3). And others find the significant economic, social, and political transformations of the 1980s to be the beginning of the process, focusing either on the PRI's neoliberal turn in economic policy with Miguel de la Madrid's administration (Bruhn 1997; Magaloni 2006; Greene 2007), the consequences of the 1985 earthquake on the growth of civic organizations and the weakening of the regime's legitimacy (Fox and Hernández 1992), or the electoral crisis of the 1988 presidential election (Martín del Campo and López Leyva 2004:750, 758-759).

I am not interested in taking a position in this debate. I do want to show, however, that by the late 1980s, and especially during the 1990s, democratization was well underway, such that any effect on homicide rates should be visible by the late 1990s if not earlier. A few key indicators suffice to make this case.

In terms of electoral outcomes, the opposition began gaining ground at all levels of government in the late 1980s and had become a powerful force by the mid 1990s. Until the late 1980s, opposition parties had won municipal elections only sporadically and no opposition party had won the same municipality two terms in a row. For example, in a brief sketch of the National Action Party's (*Partido de Acción Nacional*, PAN) history, Shirk (2000:27) recounts

that in 1987 the PAN controlled only 18 out of roughly 2,400 municipalities, governing less than one percent of Mexico's population. By 1997 it controlled several important municipalities, which included 15 of the country's 31 state capitals, amounting to 27.6 million people under PAN governments, close to a quarter of the country's population at the time.

In 1989, the PAN was the first opposition party to win a gubernatorial election—Baja California—and be allowed to take office.[6] When the executive head of Mexico City became an elected official in 1997, the Party of the Democratic Revolution (*Partido de la Revolución Democrática*, PRD) won the election and has held on to the capital since then. By the end of 2000, opposition parties controlled 12 of the country's 31 states in addition to the Federal District, governing more than half of Mexico's total population.

There have been ten rounds of federal elections since 1979 and the percentage of votes obtained by the PRI decreased steadily for most of this period.[7] The PRI lost its two-thirds majority in the lower house of congress in 1988 and its absolute majority in 1997. In 1988, the first opposition candidate was voted into the Senate and the PRI lost its two-thirds majority in this chamber in 1997. The 1994 presidential elections were the most transparent and contested elections for this position since the PRI came to power and the ruling party finally lost the presidency to the PAN in 2000. The Federal Electoral Institute (*Instituto Federal Electoral*, IFE), created in 1990 to organize and oversee elections, played a central role in this process.

The 1980s and 1990s were also witness to significant democratic transformations beyond the realm of electoral politics. The National Human Rights Commission (*Comisión Nacional de Derechos Humanos*, CNDH) was created in 1990 and became fully autonomous by the end of the decade, with the 31 states and the Federal District following suit by creating commissions of their own. By the 1990s the press had also achieved its autonomy from the ruling party, becoming a critical source of information and contributing to the expansion of civil society (Lawson 2002, especially chapters five and six). There were also many legal reforms in the last two decades of the twentieth century that strengthened the judicial system and granted it autonomy from the executive power.

I do not want to give the impression that I view Mexico's democratization as a linear process. On the contrary, it has been fairly well documented that the transition progressed at a different pace in different parts of the country at different levels of government. And it remains a highly uneven landscape to this day, with solid democratic institutions in some areas while authoritarian practices persist in others (Fox 1994:114-115; Lawson 2000; Hiskey and Bowler 2005; Velasco 2005, chapter four). Moreover, setbacks have occurred and serious challenges remain in all sides of this process; nevertheless, the landmarks I have presented are indications of significant social transformations. While scholars studying the quality of democracy are right to contend that much has yet to be achieved, the political democratization that has taken place in Mexico already can hardly be denied. And there is relative consensus that this process was well underway by the 1990s (Velasco 2005:18-25), something that is central to my analysis. The question is: did this process produce an increase in violence?

Villarreal (2002) and Davis (2006) answer this question affirmatively and unambiguously.[8] Building on Weber and Durkheim—though their influence goes formally

[6] The PAN seems to have won the gubernatorial election for the state of Chihuahua in 1986, but the PRI resorted to fraud in order to prevent the PAN from taking office (Lau 1989).

[7] The three exceptions were 1991, 2006, and 2009.

[8] Velasco (2005:12-13), on the other hand, establishes only an indirect connection between democratization and violence. He studies the connection between Mexico's transition to democracy and the wave of insurgent

unacknowledged—Davis argues that electoral politics and decentralization fragmented the patronage networks across bureaucratic units and levels of government that had allowed the PRI to manage corrupt police forces and crime levels. As politicians from different political parties came to control positions previously held by the PRI, vicious intra-state and inter-party conflict "paralyzed government and legislative efforts to enact police reform" (Davis 2006:58). In the context of longstanding institutional corruption within police forces, this paralysis led to "rising criminality… and an overall situation of public insecurity in which everyday citizens feel compelled to take the law into their own hands" (Davis 2006:58-59).

Davis focuses mostly on Mexico City and uses Cardenas's failure to reform the Mexico City police and Fox's inability to reform the federal security apparatus as cases that illustrate her argument. Her analysis of the politics during this period correctly points to the difficulties divided governments face to enact public policies; however, when she tries to connect democratization to increasing levels of crime, her narrative analysis reveals serious inconsistencies. For instance, at one point Davis (2006:65) states, approvingly, that "most observers cite 1994 as the year criminality and public insecurity burst out of control" in Mexico City. Putting aside the fact that she does not provide a single reference that would identify these 'observers,' Mexico City was not democratized until 1997 when, as I mentioned above, elections for the City's chief executive were held for the first time. So the City's democratization, at least as measured by electoral competition, could not have contributed to the stated increase in crime.

More importantly, she fails to present systematic evidence for the rise in crime she so frequently mentions. There is no single chart or graph in the entire paper showing this trend and most of her references are to newspaper articles and a few reports she does not study in any depth. Yet she feels confident claiming that by the mid-to-late 1990s crime, including homicides, had increased dramatically in Mexico City (Davis 2006:65). In fact, data from the National Institute of Statistics and Geography (INEGI 2011) (*Instituto Nacional de Estadística y Geografía*, INEGI), which I analyze closely further below, indicates that homicide rates had been decreasing in Mexico City since the early 1990s.

Villarreal (2002) presents a more focused, ambitious, and robust analysis of the connection between democratization and violence in Mexico. Theoretically, Villarreal's goal is to extend and correct Durkheimian social control theory. He extends it by incorporating political factors and corrects it by accounting for the "differential effect that certain groups within society may have on preventing criminal violence" (Villarreal 2002: 479). Villarreal explains that at the local level the PRI regime was maintained by a patronage system in which local political bosses or *caciques* ruled by distributing resources and monopolizing the means of coercion. In exchange for securing the party's dominance, *caciques* received the necessary support to stay in power in their communities.

According to Villarreal (2002:481), "the consolidation of a competitive electoral system with effective alternation of parties in office will weaken the power of a *cacique* because he will no longer be able to control the distribution of state resources and political influence on which his power depends" (Villarreal 2002:481). This, he hypothesizes, will produce a temporary loss of social control and a concomitant increase in violence. As the *cacique* struggles to maintain

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movements in the 1990s, the persistence of authoritarian political practices, and the expansion of illegal drug markets. He does not argue that the transition process caused these non-democratic phenomena. Indeed, he attributes them mostly to the poverty and inequality that pervade the country, but he does claim that democratization in the context of these economic disparities has made these problems worse and more difficult to resolve, partly for reasons that Villarreal and Davis allude to in their analyses.

his power and others fight to fill the opening void, "inter and intra-factional struggles as well as predatory crime in the community" will rise (Villarreal 2002:481).

Methodologically, Villarreal uses random, special lag, and fixed-effects models to tests the impact of political competition on homicide rates while controlling for structural features that tend to affect homicide levels. He concludes that political competition does increase homicide rates "but the effect was found only in rural areas," which he defines as those where the population lives in towns of less than 2,500 residents (Villarreal 2002:486, 494). He justifies the spatial scope of this finding by stating that patron-client ties are more common in rural areas (Villarreal 2002: 478), but this conceals the degree to which this finding is substantively significant at all. Although democratization may have the most impact in rural communities, it is precisely in this type of community where it has advanced the least. Klesner (2005; 2007; 2009) has shown that historically, the PRI's stronghold has been poor rural communities where people have low levels of education. It is in these localities where the PRI continues to win elections and wield significant power. Moreover, data from INEGI (2010a) shows that less than one percent of Mexico's total population lives in communities of this size, making Villarreal's finding largely irrelevant for most of the country. Indeed, according to his own data, his finding does not even hold for municipalities where 75 percent of the population lives in towns of less than 2,500 residents (Villarreal 2002:486, 487, 490, 492, 493). It is valid only for municipalities where everybody lives in communities this size, which, again, accounts for a small portion of Mexico's total population.

A close look at Villarreal's four models shows that the proportion of people voting for parties other than the PRI and party factionalization—which are his two measures of democratization—though not statistically significant, have negative coefficients, meaning that homicide rates decreased when people voted for the opposition and elections where highly contested (Villarreal 2002:487, 490, 492, 493). Furthermore, most of his models show the dummy variables for 1995 and 2000 have negative coefficients, and the 2000 coefficient was significant in all regressions. This means that homicide rates were decreasing over time, just as democratization was moving forward.

The latter point, I suspect, may have played a role in his decision to forgo a simple graph showing the trend in homicide rates since 1990, something Davis fails to present as well. Presenting such descriptive evidence would have given readers a better sense of the overall trend, but it would have also shed doubt on their arguments. As I will show further below, regardless of the data source used, homicide counts and rates decreased in Mexico during the 1990s.

The purpose of this chapter was to twofold. First, I showed how the notion that democratization can produce violence emerged as longstanding theoretical traditions in sociology and political science came into dialogue with the literature on the quality of democracy in developing countries. Second, I addressed the few articles that have appeared making this argument for Mexico and pointed out the weakness of the empirical evidence they present. In the following chapter, I begin to articulate my own contribution to this subject by explaining how homicide statistics are produced. This is an important step in order to understand the nature and limitations of these data, before moving on to an analysis of homicide trends in Mexico during the past twenty years.

CHAPTER II: THE SOCIAL CONSTRUCTION OF CRIME STATISTICS

Every statistic… is shaped by the process that operationally defines it, the procedures which capture it, and the organization which processes and interprets it.
Wesley G. Skogan (1975:18)

So far, I have referred to homicide rates as social facts. They are not. Homicide rates are not "true," at least not in the sense of being an objective, unproblematic, and straightforward reflection of reality. Homicide rates—and all crime measures, indeed, all statistics for that matter—are a social construction (Black 1970:734; McCleary, Nienstedt, and Erven 1982; Brownstein 2000).[9] This, however, does not mean they are false. The point is a more nuanced one. Crime statistics are produced in the context of complex interactions among institutions, actors, discourses, and interests. They are, in this sense, conditioned by the dynamics of historically specific communities and social processes. The implication is that crime statistics are subject to social forces that make their validity and reliability an issue that stems beyond concrete methodological considerations. Changes in crime rates, for example, could be the result of changes in how the numbers are produced or measured rather than changes in the "real" amount of crime.

Most of what we know about the social nature of crime statistics and their methodological deficiencies has been produced by studying the United States and, to a lesser extent, Western Europe and the Nordic countries (Gottfredson and Hindelang 1981:114-116; MacDonald 2002:93-95; Skogan 2010:60).[10] The relative dearth of research and data on Mexico limits our understanding of the specific social processes that underpin the social construction of crime rates in this country. Moreover, the data we do have about crime in Mexico is often unreliable or insufficient for research purposes. Government agencies in Mexico only recently began to use statistically informed techniques for data collection. The information they have produced in the past was often collected using flawed methods, making it impossible to draw valid inferences or make rigorous comparisons across jurisdictions. In certain cases the data required to track long term patterns or map differences across small geographic units simply do not exist (Shirk and Ríos Cázares 2007:12-13; Piccato 2007:66-68, 79; Zenteno 2011).

The accumulated knowledge on the United States, however, can be used to understand the social construction of crime rates and, in so doing, shed light on factors potentially relevant for Mexico. This is not to imply that empirical patterns in Mexico correspond to those in the United States. Indeed, research on the causes, consequences, and social patterning of crime in Mexico and Latin America shows that trends in this region are often the reverse of those prevalent in the United States (Villarreal 2002; Villarreal and Silva 2006). Nevertheless, the research on the United States can be used to illustrate the problematic nature of crime measures and provide general parameters for their proper understanding. In this chapter I present an overview of this literature's key findings regarding both the methodological shortcomings of the instruments used to collect crime data and the social nature of how these numbers are produced, with special attention to Mexico when empirical studies are available.

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[9] The modern-classic about social constructionism in sociology is Berger and Luckman 1967, but the classic work is Durkheim ([1912] 1995). Moreover, Foucault ([1975] 1995) has shown us that statistics are not only socially constructed; they can produce social realities themselves.

[10] For a discussion of crime statistics for Brazil see Caldeira (2000, chapters three and five).

My initial discussion focuses on crime statistics in general. This sets a broader context on the basis of which I then discuss the specific case of homicide numbers. The central argument throughout is that the processes involved in the social construction of crime data contribute to underreporting, misreporting, and over-reporting that you cannot always correct satisfactorily with statistical techniques. Taking Merton's reflections seriously, I show just how difficult it is to get the facts straight when studying crime.

Methodological Limitations of Official Statistics and Victimization Surveys

The two most commonly used sources for statistical information about crime are official police reports and victimization surveys.[11] Police reports are based on crimes formally registered by law enforcement units. Surveys collect information directly from victims or from informants who are in a position to discuss the victimization of others. Surveys were first developed in the United States in the late 1960s as a response to systematic misreporting and underreporting in official crime statistics (Skogan 1975:19-20; Gottfredson and Hindelang 1981:108-110; but see Skogan 1974:25-26 and O'Brian, Shichor, and Decker 1980:396-400 for arguments supporting the validity of official crime statistics for certain types of claims about crime patterns).

Although official crime statistics and victimization surveys do not measure the exact same phenomena (BJS 2004a), the logic is that inaccurate and inconsistent recording by law enforcement agents can be supplemented with information provided directly by victims. Victim testimonies, in other words, can fill the gaps left by inadequate official recording practices. This reasoning has led scholars to view these sources of information as complementary and the discrepancies between them are used to calculate the dark figure of crime, that is, the difference between the amount of officially registered crime and the real amount of crime in society (Biderman and Reiss 1967:1; Skogan 1977:42-43; Gottfredson and Hindelang 1981:121-122; Wittebrood and Junger 2002:153-158, 168-169;).[12]

The National Crime Victimization Survey (NCVS) administered annually since 1973 by the U.S. Department of Justice is the most comprehensive nationally representative household survey about the frequency, characteristics, and consequences of criminal victimization in the United States. According to the most recently available data from the NCVS (BJS 2010), there were a total of 20 million crimes in the United States in 2009. 58 percent of those crimes were not reported to the police. Mexico's most comprehensive victimization survey is the National Survey on Public Insecurity (*Encuesta Nacional Sobre Inseguridad*, ENSI). It has been conducted since 2002 and is currently administered by the National Institute of Statistics and Geography (*Institutio Nacional de Estadística y Geografía*, INEGI), Mexico's census bureau. The ENSI's most recent figures (INEGI 2010c) register a total of 11.8 million crimes in Mexico during 2009.[13] 78 percent of those crimes were not reported to the police, a considerably higher figure than the one for the United States. Data shows that these reporting rates have remained fairly stable in the United States since 2000 (BJS 2010:8) and in Mexico since 2004 (ICESI 2010a:43, 46).

[11] Other sources of information are court statistics, inmate surveys and, as I will discuss below, mortality statistics.
[12] Quetelet [1842]1969:82 is conventionally thought to have been one of the first scholars to systematically address the discrepancy between officially measured crime and the total amount of crime in society.
[13] Note that the population of the United States is roughly three times the size of Mexico's while the total amount of crimes in 2009 was only twice the total in Mexico.

Reporting rates, however, vary considerably by type of crime in both countries and victims in each country provide different reasons for failing to report crimes to the police (Zepeda Lecuona 2004:45-46). More importantly, each survey studies a different population and defines and classifies crimes differently, so the comparison should be viewed with caution. The NCVS interviews people age 12 or older while the ENSI interviews people age 18 or older. The NCVS classifies crimes along two broad categories: property crimes and violent crimes. Property crimes include burglary, motor vehicle theft, and theft. Violent crimes include rape, sexual assault, robbery, aggravated assault, and simple assault. In contrast, the ENSI covers a broader group of crimes, including fraud, kidnapping, and extortion, in addition to those covered by the NCVS. Because these surveys focus on interviewing victims, neither formally includes questions about homicides, though the ENSI has produced information about this crime in certain instances.[14]

Comparing crime rates over time within or across countries, using either government statistics or surveys, requires close methodological scrutiny as well. Differences in how crimes are defined or how the information is collected may hinder the possibility of making valid comparisons. The NCVS's methodology is periodically revised with the purpose of improving the quality of the information it produces, but this can have detrimental effects in other regards. For example, the U.S. Department of Justice (BJS 2010:11) reported that "methodological changes implemented [in the NCVS] in 2006 impacted the estimates for that year to an extent that they were considered to be not comparable to those of previous years." Changes to Mexico's ENSI are even more common because it is fairly new and the process of fine-tuning its validity and reliability is in its early stages. In 2008 the fifth ENSI introduced a new formula for calculating the dark figure of crime, making comparisons with information produced by previous and subsequent versions problematic.

Official statistics suffer from analogous problems. When comparisons over time are viable, confirming differences in the numbers from one year's survey to the next, if any, requires tests of statistical significance to make sure the differences are real instead of the result of sampling variation or changes in some other feature of survey design.

There are other technical issues that are relevant when using or assessing the information provided by surveys. They tend to do a better job of producing information about crime trends rather than crime rates and property crimes rather than violent crimes. Moreover, victimization surveys are beleaguered by the same methodological challenges that affect surveys in general. Effective question design (Converse and Presser 1986), adequate sampling (Berk 1983; Kalton 1983), and sufficient response rates are all problematic and have particular manifestations in the context of research on crime. Violent crimes, for example, are so infrequent and unevenly distributed across class and demographic characteristics of the population (Skogan 1981:2) that surveys often fail to sample a sufficient amount of victims (Skogan 1975:23-24; 1984:116; Gottfredson and Hindelang 1981:115-116). Police reports, for their part, suffer mainly from underreporting and validity problems. In addition to these technical considerations, the social processes through which official statistics and surveys are produced impose methodological limitations as well. Some of these limitations are present in both instruments while others are distinctive to each one.

[14] After moving through a list of specific crimes, asking the respondents whether they have been victims of any of them, the most recent ENSI questionnaire asks whether they have been a victim of a crime not included in the list. Respondents have sometimes discussed homicides when replying to this question.

Crime Statistics as Social Phenomena

What do crime rates really measure? This is not a rhetorical question. Answering it requires that we understand how the numbers are produced. While there are statistical techniques to correct for problems such as missing data or measurement error, if the original raw data do not measure what they are supposed to, these techniques are essentially useless. The data provided by official police reports and victimization surveys are the result of a social process. At a minimum, both instruments depend on someone finding out that the law was broken, actually classifying such an act as a crime, deciding to communicate that information, and doing so accurately. Social forces affect each of these stages, making the process highly contingent. Figures 1 and 2 schematically depict the stages of this process for each instrument. They are meant to be illustrative, not exhaustive. They indicate how the process of producing reliable information can be corrupted at any given stage.[15]

Crimes that remain undetected are not captured by either of these instruments. As a result, they do not figure in our estimates of the dark figure of crime. No crime, no crime statistic. There tends to be a positive relationship between the gravity of a crime and the probability that it remains unnoticed. Put simply, the more severe the crime, the more likely someone will find out about it. Minor crimes such as petty theft are often effectively concealed—even from the victims themselves—but violent crimes are less likely to follow such a path. Yet the relationship between gravity and the probability of being uncovered is not straightforward; it is mediated by several factors and varies across specific types of crime, so generalizations have to be made with caution.

Even when people are privy to illegal acts as either witnesses or victims, this alone does not guarantee they will consider them a crime. Several factors influence how people interpret unlawful behavior. Among the most salient factors are the type of act in question, social class, race, the victim or informant's relationship with the offender, the perceived intent of the perpetrator, and various other factors specific to the circumstances under which the event unfolds, as well as the broader social context (Skogan 1981:9-10; Greenberg and Beach 2004:185). There is debate about the relative weight of these factors, but the important point is that people's classification of behavior as criminal is not as straightforward as one might initially suppose. For example, people are often hesitant to describe illegal activity as criminal when it involves family members or friends (Skogan 1981:9). Indeed, one of the most robust findings to emerge from victimization surveys is that criminal acts that involve physical aggression between people who know each other are often considered private matters.

[15] These figures are modified versions of a similar diagram presented by Skogan (1975:21).

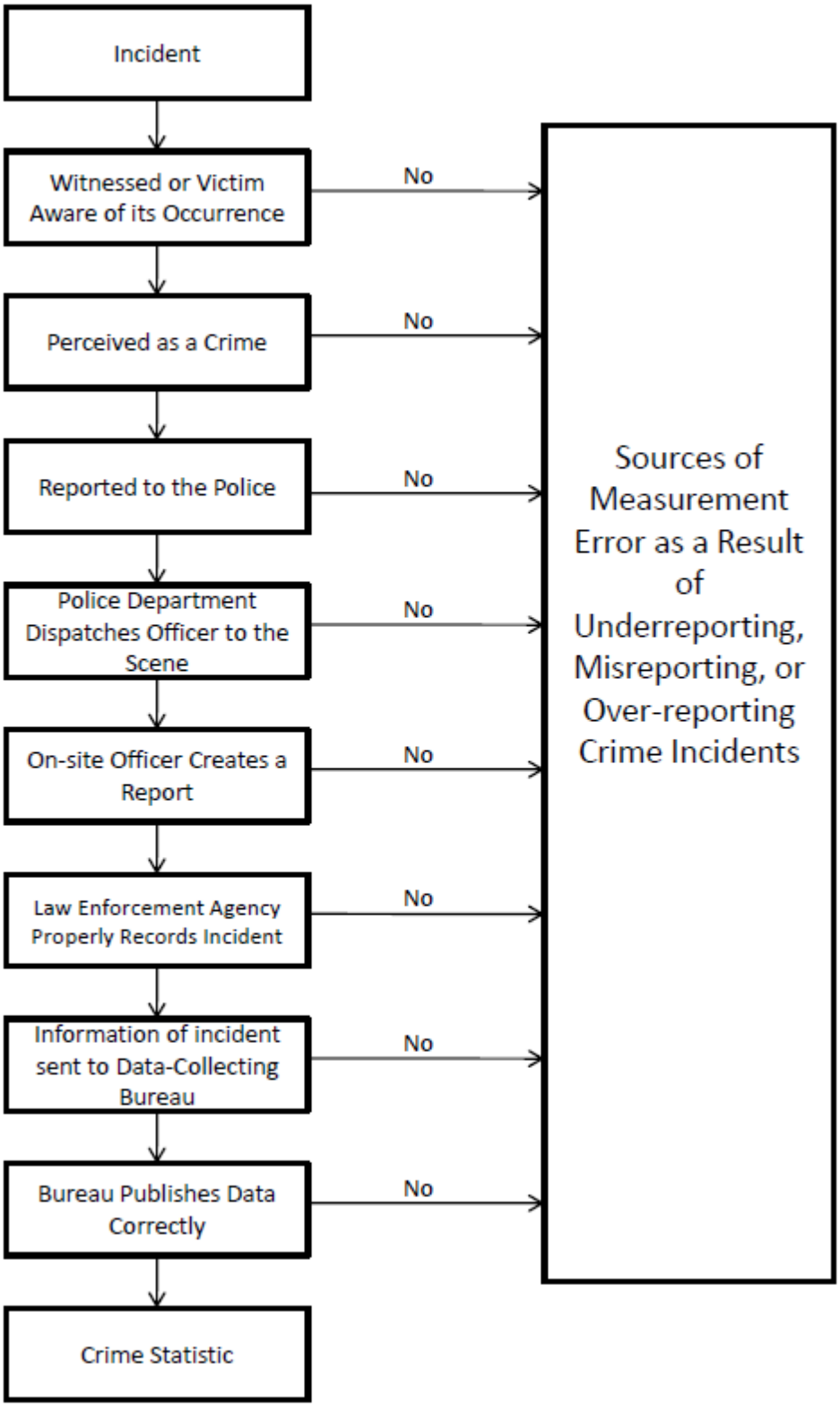

Figure 1. The Social Process of Producing Crime Statistics Based on Police Reports.

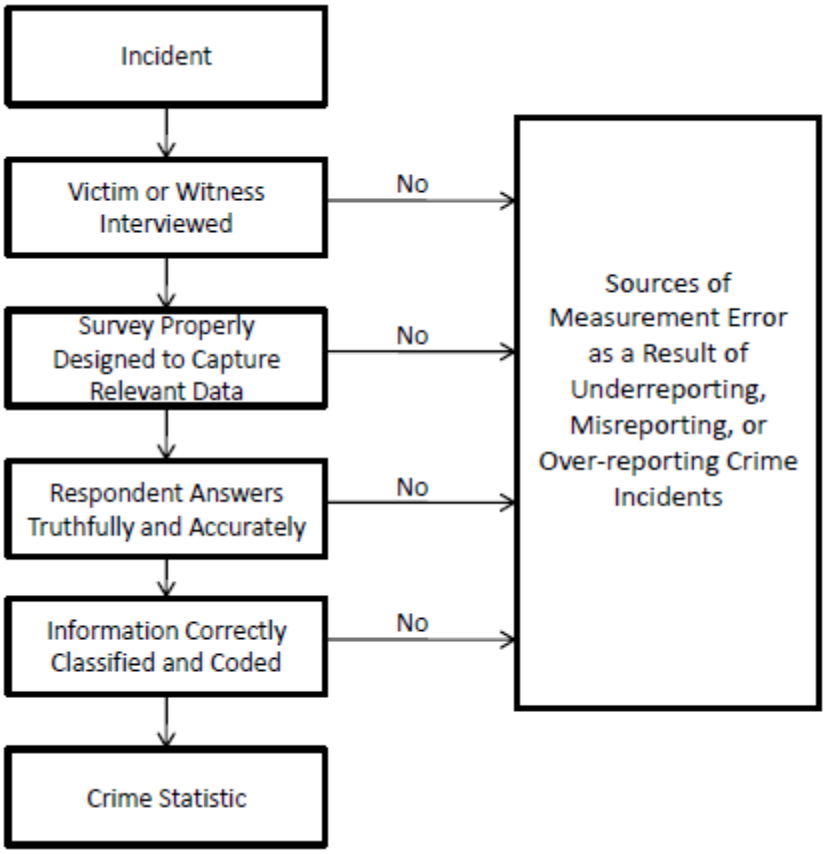

Figure 2. The Social Process of Producing Crime Statistics Based on Victimization Surveys

And people's willingness to report an incident depends partly on whether they view it as a crime, but even when they do, various factors, including some of those mentioned above, influence their decision to communicate what they know (MacDonald 2002:96). Victimization surveys have helped us understand why people who believe they have been criminally victimized decide not to report it to the police. Given the largely reactive nature of modern police forces, some have argued (Gottfredson and Gottfredson 1980; Gottfredson and Hindelang 1981) that this decision plays a pivotal role in the construction of crime rates:

> Citizens decide whether or not to invoke the law in the first instance—i.e. whether or not to call the police when they believe they have been criminally victimized. This basic decision, more than any other in the criminal justice process, has the potential of radically affecting crime rates and determining who will be subject to arrest, prosecution, and imprisonment (Gottfredson and Hindelang 1981:118).

Writing in the mid-1980s, Skogan (1984:114) stated that the most consistent finding of victimization research on this issue—again, focused mostly on the United States, Western Europe, and the Nordic countries—was that "the decision to report [a crime] seems to be dominated by a rational calculus regarding the costs and benefits of such action." Victims, Skogan (1984:114, 120-129) claimed, are more likely to call the police if the financial loss or the physical injuries inflicted by the crime are serious. Gottfredson and Hindelang (1981:119) had

arrived at the same conclusion only a few years before. Two decades later, Greenberg and Beach (2004:184-185) found some support for this claim, but added that the opinion of the victim's social network mattered a great deal more. "Victims who were advised to call the police were over 12 times more likely to report the crime than those who either did not receive advice or who were advised not to call the police" (Greenberg and Beach 2004:185). Furthermore, low reporting rates for crimes such as domestic violence indicate that the relationship between the willingness to report and the gravity of the injuries is not straightforward; it is mediated by social factors (MacDonald 2002:90). The connection between the people involved in a crime weighs heavily in this circumstance as well. When relatives or friends are involved, people are less likely to report crimes (Gottfredson and Hindelang 1981:119; Skogan 1981:9). And research has found moderately strong relationships between a victim's sex, race, age, marital status, and education, and their decision to notify the police (Gottfredson and Hindelang 1981:120).

Even when people do report crimes, the information registered by official records and surveys is not without problems. Research shows that respondents frequently lie, forget, misremember, or provide inconsistent narratives in victimization surveys (Skogan 1981:14-22 , 1982:205-206; Gottfredson and Hindelang 1981:108, 111-112; Converse and Presser 1986). Ethnographic studies, in turn, demonstrate that the information recorded in official police reports is contingent on the interaction between the police officers who arrive on the scene and the individual that reported the crime (Black 1970; Skogan 1975:22-23). Black (1970:746) found that police officers in Boston, Chicago, and Washington D.C. were more likely to produce an official crime report when the crime was serious, when complainants pressed for official police intervention, when victims and suspects were strangers to one another, and when complainants were emphatically deferential toward the police officer's authority. He also found that people from the upper classes were more likely to have their grievances officially recorded than those from lower social standings.

In Mexico, an inveterate history of corrupt and abusive police officers and government bureaucrats makes police reports a highly suspect source of information about crime (Hayner 1946:428-432; Martínez de Murgía 1999; Zepeda Lecuona 2004:212-232; Piccato 2007:70-77; Reames 2007:117-119; Piccato 2008:61-63, 72-75; Müller 2010a:30-31; Müller 2010b:6-12). Piccato (2007:66) argues that "defining an act as a crime [in Mexico City] was always the product of public discussions and, often, of informal arrangements." His point is that once a law has been broken, a process of negotiation between the citizen who broke the law and a public official—either a police officer or a bureaucrat from the public prosecutor's office (*ministerio publico*)—ensues, and depending on the citizen's resources and the specific dynamic of their interaction, the illegal act may or may not *become* a crime, that is, it may or may not be reported by the police.

These negotiations often center on the amount to be paid in the form of a bribe, referred to in Mexico as a *mordida*, literally a "bite." Bribes are a common practice among Mexicans who largely perceive police officers and the judicial system as threats to be avoided (ICESI 2010a:106; The Economist 2011). Bribes are a means for citizens to protect themselves from an inefficient and corrupt system that mostly punishes the poor and disenfranchised (Azaola and Bergman 2007:107-111; Zepeda Lecuona 2007:141-149). But citizens do not always take the initiative in these situations. Police officers and bureaucrats extort citizens to compensate for low salaries and appease the monetary quotas imposed by equally corrupt higher ranking officials. Using recommendations from the Federal District's Human Rights Commission regarding police abuse, Silva (2007:183, 186-188) documents how police officers systematically

falsify reports in order to commit crimes themselves. In one of the first cases the Commission investigated in 1994, it found that "two judicial police [officers] used a baseless crime report to illegally detain and abuse two women. The officers removed items from the detainees' residence and demanded money in exchange for not initiating a robbery investigation" (Silva 2007:186). Official crime statistics are blind to these widespread and hoary practices that bias reported crime rates by under-reporting, misreporting, or over-reporting crime. And victimization surveys do not always pick up on this because people are reluctant to admit to having paid bribes.[16]

Police reports are also affected by the way police departments are organized. McCleary, Nienstedt, and Erven (1982) studied how differences in the way police departments processed complaints in the United States were a determining factor in the amount and types of crimes reported. Victims of burglary, for example, often call the police twice. When an officer is dispatched to the scene for the first time, the victims are not always aware of everything that was taken. They call back a week later to report additional missing belongings and because of the administrative requirements in place, another report is produced, so the same burglary is counted again (McCleary et al 1982:364).

In one police department McCleary et al. (1982:367-370) studied, an organizational change led to an increase in recorded, not real, crimes. Originally, sergeants had been given the task of overseeing the work of the dispatch bureau. When a dispatcher received a call from someone reporting a crime or suspicious activity, sergeants would decide whether to send out an officer. Serving as informal screening mechanisms, sergeants kept the department's limited resources in mind and weighed the nature of the reported activity in order to make their decision. Once this task was no longer their responsibility, the decision fell directly on dispatchers. Fearful of being liable for failing to send out officers when they were needed, dispatchers began sending officers out as long as the case minimally complied with formally established regulations. As a result, recorded crimes increased dramatically, but not because real crime had increased; officers were being sent out more frequently, so they generated more reports. Questioning the validity of official statistics, McCleary et al. (1882:362) concluded that "the official crime rate in a jurisdiction is a function of the organizational structure of the crime processing agency, that is, the local police department."

Although problematic, we have some data about the institutional inefficiency and corruption of state and federal district attorney's offices (Zepeda Lecuona 2004, especially chapter three; Magaloni 2009). But we know little about the local organizational cultures of these institutions. We do not have the information necessary to assess how variations across organizational cultures within these institutions affect the production of crime figures. Ethnographic research on this subject is a pending task, but the obstacles are formidable. Mexico's criminal justice system is known for being inaccessible to victims and citizens, not to mention prying scholars (Müller 2010b:7-8).

Prevailing cultural norms such as the values of police officers, bureaucrats, and judges can also have an impact on official crime statistics. Piccato (2007:79) documents how throughout the twentieth century authorities in Mexico City were prone to disregard sexual offenses against women. "Social and institutional reluctance to deal with… [this type of crime] means that gender violence was more common than official evidence would suggest." Although

[16] Corruption, of course, is not exclusive to Mexico. Skogan (2010:58) explains that corruption was so widespread among Chicago's police officers in the mid-1980s that it is impossible to conduct serious statistical analyses of crime trends in the city during that period. They "were "killing crime" by failing to write up official reports for huge number of offenses." For another brief comment on this case, see Tennenbaum (1993:83).

official rates of sexual offenses against women increased gradually throughout the twentieth century, Piccato believes the increase was much steeper than these numbers suggest. Reluctance to address these types of crimes, Piccato concludes, makes official numbers an unreliable estimate of the true magnitude of this problem.

There are other sources of underreporting, misreporting, and over-reporting than those mentioned here. The central point is that a series of social factors converge to produce the known amount of crime in society. We know more about some factors than others, but research is focused mostly on the United States. Knowledge about the relevant factors for Mexico is in its infancy.

Homicide

So far, I have discussed the social construction of crime data largely excluding the specific case of homicide. Scholars generally agree that homicides are more reliably documented than other crimes, at least as far as aggregate counts and long term trends are concerned (Cantor and Cohen 1980:126; Tennenbaum 1993:82-83; Riedel and Regoeczi 2006:61-66). While this is true, homicide data are socially constructed just like any other crime measure, so when using this information it is important to be mindful of certain issues that are methodologically consequential. The purpose of the above discussion is not limited to providing a general background for a more focused analysis of homicide data. As I will show, there are sound reasons to think that issues conventionally thought to be important for most crimes, but irrelevant for our estimates of homicide, actually matter in the case of the latter as well. This is especially true in Mexico where the current administration's war against drug cartels and a longstanding history of institutional corruption and inefficiency have a direct impact on the quality of available information.

In this section, I first describe the most important sources of information for homicide data. Then I explain why scholars are confident about the quality of this information, but I also call attention to problems that should be kept in mind when using it. Just as with crime statistics in general, most of what we know about homicide data is based on studying the United States (Smith 2000:8-11). As a result, I draw once again on this research to make broad conceptual points and rough comparisons, presenting empirical data for Mexico when it is available.

Sources of Homicide Data

Reports from law enforcement agencies and mortality statistics are the two main sources of information about homicides.[17] Local law enforcement agents register homicides in reports produced as part of criminal investigations. Mortality statistics are based on the cause of death identified in death certificates prepared by an attending physician, coroner, or medical examiner. In the United States, the FBI's Uniform Crime Reports (UCR) is the most comprehensive national source of information about crimes reported to the police, including homicides. The UCR program began compiling data from monthly local law enforcement agencies in 1929. This information is used to produce annual editions of *Crime in the United States*—the FBI's most ambitious statistical publication—as well as several specialized reports, including the *Supplementary Homicide Reports* (SHR).[18] The latter focus exclusively on homicides and provide detailed information for each recorded incident. In Mexico, information on reported

[17] Mortality data are part of the broader category of vital statistics, which also includes information on births, marriages, divorces, and fetal deaths.

[18] For a detailed account of the history and technical features of the UCR's data collection process see Maltz (1999).

homicides is compiled by the National Public Security System's Executive Secretariat (*Secretariado Ejecutivo del Sistema Nacional de Seguridad Pública*, SNSP). The SNSP collects information from state attorney generals' offices, who in turn obtain it from the public prosecutors within their jurisdiction. The counts are based on preliminary inquiries (*averiguaciones previas*), which are investigations carried out to determine whether prosecution is viable.[19] Currently, the SNSP's online data base offers information for the 1997-2010 period only.

Mortality statistics in the United States are compiled by the National Center for Health Statistics (NCHS), which is a division of the Centers for Disease Control and Prevention (CDC). INEGI, in collaboration with the Ministry of Public Health (*Secretaría de Salud*), is in charge of this task in Mexico. Both NCHS and INEGI depend on local agencies to compile mortality data, but their respective roles in the process differs considerably. The NCHS works as a coordinating node in a highly decentralized system whereas the INEGI intervenes more directly throughout the data collection process.

In the United States, each state has the legal autonomy to organize the process of registering deaths. The process varies somewhat from state to state and, at the local level, from county to county, but its general contours are similar. Each state is divided into registration districts in charge of collecting vital records. The process begins with physicians or coroners who establish the cause of death. Funeral directors receive this information and register the case with the civil registry or local county health official, the institutions in charge of emitting death certificates. Registries send that information to state vital statistics offices, which then forward it to the NCHS. The NCHS collates and publishes the data. Throughout this process the NCHS works with state and county officials to try to achieve complete and uniform registration standards.

In contrast, INEGI has a larger infrastructure it uses to actively manage the process in Mexico. Its central headquarters design forms that instruct local agencies on how to compile and send their information. The process begins with INEGI sending these forms to its ten regional offices, which in turn distribute them among the institute's thirty one state offices and the office for the Federal District. The state offices send these forms to three local level agencies: civil registries, public prosecutor's offices, and civil and family courts.[20] These agencies fill out the forms and, in the case of civil registries, return them with copies of the original death certificates, beginning the process in reverse until the information reaches INEGI headquarters for final revisions and publication. Local agencies report cases monthly in the U.S. and Mexico and both countries follow the guidelines for classifying cause of death established by the World Health Organization's (WHO) International Classification of Diseases (ICD).[21]

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[19] INEGI also collects and publishes information about homicides, but its sources are first circuit courts (*juzgados de primera instancia*). Its homicide counts do not correspond to the amount of homicide cases registered with public prosecutors; they correspond to the amount of cases taken to court after investigation, which tend to be substantially fewer. Although INEGI began collecting this information in the late 1920s—with anteceding agencies producing data irregularly as early as the mid nineteenth century—its website's interactive data base (*consulta interactiva de datos*) offers standardized numbers since 1997 only. Data from further back can be requested, but no guarantees are given that it will be provided.

[20] The two relevant agencies for homicide data are civil registries and public prosecutor's offices.

[21] A comprehensive description of the formal process coordinated by NCHS can be found in Hetzel (1997:62-66). The process for Mexico is described in INEGI (2003:3-5, 13-20; 2009:85, 173-174, 212) and Braine (2006:167-168). For the history of the ICD, see Moriyama, Loy, and Robb-Smith (2011).

At the international level, the three most important sources of homicide data are the United Nations *Survey of Crime Trends and Operations of Criminal Justice Systems* (UNCS), the International Criminal Police Organization's (Interpol) *International Crime Statistics*, and the WHO's annual mortality statistics.[22] All three organizations obtain their information from member-state agencies, so their homicide data for Mexico are only as good as SNSP's and INEGI's.

Explaining how NCHS and INEGI formally produce homicide data is not without purpose. Although it is somewhat messier in practice, the formal process alone conveys the information's social character, allowing one to imagine potential pitfalls in the production of accurate numbers. Despite these pitfalls, however, scholars are right to contend that homicides are the most reliably measured crime, second only to auto theft perhaps.

The (Relative) Accuracy of Homicide Data

Confidence in the quality of homicide data is not unfounded. There are sound reasons to think that homicide data are more reliable than the information available for other crimes—especially regarding long term trends and aggregate counts. The two central reasons are that, first, compared to other crimes, homicides are less likely to remain undetected, unreported, or unrecorded (Monkkonen 2001a:54-55). Second, countries generally have two nationwide sources of information about homicides that can be compared and allow for an assessment of their respective strengths and weaknesses—police reports and mortality statistics. But these reasons should not be viewed as a license to circumvent close scrutiny of the numbers. Homicide data do have some problems, even in the United States. In Mexico, data are affected by the longstanding history of government corruption as well as the current conflict between the federal government and drug trafficking organizations. Perhaps more importantly, the literature on the United States has brought to light several problems with homicide data that have not been studied in Mexico. As a result, we know little about the problems that are relevant in the Mexican case and their magnitude.

As Tennenbaum (1993:82) states, "there is general agreement… that most homicides find their way into a reporting system." Homicides disrupt relationships and communities in a way that few other crimes do, making it difficult to keep them concealed. For this reason, current debates in the United States about FBI and NCHS figures revolve more around item rather than unit-level missing data (Riedel 1999:79-80, 82-83; Addington 2004; Riedel and Regoeczi 2004:163-166).[23]

> Item missing data (or missing values) refers to missing details within a [homicide] case that is reported. For example, the offender's race is unknown in a murder. Unit missing data (or missing cases) refers to the failure to record an entire case, such as failure to report a murder to the SHR (Addington 2004:211).

Scholars studying the United States have several reasons to be confident about homicide counts. This is not because the data are flawless; rather, the advantage these academics have is the wealth of information at their disposal to assess the accuracy of the numbers over a fairly

[22] For comparisons between these three as well as other international sources of data see Huang and Wellford (1989), LaFree (1999), and Marshall and Block (2004).

[23] There is, however, a problem with unit missing data at the level of counties in the United States that has generated considerable discussion. I address this further below.

long period of time. The FBI and the NCHS produce detailed reports regarding administrative rules and procedures for data collection, the population covered by their figures, and their sampling and estimation procedures. In addition, researchers have been studying the validity and reliability of figures for a few decades now, accumulating a wealth of knowledge regarding problems, solutions, and pending research areas. In contrast, we know comparatively little about the virtues and flaws of homicide data for Mexico, partly because information has been collected systematically for a much shorter period of time (Braine 2006:166)

The FBI has a hierarchy rule in place as part of the requirements law enforcement agencies must follow when reporting crimes. This rule states that when incidents involve multiple offenses, only the most serious should be registered with the FBI and homicide lies at the top of the Bureau's scale of gravity. For example, if someone commits theft and homicide at the same time, only the latter is reported to the FBI. Arson is the only crime excluded from this rule. When arson and homicide are committed in a single incident, both are reported. Although this rule contributes to general underreporting in UCR statistics, it helps ensure all known homicides are reported to the FBI and counted only once (Cantor and Cohen 1980:126; FBI 2004b:10-12).[24]

The homicide data collected by the FBI in the 1930s and 40s was not representative of the population as a whole, but coverage gradually improved in the course of the twentieth century. Initially, information came mostly from cities, which was problematic because although today it is not the case, at the time rural areas had higher homicide rates (Cantor and Cohen 1980:128); however, by "2007 law enforcement agencies active in the UCR program represented more than 285 million United States inhabitants—94.6 percent of the total population" (FBI 2011a). Although this percentage is high, the FBI has never achieved full coverage. The agency uses the information from comparable participating jurisdictions to impute the figures for those that fail to report their numbers.[25]

There is no comparable information available regarding the coverage of Mexico's SNSP homicide data. Formally, the SNSP collects information from all state attorney general's offices, but offers no assessment about how many public prosecutors within each state actually send their numbers to the state attorney general. The SNSP only reports whether state attorney generals sent their counts in on time.

Recently, various incidents have surfaced that question the quality of the information. In 2007 the SNSP (2007:30) reported zero homicides for the state of Tlaxcala. Staff from the Citizen Institute for Security Studies (*Instituto Ciudadano de Estudios Sobre la Seguridad*, ICESI)—one of the two most important non-profit organizations working on public safety issues in Mexico—found this surprising when reviewing the data for their own reports. They called a top state official inquiring about the matter and he provided them with the figure of 42 homicides in the state for that year (ICESI 2010b). So far, the SNSP has not corrected its report, nor has it offered an explanation for the missing value. Who is at fault, why the information failed to be published, and whether 42 is an accurate number is unknown. The more worrisome implication is that we simply do not know how often errors such as this occur.

[24] According to the FBI, most crime incidents consist of a single offense, something that mitigates the degree to which the hierarchy rule contributes to underreporting (2004:10). Citing numbers from Akiyama and Rosenthal (1990), Riedel (1999:79) noted that "although the hierarchy rule has been vigorously debated, a 1984 study of Oregon indicated that only 1.2% of Part I offenses are lost."

[25] For a clear explanation of the FBI's imputation procedure, see Maltz and Targonski (2002:306-308).

Likewise, *The Economist* (2011b) and Rámirez de Alba (2011) recently reported that from 1997 until 2006, the monthly average homicide rate for the State of Mexico was 228. Then, the monthly average reported by government authorities dropped to 102 for the period between January 2007 and May 2011. Upon being asked by reporters about the 59 percent reduction, the chief prosecutor in the state at the time declared that prior to 2007 thousands of deaths had been misclassified. Oddly enough, this correction happened shortly after the new governor for the state took office in 2006.

When police statistics are problematic, scholars have mortality data at their disposal, which is viewed as a complementary and more reliable source of information. The reasoning is that if law enforcement agencies fail to detect or report a homicide, as long as there is a body, it will be included in mortality counts. Indeed, mortality data are generally assumed to have better coverage than data from law enforcement agencies. The U.S. Bureau of the Census established the national death registration area in 1880, which consisted of states and, in the beginning, large cities that managed to register at least 90 percent of all deaths in their territories. All states had been admitted by 1933 and the NCHS assumes complete coverage since then (Cantor and Cohen 1980:129; Hetzel 1997:9). Today, NCHS officials consider that over 99 percent of deaths in the United States are accounted for by mortality data (Rokaw, Mercy, and Smith 1990:448; Riedel 1999:83).

It is important to distinguish coverage from completeness. Coverage refers to the proportion of the population that is included in mortality statistics. Completeness refers to the degree to which records are complete for the covered population; in other words, it refers to the proportion of deaths among the covered population that are actually registered by the system. Although mortality data achieved full coverage in the United States since the early 1930s, there have been issues regarding completeness more recently. For example, in 1964 the state of Massachusetts sent its mortality figures to the NCHS, but the latter never received them (Riedel 1999:84-85). This affected statistical estimates for the United States and the New England Region. Fortunately, problems such as these are discussed in the technical appendixes to the annual reports produced by NCHS, which makes it possible to assess their impact. More importantly, they have become less common over time.

Information about the coverage and completeness of Mexico's mortality data does not stretch as far back as the information available for the United States; however, available figures suggest they are fairly reliable since the 1980s (Braine 2006:166). The INEGI's (2009:206) most recent demographic statistics report states that in 2008 a total of 6,129 institutions across the country were registered as official sources of information in the mortality data collection system. These include 1,146 public prosecutor's offices and 4,981 civil registries. According to the INEGI, the combination of these institutions covers 99.3 percent of the country's population.

The latest numbers provided by the WHO's online mortality database are not as recent or as high, but they do indicate that Mexico's mortality statistics are among the best in Latin America.

Table 1. Estimated Coverage of Mortality Data in Five Countries According to the WHO, 1999-2005

Period 1: 1999-2001					
Country	Mexico	United States	Colombia	Brazil	El Salvador
Coverage (%)	92.4	100	79.1	78.7	76.6

Table 1. (*continued*)

Period 2: 2002-2005					
Country	Mexico	United States	Colombia	Brazil	El Salvador
Coverage (%)	95.4	99.9	78.9	79.7	75.0

Source: WHO (2011c).

Table 2. Estimated Completeness of Mortality Data in Five Countries According to the WHO, 2005

2005					
Country	Mexico	United States	Colombia	Brazil*	El Salvador
Completeness (%)	100	100	81	84	76

Source: WHO (2011b).
*The Figure for Brazil is for 2004.

Table 1 presents the percentage of the population covered by the mortality statistics of the listed countries for the two most recent periods tracked by the WHO. Although coverage in Mexico lags behind that in the United States, it far surpasses coverage in Colombia, Brazil, and El Salvador, countries to which Mexico is often compared when discussing homicide rates. Table 2 presents the degree to which mortality data is complete for the percentage of the population covered in each country in 2005. According to the WHO, completeness in Mexico is equivalent to the United States—at 100 percent in both countries—and exceeds completeness in El Salvador by 24 percent, in Colombia by 19 percent, and in Brazil by 16 percent. In a study published by researchers from the WHO in 2003 (Mathers et al), Mexico's death registration system was ranked among the best in the world. The study looked at 115 countries and concluded that 23, including Mexico, had high quality systems. The only other Latin American country included in this category was Venezuela. All this seems promising, but more research is needed to confirm the reliability of the data.

If mortality data has better coverage than police statistics, but both are fairly accurate, then their respective numbers should follow each other closely. Figures 3 and 4 prove this to be the case for the United States since at least 1990. The graphs present the most recent available data from each source. Figure 3 shows that homicide rates from the NCHS and the FBI follow the same trend, with the former being only slightly higher. The sudden divergence between the two in 2001 results from the fact that NCHS data includes the homicide count from the September 11th attacks against the World Trade Center in New York City while the FBI excludes them. Figure 4 adds the data from the WHO, which overlaps with the numbers from the NCHS.

Riedel (1999:88-89) compared homicide rates from these same sources for the period 1960-1990 and found similar results.

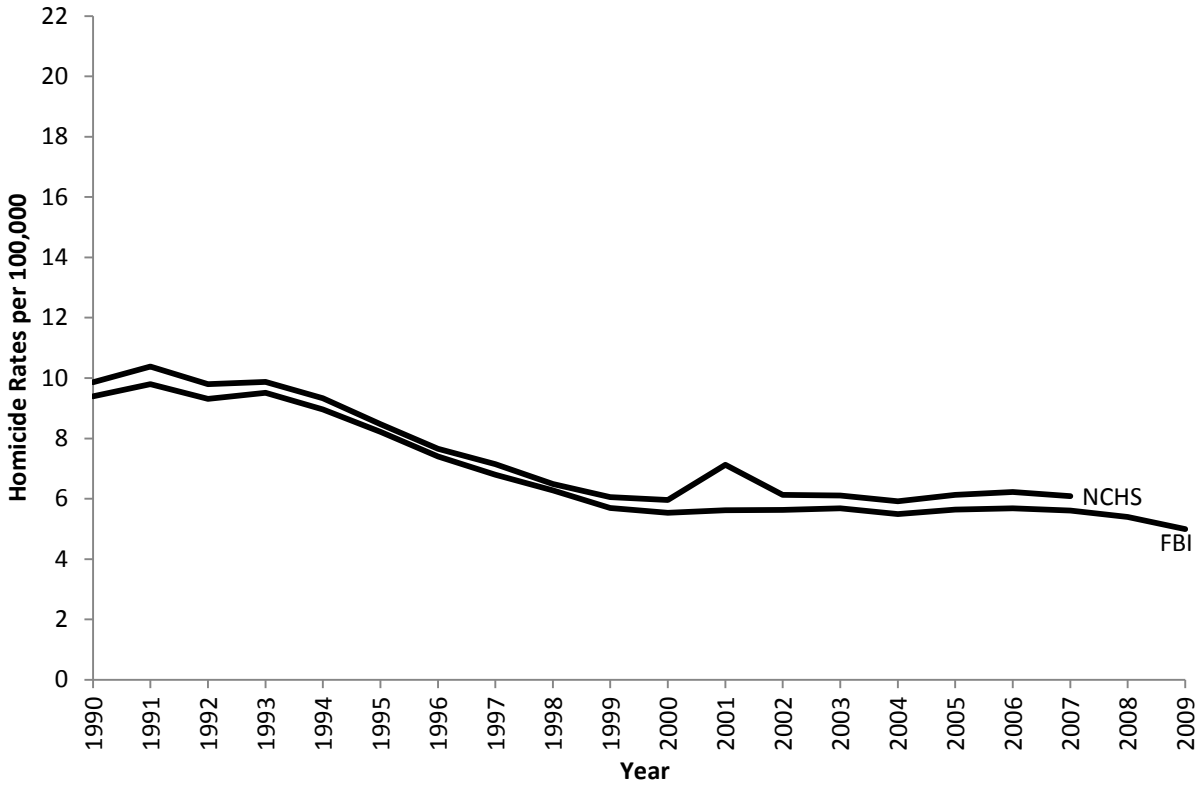

Figure 3. Homicide Rates in the United States According to the FBI and the NCHS, 1990-2009.

Sources: FBI (2011b) and NCIPC (2011a; 2011b)*.

Note: Figures from both sources include the 169 homicides that occurred as a result of the bombing of the Alfred P. Murrah Federal Building in Oklahoma City in 1995. FBI figures exclude the 2,823 homicides that occurred as a result of the events of September 11, 2001, but NCHS figures include them.

* The National Center for Injury Prevention and Control (NCIPC) is a part of the Centers for Disease Control and Prevention. Its homicide rates are based on NCHS mortality counts and U.S. Bureau of the Census population estimates. Mortality counts from 1990-1998 are based on the ICD-9 and counts from 1999-2007 are based on the ICD-10.

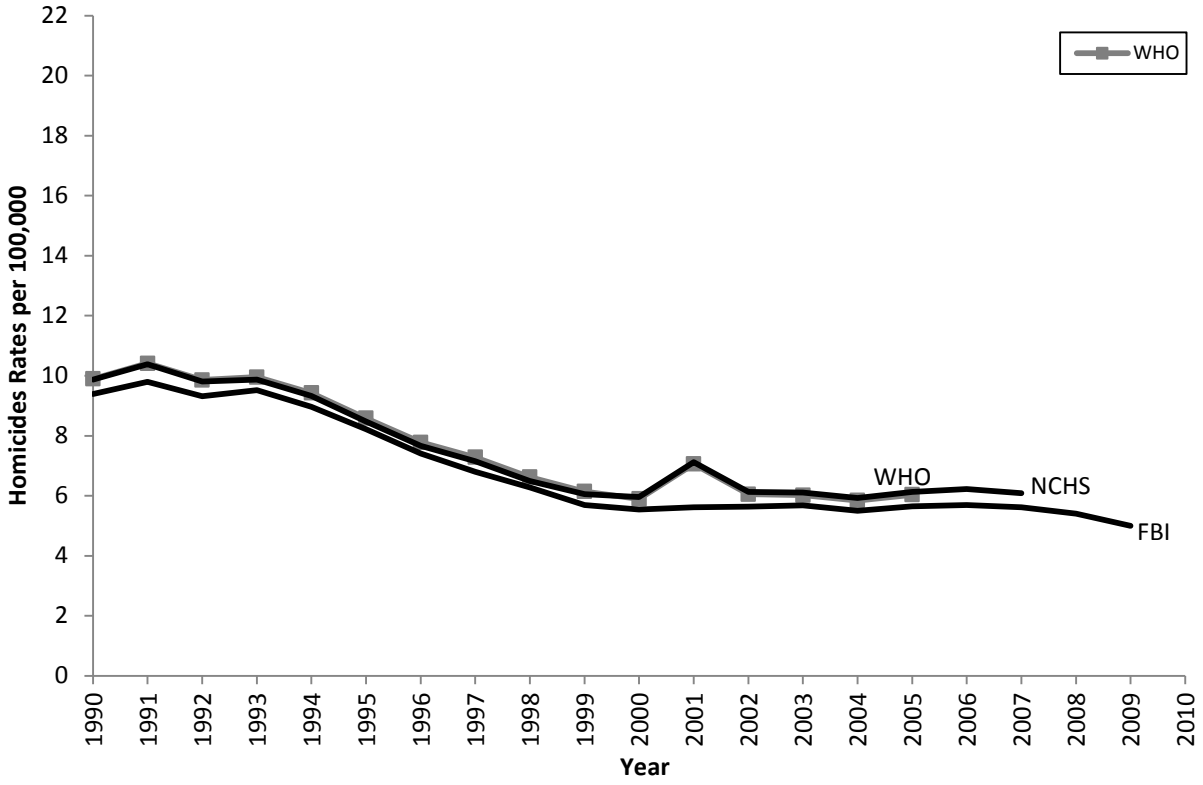

Figure 4. Homicide Rates in the United States According to the FBI, the NCHS, and the WHO, 1990-2005.

Sources: FBI (2011b), NCIPC (2011a; 2011b), and WHO (2011a).

Agreement between two instruments measuring the same phenomena is viewed by scholars as a sign of their accuracy. But FBI and NCHS data have not always converged. Cantor and Cohen (1980) compared homicide data for the period 1933-1975 from these sources to determine whether differences between the two series lead to differences in substantive results when each is used as a dependent variable.[26] The authors noted several problems. First, the two series are incomparable prior to 1949 because they define homicide differently (Cantor and Cohen 1980:125). FBI numbers exclude the killings of individuals by police officers in the line of duty while NCHS data include them. Second, they find time periods where there are significant differences in magnitude between the counts from each series. An interesting pattern is that from the late 1930s until 1961, FBI homicide rates are higher than NCHS rates, leading the authors to comment that if vital statistics are more accurate, as many scholars contend, then the FBI overestimated homicide rates during this period (Cantor and Cohen 1980:124, 132). Third, the authors find periods where there are differences in the trends depicted by the numbers from each source. For example, "during the 1960-1963 period, the two indicators move in opposite directions" (Cantor and Cohen 1980:135).

Most of the problems Cantor and Cohen observe are found in data prior to the early 1960s. This resonates with Riedel's (1999:82) claim that "as a rule, more recent data are more

[26] The authors compare several time series produced by the NCHS and the FBI. I present their conclusions regarding each source in general instead of referring to each specific time series.

reliable than older data." The data I show in Figures 3 and 4 support this view as well. The problem with data for Mexico is that there are marked differences—in magnitude and direction—between vital statistics and statistics from public prosecutor's offices throughout the period for which numbers are available from both sources. In other words, the degree of convergence between the two sources is nowhere near the one found for the equivalent sources in the United States, with the added puzzle that until 2007, and contrary to the conventional expectations of the literature, the homicide rate from the INEGI is consistently lower than the one from the SNSP.

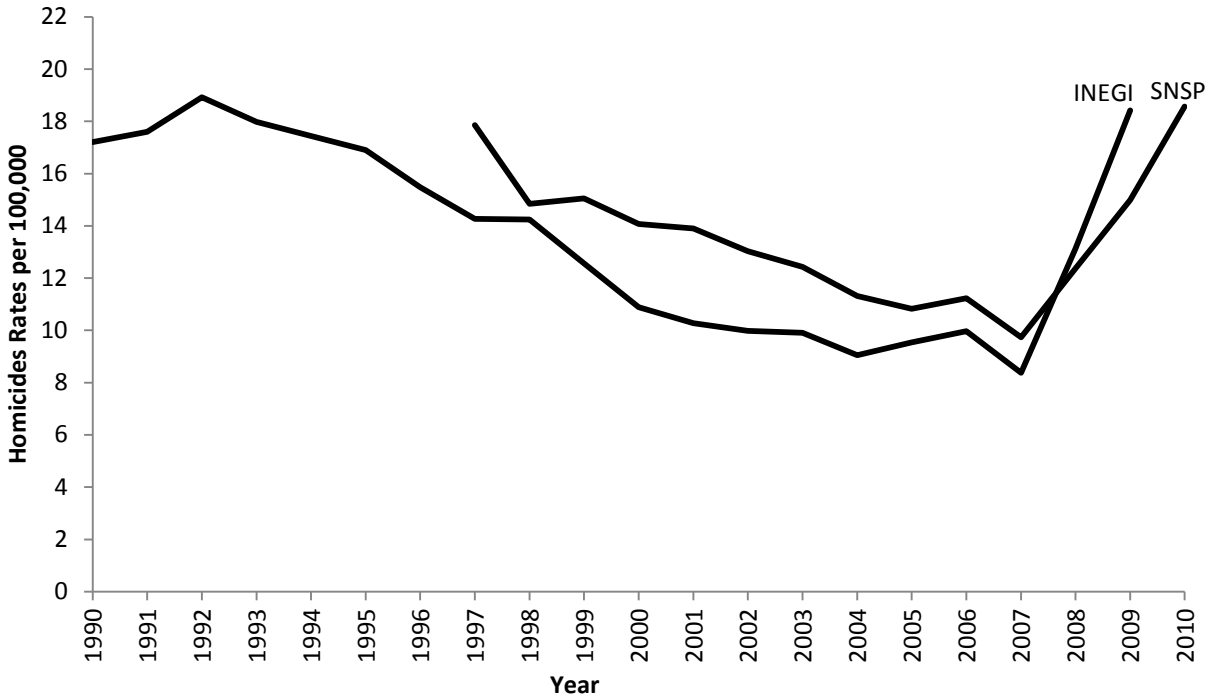

Figure 5. Homicide Rates in Mexico According to the INEGI and the SNSP, 1990-2010.

Sources: Authors calculations based on data from the INEGI (2011), the SNSP (2011), and the CONAPO (2011).

Table 3. Homicide Rates in Mexico According to the SNSP and the INEGI, 1997-2009

	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
SNSP	17.9	14.8	15.1	14.1	13.9	13.0	12.4	11.3	10.8	11.2	9.7	12.4	17.9
INEGI	14.3	14.3	12.6	10.9	10.3	10.0	9.9	9.1	9.5	10.0	8.4	13.1	18.4
Ratio	1.25	1.04	1.20	1.29	1.35	1.30	1.25	1.25	1.14	1.13	1.16	0.94	0.97

Sources: Author's calculations based on data from the INEGI (2011), the SNSP (2011), and the CONAPO (2011).

Figure 5 shows homicide rates from both sources, ending with the most recent available figures for each. SNSP data is available from 1997-2010, while INEGI data is available for the

period 1990-2009.[27] The two trend lines show considerably more discrepancies than their equivalents for the United States. For a more precise assessment, Table 3 presents numerical values only for the years for which figures are available from both sources. I also include a ratio calculated by dividing SNSP homicide rates by INEGI homicide rates as an indicator of agreement between the two sources. A ratio of 1.25 for 1997 means that the SNSP reported 25 percent more homicides than the INEGI that year. The mean ratio for all years included in the table is 1.18, indicating that on average SNSP reported 18 percent more homicides than the INEGI during this period. If we exclude 2008-2009, the years in which INEGI rates surpass those of the SNSP, the ratio increases to 1.22. The largest difference between the two sources appears in 2001, when SNSP reports 35 percent more homicides than the INEGI. The smallest difference—again, excluding 2008-2009—appears in 1998, when the SNSP reports four percent more homicides than INEGI.

In addition to differences in magnitude, the figures from each source often move in different directions. From 1997 to 1998 homicide rates dropped by 17 percent according to the SNSP, but they remained essentially the same according to the INEGI. SNSP figures show an increase from 1998-1999, but INEGI registers a decrease. From 1999-2004 both sources show decreasing homicide rates, but at a different pace. INEGI figures show a much steeper drop from 1999-2001, but then the pattern reverses, with SNSP figures decreasing faster. From 2003-2004, the drop is comparable. Rates from the SNSP decrease by 8.9 percent in this period while rates from the INEGI decrease by 8.6 percent. From 2004-2005, the two rates move in the opposite direction once again; the SNSP rates decrease but the INEGI rates increase. From 2005 onward the two rates follow the same trend, but with differences in magnitude. The most noticeable discrepancy is from 2007-2008 when the INEGI reports a percentage change in homicide rates that is more than double the one reported by the SNSP. SNSP rates increase by 27 percent while INEGI homicide rates increase by a staggering 57 percent.

Merino (2011) noted the broad discrepancy between these two sources in a short online magazine article, but a detailed assessment such as the one I have presented here had yet to be conducted. Moreover, an explanation for the differences between the two sources is a pending matter. More research is required to understand the factors driving the differences in magnitude and direction between SNSP and INEGI data. My intention here, however, is simply to further the point that given these differences, rates from both sources should be viewed with a measure of caution.

There is a more fundamental concern with the data for Mexico. As I mentioned above, scholars generally agree that vital statistics are more reliable than police statistics. While it may seem reasonable to assume that the social significance of homicide makes it so that bodies usually turn up, a compelling case for the accuracy of the data cannot be made on this supposition alone. All too often Mexican scholars (Zepeda Lecuona 2004:55, 64-65) assert the accuracy of homicide counts without presenting concrete empirical support for such a claim. Granted, the necessary information to do this with statistical rigor is often unavailable, but that is no excuse for obviating a series of critical reflections altogether.

Newspaper coverage on the current war on drugs in Mexico suggests that official statistics underestimate the real magnitude of homicide rates. Stories about the tactics cartel henchmen employ to dispose of victims and the discovery of mass graves point to hundreds of bodies that never make it to official counts. For example, on January 24, 2009, Santiago Meza

[27] In most countries, the availability of mortality data lags behind that of police data by at least two years. For example, as I write this paper—in 2011—the latest mortality statistics available for the United States are from 2007.

López—aptly nicknamed *El Pozolero* after a traditional Mexican stew—was captured by members of the Mexican army and the federal police. López confessed to having dissolved in acid the bodies of over 300 victims in 2008 alone as part of his routine work for Eduardo Teodoro García Simental, a member of the Sinaloa cartel (Martínez 2009; Reforma 2011b). When Simental was captured roughly a year later, he confessed to having incinerated and dissolved dozens of bodies as well (de la Luz 2010; Reforma 2010).

More recently, Mexican authorities have uncovered mass graves where drug traffickers have buried dozens of victims. In August 2010, the federal police discovered a grave in the state of Tamaulipas with the bodies of 72 Central and South American migrants. Initial investigations suggested that members of the Zetas cartel had tortured and killed the victims after they refused to join their organization. Recent accounts, however, have shed light on a more gruesome side of incidents such as these. In June of this year, Dane Schiller (2011), a journalist working for the Houston Chronicle, interviewed a drug-trafficker that decided to speak out against what he views as increasingly ruthless recruiting practices. According to this man who has allegedly worked for the Zetas and the Gulf cartel, fellow drug traffickers are kidnapping bus passengers and forcing them to participate in gladiator-like tournaments as part of a grooming process for new assassins. "The elderly are killed. Young women are raped. And able-bodied men are given hammers, machetes and sticks and forced to fight to the death" (Schiller 2011). Those who perish are thrown in pits that authorities often fail to discover.

According to an article published in *Reforma* on April 19, 2011 (Rea and Baranda 2011), since President Calderon's administration began in 2006, 647 bodies have been found in 156 narco-graves—as they have come to be called in the Mexican Press—across 22 states and the Federal District. Based on reports from newspapers, state and federal government agencies, including the National Commission for Human Rights, the authors note the body count has increased significantly every year. The count rose from 32 bodies found in nine different graves in 2007 to 249 bodies in 46 graves in 2010.

The National Commission for Human Rights has reported 5,397 forced or involuntary disappearances since 2006 and many are thought to be connected to drug trafficking violence (Rea 2011). A rigorous count has yet to be conducted (Rea 2011), but these news stories and others like them (Reforma 2011c; 2011d; 2011e; 2011g; 2011h) place doubt on the accuracy of official mortality data. American scholars have long recognized that some homicides are effectively hidden from authorities and never reach official counts, but the consensus is that they are relatively few. The current political conjuncture in Mexico, however, is indicative of a far more serious problem, one that seems to have a structural character and points to unaccounted homicides in the hundreds and perhaps thousands.

There are two additional issues regarding homicide data that are worth mentioning because they constitute pending research agendas in Mexico. One is the quality of medical certification of the cause of death. The other is the fact that rates become increasingly unreliable with smaller units of analysis. Our knowledge of both issues in the Mexican context is marred by a dearth of research, but, once again, studies focused on the United States can serve as a searchlight for potentially relevant factors.

Homicide figures are only as good as the original diagnosis that determines the cause of death. Whether a physician, coroner, or police investigator, the moment when the cause of death is identified is a potential source of misreporting. Public health scholars in the United States have focused more on studying the validity of cause of death certification in the context of natural or disease-related causes rather than external causes such as homicide, though suicide has

received a fair amount of attention (Moriyama et al. 1958; Gittelsohn and Royston 1982; Kircher, Nelson, and Burdo 1985; Álvarez et al. 2009). This is partly because scholars seem confident that identifying homicide as a cause of death is less problematic than, say, distinguishing whether this or that cardiovascular disease was the cause (Cantor and Cohen 1980:126-127).

Although more research is needed to substantiate this convention, current findings do support it (James, Patton, and Heslin 1955; Moyer, Boyle, and Pollock 1989). Research in this area often takes the form of having a group of independent medical experts identify the cause of death for a sample of cases based on the full extent of medical, legal, and police documentation and comparing it to the cause of death registered on the original death certificate (Moyer et al. 1989). Disagreement between the two is taken as an indication that the original death certificate incorrectly identifies the cause of death. In a paper based on such a research design, Moyer et al. (1989:1028-1029) found that death certificates and the assessment of an independent review board agreed that homicide was the cause of death in 93 percent of the cases in their sample. They concluded that death certificates where not an accurate source of information for identifying the type of weapon used in homicide cases, but they were reliable for identifying homicide as a cause of death.

Although the authors argue for the generalizability of their findings (Moyer et al. 1989:1031-1032), the question is debatable because their sample focuses on a particular group: U.S. army veterans. Indeed, representativeness is a problematic question for this type of study in general (e.g. James et al. 1955:45). The more important point I want to make is that certifying homicide as a cause of death is not entirely without problems, even if it is less problematic relative to other causes. From a technical standpoint, proving intentionality such that homicides can be accurately distinguished from suicides or accidents has always been a thorny issue (Sorenson, Shen, and Kraus 1997b). Some believe this has led to systematic misclassification that affects homicide counts as a whole, but with pronounced influence on certain subgroups such as infanticides, which for this and other reasons have been historically under-recorded (Cashell 1987; Sorenson, Shen, and Kraus 1997a; Monkkonen 2001a:55).

A more vexing question is how social factors influence a medical expert's decision to choose one cause of death over another. Scant attention has been given to the identification of the cause of death as a social process, though research exists that attests to the relevance of social factors. For example, Sorenson, Shen, and Kraus (1997b) wanted to find out if the demographic attributes of victims—such as age, sex, and race—and the characteristics of the incident—such as place of occurrence–had an impact on the likelihood of medical examiners classifying the cause of death in cases of death by injury as undetermined. They found the 'undetermined' category was not assigned at random among the cases in their sample. Race, in fact, was a key factor, with the deaths of Blacks, Asians, and Native Americans being far more likely to be classified as undetermined than Whites.

The fact that the category is not assigned randomly leads them to conclude that "the implications for certain population groups can be substantial" and to speculate that social and organizational factors may play a role in coroners' judgments (Sorenson et al. 1997b:54-55). In their own words (Sorenson et al. 1997b:53):

> The professional practice of coroners may be influenced, as is possible in all occupations, by personal beliefs. These beliefs could shape the death certification process—for example, failure to consider suicide as a likely finding in the death of a preadolescent or

> failure to consider homicide as a possibility in the sudden death of an infant from a well-established family….
>
> The decision on intentionality, which influences the ultimate recording of a death as undetermined, may depend on a number of factors unique to different coroners' offices. For example, in large counties with sophisticated equipment, highly trained investigators, and the services of medical examiners (board-certified pathologists), it may be more likely that in-depth investigations would lead to the determination of the manner of death.

Both of these claims point to the influence of factors beyond the strictly technical assessment of the medical professional. The first emphasizes the potential impact of cultural beliefs on disregarding certain causes of death. The second draws attention to organizational features that vary across coroners' offices, much like the case I reviewed in the previous section regarding police departments. The latter two issues are important because they speak to the validity of the data itself, something statistical techniques cannot correct. As James et al. (1955:46) state:

> studies based upon mortality data gleaned from death certificates present elaborate analyses, by age, sex, and other factors, while accepting with little question the accuracy of the basic record itself. Concern over accuracy of the specific measurement of cause of death should precede the question of the association of these causes with certain characteristics of the general population.

Statistical tools can deal with issues like missing data or calculating error, but if the original records do not reflect what they are supposed to—if, restating the example above, the cause of death registered on the death certificate reflects the coroner's inability to imagine wealthy parents killing their child instead of an accurate technical assessment—little can be done after they have been produced.

The literature on the United States suggests that problems affecting the quality of death certification in homicide cases are mostly confined to specific subgroups—infanticide being the most significant—such that national counts and trends are not severely affected. While this may be so, little to nothing is known about the nature and extent of these types of problems in data for Mexico. More research is needed to understand what factors matter in the Mexican context and what the extent of their impact is.

The last issue I want to address is the implications of using different units of analysis when studying homicide. Throughout this section, I have often qualified the claim that homicide data are more reliable than data for other crimes by specifying that this is especially the case for aggregate counts and long term trends. Accordingly, most of the references, evidence, and examples I have used so far correspond to large units of analysis such as countries or states within countries and shifts in rates for periods that extend over several years. The reliability of homicide counts and rates decreases with units of analysis that have smaller populations (Wiersema, Loftin, and McDowall 2000; Maltz and Targonski 2002; 2003; Lott and Whitley 2003:188; Pridemore 2005:262). Two interconnected problems are the key issues in this regard. One is a technical question having to do with how rates are calculated and the implications of this formula for the interpretation of results and the reliability of statistical estimates. The

second concerns the quality of the data for small political-administrative units that make up the local level of government such as municipalities in Mexico or counties in the United States.[28]

It has become a staple of published research to present homicide data in terms of annual rates per 100,000 residents.[29] This measure has contributed to standardizing research results across countries, allowing for an increasingly broader range of comparative studies to be conducted; however, it also makes homicide ratios dependent on population size. This creates two potential problems. First, rates can misrepresent levels of violence in small communities by magnifying them disproportionately. Trivial changes in the numerator—the homicide count—are highly influential when the denominator is small. In other words, "the fewer the residents of a given place, the more only a few murders vastly inflate its homicide rate" (Dykstra 2003:556). Small populations can invalidate homicide ratios as a measure of violence. The second issue is that mistakes in estimating the population size will produce unreliable ratios as well. This is not an infrequent problem. As Maltz and Targonski (2002:301-306) note, in the United States, inaccurate population estimates are a serious source of error in UCR crime data, especially for small counties.

A hypothetical example should suffice to illustrate the mechanics of this problem. If one homicide occurs in a community of 500 residents, the rate would be an astronomical 200 homicides per 100,000 people. One of the problems with homicide counts in small communities is that they can vary significantly from one year to the next. Suppose this one incident in the small community fails to materialize; perhaps the bullet only brushed its target, resulting in assault instead of homicide. The homicide rate would drop from 200 to zero in one year! According to these rates, the first year this community is as dangerous as a war zone, the second it is a model of public safety.[30] The point is simple: the precision of our estimates of homicide rates depends on population size. The smaller the population, the greater the probable error in the ratios derived from them (Dykstra 2003:557).

While this example may seem like an improbable representation, it is not. There are a significant number of small communities in Mexico and a sizable proportion of the country's population resides in them. Furthermore, violent crimes such as homicides are so rare, that it is not uncommon for these communities to have counts of zero incidents on any given year or for their numbers to fluctuate considerably from one year to the next. This is also the case for the United States.

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[28] Municipalities are the smallest political and administrative units of government in Mexico. Counties are their equivalent in the United States.

[29] Homicide ratios for any given place are calculated by multiplying the total number of homicides by 100,000 and dividing the result by the total population: $rates = \frac{(homicides * 100{,}000)}{population}$

[30] In a review of two books that study levels of violence in the Western United States during the nineteenth century, Dykstra (2003:556-560) presents several more examples such as this one that illustrate the problem with ratios. For more examples and a lengthier discussion of the issue see Monkkonen (2001b:3-4).

Table 4. Population in Mexico by Size of Municipality, 2005

Municipality Size	Resident Population	Percentage of Total Population
1 to 2,499 population	508,734	0.5
2,500 to 9,999 population	4,129,878	4
10,000 to 49,999 population	21,580,502	20.9
50,000 to 99,999 population	13,298,908	12.9
100,000 to 999,999 population	48,523,934	47
1,000,000 or more	15,221,432	14.7
Total Population	103,263,388	100

Source: INEGI (2010a).
Note: These calculations include the populations from the sixteen boroughs into which the Federal District is divided.

Table 5. Municipalities in Mexico by Population Size, 2005

Municipality Size	Municipalities	Percentage of Municipalities
1 to 2,499 population	392	16
2,500 to 9,999 population	735	30
10,000 to 49,999 population	951	38.8
50,000 to 99,999 population	195	7.9
100,000 to 999,999 population	170	6.9
1,000,000 or more	11	0.4
Total	2,454	100

Source: INEGI (2010a).
Note: Two municipalities are excluded because they registered zero residents in the 2005 Population Count. The 16 delegations into which the Federal District is divided are included in these calculations.

Table 6. Population in the United States by Size of County, 2009

County Size	**Resident Population**	**Percentage of Total Population**
1 to 2,499 population	219,136	0.07
2,500 to 9,999 population	3,622,060	1.2
10,000 to 49,999 population	36,832,124	12
50,000 to 99,999 population	27,235,492	8.9
100,000 to 999,999 population	155,472,370	50.6
1,000,000 or more	83,625,368	27.2
Total	307,006,550	100

Source: Author's calculations based on data from the U.S. Census Bureau (2010).

Table 7. Counties in the United States by Population Size in 2009

County Size	Counties	Percentage of Counties
1 to 2,499 population	142	4.5
2,500 to 9,999 population	570	18.1
10,000 to 49,999 population	1,472	46.8
50,000 to 99,999 population	385	12.2
100,000 to 999,999 population	533	17
1,000,000 or more	41	1.3
Total	3,143	100

Source: Author's calculations based on data from the U.S. Census Bureau (2010).

Table 4 presents the proportion of Mexico's population that resides in municipalities of varying sizes. The information is presented in both absolute numbers and percentages. For example, the first category in the table shows that a total of 508,734 people live in municipalities with a resident population of one to 2,499 people. This is equivalent to 0.5 percent of the country's total population. Table 5 classifies the municipalities in Mexico by size of resident population, showing the percentage of municipalities that correspond to each of the categories for size of resident population. Out of the 2,454 municipalities in Mexico, 392, that is, 16 percent, have a resident population within the range of one to 2,499 people. The information for these tables comes from the 2005 Population Count, which is a shorter survey conducted by the INEGI between the decennial censuses.[31] Tables 6 and 7 show equivalent data for counties in the United States.

The number of municipalities with small populations in Mexico and the United States is not trivial. And neither is the proportion of the population that resides in them. But before looking at these figures more closely, we need to know how small is too small. At what point is a population too small to produce reliable homicide rates? Where do we draw the line? No empirical research has been conducted with figures for Mexico to determine this threshold, but studies based on data from U.S. counties show a considerable increase in estimation errors for communities with populations smaller than 100,000 (Wiersema, Loftin, and McDowall 2000:334-335; Maltz and Targonski 2002; 2003; Lott and Whitley 2003:188; Pridemore 2005:262).

In a study comparing homicide rates and counts from the UCR's Supplementary Homicide Reports to those from the NCHS's mortality statistics, Wiersema, Loftin, and McDowall (2000:334-335) found significant differences "because of the unreliable estimates in counties with populations of fewer than 100,000." Maltz and Targonski (2002) arrived at the same conclusion regarding UCR county-level crime data in general, not just for homicides. For example, they note that "whereas 5% of data points from counties over 100,000 in population are in error by 30% or more, this is true of 14% of the data points from counties under 100,000" (Maltz and Targonski 2002:313). And in a piece that reviews some of the literature on county-

[31] At the time of writing this thesis, INEGI had begun publishing the results from the 2010 decennial census. Only preliminary figures were available in its website (http://www.censo2010.org.mx/) and they did not include the numbers for the categories I present in Tables 4 and 5.

level homicide data, Pridemore (2005:264) concluded that "using counties as the unit of analysis results in skewed distributions, imprecise estimates that vary by county population, and in some cases a high proportion of zero counts, all of which lead to problems for OLS estimates".

These studies do not simply assess the technical complications inherent in the formula used to calculate homicide rates. They report serious problems with the quality of county data that stem beyond that issue. Data from the UCR and the NCHS do not line up and converge at the county level they way they do for aggregated figures at the national level (Wiersema et al. 2000:321-329). Missing data seems to be a more common feature at the county level and the imputation methods used by the FBI generate problems of their own (Wiersema et al. 2000:331-332; Maltz and Targonski 2002:306-309; 2003:201). Zero counts and erroneous population estimates also seem to be more prevalent in these data (Pridemore 2005:259). For Maltz and Targonski (2002:299), the problems are sufficiently severe to assert "that county-level crime data, as they are currently constituted, should not be used, especially in policy studies".

So how many municipalities in Mexico have a population of 100,000 or less? And what percentage of the population lives in municipalities such as these? Table 5 shows that 2,273 municipalities out of 2,454 have a population smaller than 100,000. This is equivalent to 93 percent of all municipalities in Mexico. Furthermore, Table 4 shows that 39,518,022 people reside in these municipalities; 38 percent of Mexico's population. By way of comparison, Table 7 shows that 2,569 out of a total of 3,143 counties in the United States—82 percent—have a population smaller than 100,000. And 22 percent of the country's population—67,908,812—resides in them.

If the data for municipalities in Mexico are as problematic as the data for counties in the United States, these numbers point to a greater amount of affected data than in the United States. But are they as problematic? We do not know. Although the demographics alone indicate the importance of the issue, data for Mexican municipalities have not been subject to analyses such as those mentioned above for U.S. counties.

Not all the problems with U.S county-level data are equally intractable. Scholars have devised ways to deal with them ranging from statistical techniques that more effectively account for issues like missing data and inaccurate population estimates to improvements in the data collection process (e.g. Monkkonen 2001b; Lott and Whitley 2003; Pridemore 2005:258-260). The more important point I want to make is that you cannot propose solutions until you have a sense of the problems and their magnitude, a pending research task for municipality-level data on Mexico.

Conclusion

Homicide data are generally more reliable than data for other crimes, but this does not mean their accuracy can be taken for granted. Homicide rates and counts are socially produced just like any other crime measure and as a result they can suffer from problems that place their validity in question. The purpose of revealing the social character of homicide statistics was to show just how difficult it is to get the numbers right. Figuring out the facts, Merton (1959:xiv) tells us, is often neglected as a preliminary task of secondary importance, one that should be carried out quickly and without much exertion so that we may proceed to the relevant, substantive part of our research.

> Too often… this kind of inquiry is described as "mere fact-finding." Indeed, this phrase is so thoroughly stereotyped that the term "fact-finding" is almost always prefaced by that

> adjective of disparagement "mere." The hackneyed phrase often expresses an unexamined and impatient philosophy of investigation. It reflects the compelling urge to arrive directly at an explanatory idea (Merton 1959:xiv).

Taken seriously, fact-finding is not a straightforward task of looking for data; it requires a deeper understanding of how data are socially produced and what technical deficiencies our current estimation methods entail. This knowledge marks the limitations of our claims and, perhaps more importantly, it sets the boundaries for the types of claims that are possible given the state of empirical evidence.

In this chapter, I tried to draw a map of these limitations and boundaries by exploring the strengths and weaknesses of the two most important sources of homicide data for Mexico. I was particularly interested in highlighting how little we know about the quality of available information and drawing attention to issues of accuracy and completeness. These observations were not meant to invalidate homicide statistics for Mexico altogether; my intention, rather, was to emphasize the importance of approaching them critically while mapping the broad contours of a pending research agenda. The findings from this section should be kept in mind as I use homicide data in the following two chapters, first, to map the trend followed by homicide rates in Mexico during the past two decades, and second, to study the relationship between democratization and homicide rates. The strengths and weaknesses addressed above have guided my choices in the descriptive analysis that follows and the statistical study that constitutes the central contribution of this work.

CHAPTER III: HOMICIDE TRENDS IN MEXICO

Practiced investigators tell us that often a fruitful idea can be adequately formulated only after reasonably sound data have brought it to mind. In sociology as in other disciplines, pseudofacts have a way of inducing pseudoproblems, which cannot be solved because matters are not as they purport to be.

Robert K. Merton (1959:xiv-xv)

In the previous chapter, I discussed the strengths and weaknesses of various sources of homicide data for Mexico. I am not interested in adjudicating between them and arguing for the greater accuracy of one or the other. In this chapter, I will show that regardless of the source, there is a clear empirical pattern: homicides in Mexico, whether measured by counts or rates, decreased steadily since the early 1990s until the late 2000s. It is important to remember that by this time, the democratization process was well under way. In 2008 homicide rates began increasing and that trend continues to this day, but in the context of the past 20 years, this is an anomaly, not the norm. Furthermore, historically, Mexico has had far lower homicide rates than the countries to which it is frequently compared, such as Brazil or Colombia.

The analysis in this chapter is based exclusively on aggregated data. I use national counts and rates when discussing longitudinal trends. When looking at the state-level distribution of homicide rates for different time periods, I do not examine the specific numbers for all of Mexico's 31 states and the Federal District. I do comment on a group of states that have unusually high homicide rates compared to the rest of the country, but I concentrate my attention on describing the shape of the distribution and explaining what it tells us about levels of violence in Mexico more broadly. I do not study homicides at the level of municipalities in any part of this chapter.

Fernando Escalante Gonzalbo (2009; 2011) has made the most serious efforts so far to analyze homicide data for states and municipalities. He was the first to identify the decreasing trend in homicide rates and I build on his work here. His studies, however, are not without problems. Most notably, he manipulates the visual representation of the data and chooses to focus on states that are more compelling illustrations of his arguments while neglecting those that would impose a higher level of nuance. To avoid such problems, I use consistent scaling and sizing for charts that are meant to be compared and provide references to sources where the specific numeric data can be found.

I chose to focus on aggregated rather than state or municipal figures for three reasons. First, a detailed descriptive analysis of state and municipal-level homicide data requires a much longer study that surpasses the limitations of this chapter. More importantly—and this is the second reason—such a study is unnecessary for the point I want to make: that, as a general trend, homicide rates and counts were dropping for the past twenty years. Third, more studies about the quality of state and municipal data are required before venturing to make strong descriptive claims at these levels of analysis.

In the first part of this chapter, I compare homicide data from INEGI, SNSP, and WHO to show that all three map a decreasing trend in homicide rates and homicide counts that began in 1992 and continued roughly until 2007. I use aggregated figures at the national level, which tend to conceal the substantial variability found in homicide rates and counts across states in Mexico. In the second part, however, I use boxplots to represent this regional distribution for various time

periods. This allows me to point out two things: 1) the decreasing trend in homicide rates holds even once we account for the regional variation; and 2) the recent increase in violence is concentrated in a few states where homicide rates have soared, but they are outliers with respect to the rest of the country where homicide rates have remained relatively stable. In the third part, I present data produced by the federal government and the newspaper *Reforma* on drug-related homicides since 2006. These types of homicides have increased dramatically and they account for a considerable part of the recent upsurge in violence, something that further confirms the conjunctural nature of what is happening in Mexico. I conclude by comparing Mexico to other Latin American countries, showing that it is far less violent than has generally been portrayed.

Homicide Trends over Time

Figures 6 and 7 show total homicides and homicide rates, respectively, for Mexico according to INEGI, SNSP, and WHO figures. The timelines for each source are not uniform, but they include the latest data available for each one. As I mentioned in chapter two, INEGI data are available from 1990-2009 while SNSP data begin in 1997 and extend to 2010. In these graphs, I present WHO data from 1990-2005, although the figures are available since 1979. Unsurprisingly, the numbers from the INEGI and the WHO overlap, making the lines practically identical. There are differences of magnitude between INEGI and SNSP numbers—which I commented on above—but all three sources in both graphs agree on the direction of the overall trend: after a rise in homicides from 1990-1992, counts and rates dropped more or less steadily until 2007.

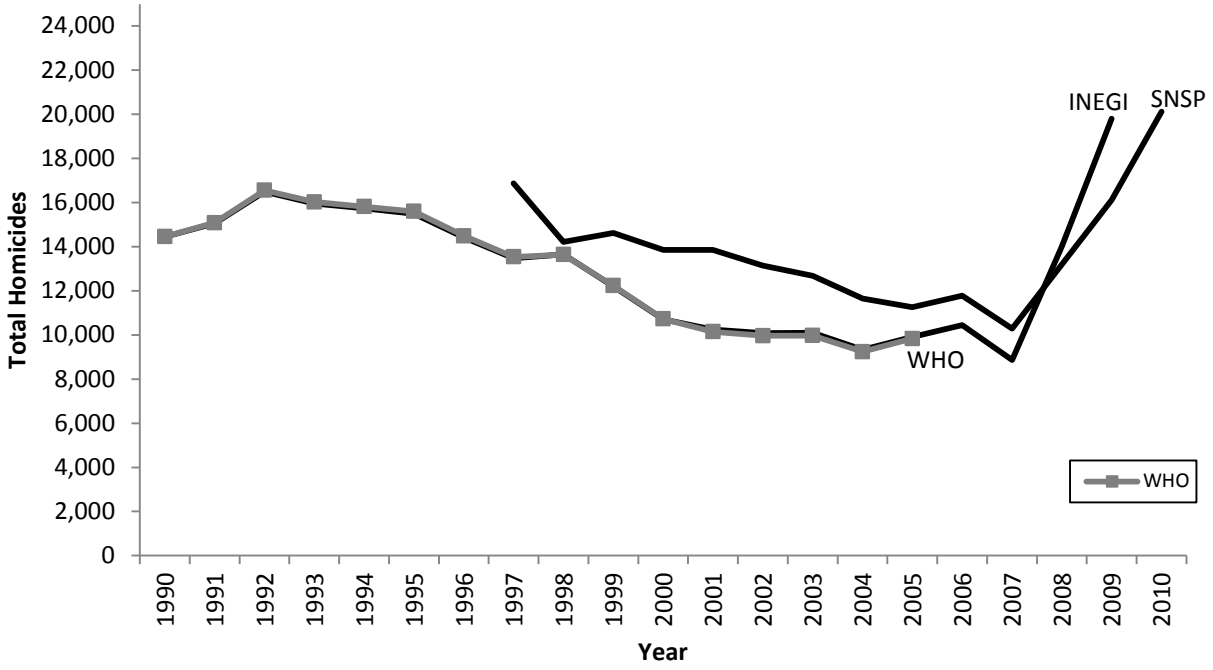

Figure 6. Total Homicides in Mexico According to the INEGI, the SNSP, and the WHO, 1990-2010.

Source: INEGI (2011), SNSP (2011), and WHO (2011a).

The time series for the INEGI data in Figure 6 shows that homicide counts increased to 16,493 in 1992 and then began dropping until they reached their lowest point in 2007 with a total of 8,864 homicides. This amounts to a 46 percent decrease in total homicides over the course of 15 years. This downward trend was interrupted three times, but only slightly. In 1998 homicide counts increased by 173 (one percent), in 2005 by 590 (six percent), and in 2006 by 531 (five percent). The drops throughout this period, however, were much steeper, so when the count increases for a third time in 2006, the result is still smaller than any figure from the 1990s. From 2008 onward counts began increasing, reaching their highest point in the past twenty years in 2009 with 19,804 homicides, a staggering sum that surpasses the previous high point in 1992. The contrast is so sharp that it is a signal of the recent, rather than historical character of the current upswing.

The time series from the SNSP in Figure 6 shows a similar pattern to the one from the INEGI for those years in which there are data for both sources, 1997-2009. Prior to the 2008 upsurge, 1997 registered the highest count from the SNSP, a total of 16,866 homicides. The lowest point is reached in 2007 with 10,253 homicides, but by 2010 it has increased to 20,127 homicides. From 1997 to 2007, the downward trend is interrupted only twice, in 1999 and 2006. And once again, the increases in these years are small, amounting to only three and five percent respectively.

Figure 7 presents homicide rates per 100,000 people for the same sources and time periods. The directions of the trends are identical to those found in Figure 6, but the magnitudes differ. As I mentioned above, homicide counts according to the INEGI dropped 46 percent from 1992 to 2007. Homicide rates, however, declined by 55 percent during that period. The homicide rate in 1992 was 18.9, but had dropped to 8.4 by 2007. As with counts, homicide rates began increasing in 2008, reaching 18.4 homicides per 100,000 by 2009.

SNSP homicide rates replicate the movements in the trend line for SNSP homicide counts exactly. There is a general downward trend in homicide rates from 1997 to 2007, with slight increases in 1999 and 2006 and a violent upswing starting in 2008 that reverses the trend completely. But this reversal takes place long after the key junctures in the process of democratization had passed. Indeed, what Figures 6 and 7 show is that Mexico, as a whole, was becoming less violent just as democratization was moving forward.

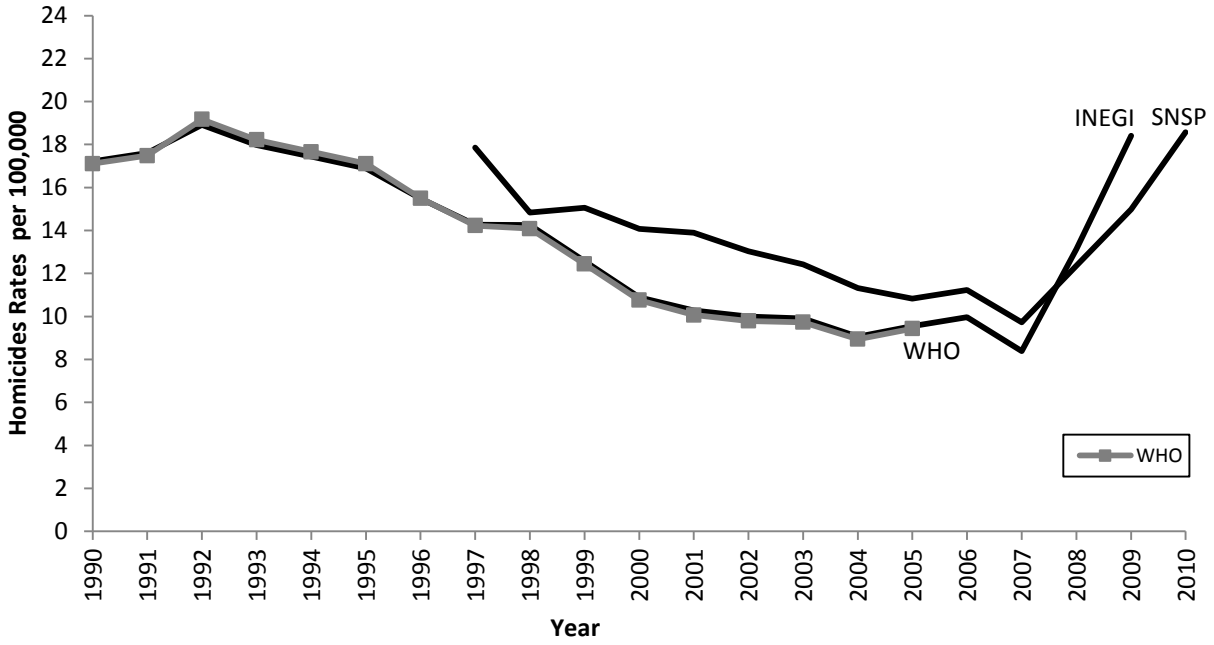

Figure 7. Homicide Rates in Mexico According to the INEGI, the SNSP, and the WHO, 1990-2010.

Source: Authors calculations based on data from the INEGI (2011), the SNSP (2011), the WHO (2011a), and the CONAPO (2011).

The problem with aggregated figures at the national level is that they conceal variations among smaller units of analysis. They tell us nothing about how measures such as homicide rates behave at the level of states or regions. A few extreme values in one direction or another from a small group of states can skew national figures significantly, making them an incomplete, if not misleading, representation of a more nuanced process. In the following section, I show that the decreasing trend I have pointed out here remains even when accounting for the distribution of homicide rates across states in Mexico.

The Geography of Violence

In addition to the issues I addressed in chapter two, there are two factors, strictly concerned with the figures themselves, that make studying homicide rates at the level of states in Mexico challenging. First, homicide rates in Mexico vary considerably from state to state. The distribution of state homicide rates has a large spread and over the last few years a handful of strong outliers have emerged. Some states in Mexico have homicide rates as low as those of Western Europe—below five homicides per 100,000—while others are as high as the most violent countries in Africa or Latin America—above 20 homicides per 100,000. This makes it difficult to formulate generalizations about trends over time. Second, the homicide rates of certain states often change drastically from one year to another, anomalies that are likely the result of the type of problems discussed in chapter two. This latter issue is common to homicide rates in the United States and other countries as well, but the changes in Mexico's states are more extreme.

My goal in this section is to capture the variation in homicide rates across states and its change over time, without having to study the specific figures for all 31 states and the Federal

District, yet somehow smoothing out the data to avoid giving undue weight to figures from what could be anomalous years. Boxplots based on three year averages of homicide rates are an appropriate means for this task. A boxplot is a graphical representation of the five-number summary, which consists of the smallest value of a distribution, the first quartile, the median, the third quartile, and the largest value. These measures accurately describe the shape of skewed distributions with large spreads. As for the homicide rates, using three year averages for each state is an efficient, if imperfect, way of dealing with years when the figures are artificially problematic. Indeed, controlling for chance variation by using two or three year averages at all levels of analysis has become a common strategy in the homicide literature (Pridemore 2005:263).

Figure 8 presents seven boxplots based on INEGI mortality statistics. I constructed each boxplot by calculating the average homicide rate for each state and the Federal District in each of the seven time periods represented. Because there is an even number of years in the INEGI data series, all but the last time period in Figure 8 are three year averages. The line in the middle of each box represents the median, which means that half of all homicide rates in that period lie above that line and half lie below it. The line that forms the lower end of each box is the first quartile, which marks the 25th percentile. This means that 25 percent of all states have homicide rates lower than the rate marked by that line and 75 percent have higher rates than the rate marked by that line. The line that forms the upper end of each box is the third quartile, or 75th percentile. Each box, thus, shows the spread of the middle half of the data. The lines that extend outward from the box toward the top and the bottom each represent another 25 percent of the values, with the end points being the highest and lowest values found in the distribution of average homicide rates across states for each period. These end points also mark the full range or spread of the data.

I used the *1.5 x Interquartile Range* rule to identify potential outliers—values far outside the range of the rest of the data in each period. These represent states with homicide rates that are considerably lower or higher than the overall pattern. Potential outliers are represented by unfilled circles. I used the *3 x Interquartile Range* rule to indentify extreme outliers, which are represented by filled circles.

Figure 8 shows three important patterns. First, all component parts of the boxplots decreased from 1990-1992 to 2008-2009, a trend represented by the lower position assumed by the markers for the minimum average homicide rate, the first quartile, the median, the third quartile, and the maximum average homicide rate at the end of the series compared to the beginning. With the exception of the minimum value, these measures reached their lowest point in the 2005-2007 period, but their values at the end of the series are still smaller than they were during most of the 1990s. The median, for example, increases slightly from the first to the second period—as do most of the other measures as well—but then it falls, without interruptions, from 13 homicides per 100,000 in 1993-1995 to seven in 2005-2007. This means that half of all states in Mexico had average homicide rates below seven, that is, homicide rates equal to or lower than those for the United States during most of the present decade.

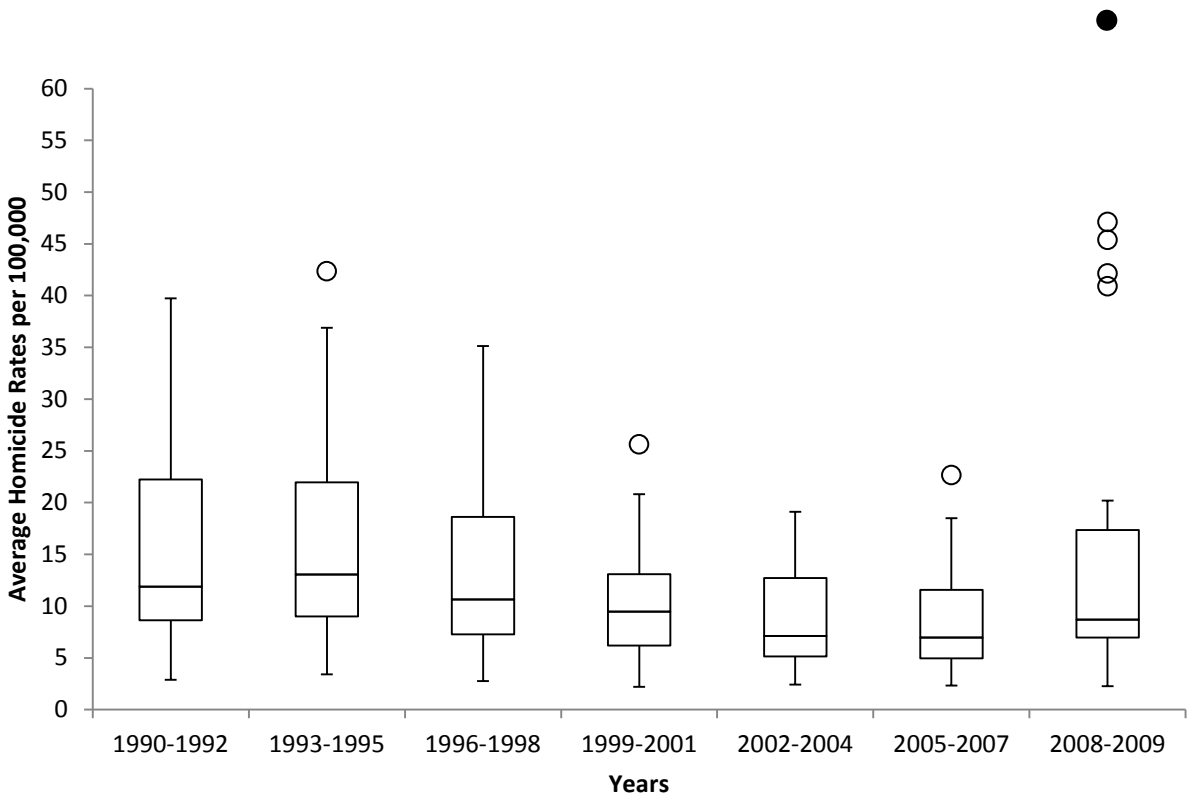

Figure 8. Boxplots Comparing the Distribution of Average Homicide Rates in Mexico's 31 States and the Federal District According to INEGI Data, 1990-2009.
Source: Author's calculations based on data from the INEGI (2011) and the CONAPO (2011).

The second key pattern is that the full range of values in the distribution—the difference between the largest and the smallest figure—and the range for the middle half of the data—the difference between the third and the first quartile—decrease from 1990-1992 to 2005-2007. They both increase in 2008-2009, but, as with the rest of the individual measures, the full range remains smaller than at any point prior to 2002 and the range for the middle half of the data remains smaller than at any point prior to 1999. This overall reduction in the spread of the distribution means that, for the most part, Mexico became less violent in the course of the past twenty years.

The third pattern to note is that most of this reduction takes place in the values above the median. The line extending upward from the boxes and the upper side of the boxes become gradually smaller. The size of the lines extending downward from the boxes and the size of the lower part of the boxes also change, but in proportionally lower magnitudes. The maximum value of the distribution falls systematically from the 1990-1992 period to the 2005-2007 period. The value of the third quartile takes a similar path, falling from 22.2 in the period 1990-1992, its highest point, to 11.6 in 2005-2007, its lowest.

These decreasing trends began to change in 2008, but only for a few states. The maximum value and the third quartile increased in 2008-2009, but the full range is still smaller than in any period prior to 2002 and the range of the middle half of the data is smaller than in any period before 1999. What these figures show is that the drastic upswing in homicide rates starting in 2008 was the result of five states that became considerably more violent while rates in most of the country remained relatively stable. In other words, Mexico as a whole has become

less violent than it was twenty years ago; the turmoil observed today is recent and concentrated in a small group of states.

This concentration of violence in a few states can be identified with more precision by taking a closer look at the outliers in Figure 8. The outlying values in 1993-1995, 1999-2001, and 2005-2007 all correspond to the state of Guerrero. The outliers in 2008-2009, in ascending order, are Baja California with 40.9 homicides per 100,000, Sinaloa with 42.1, Guerrero with 45.4, Durango with 47.1, and the filled circle that lies above the range of the y-axis corresponds to Chihuahua, which according to INEGI data registered an astounding 93 homicides per 100,000 for this period.

Table 8 shows the top ten states with the highest average homicide rates from the same source, the INEGI, and for the same time periods found in Figure 8. For the most part, the same group of states appears in every time period, indicating that violence in Mexico is concentrated mostly in the northwest and central-pacific regions of the country. Although homicide rates in these states have been consistently higher than in the rest of the country during the past two decades, their rates also decreased from the early 1990s until 2007.

Table 8. Top Ten States with Highest Average Homicide Rates Based on INEGI Data, 1990-2009.

1990-1992		1993-1995		1996-1998	
Guerrero	39.7	Guerrero	42.3	Guerrero	35.1
Oaxaca	39.5	Oaxaca	36.9	Oaxaca	29.7
Michoacán	33.1	Michoacán	32.0	Sinaloa	23.9
México	32.7	Morelos	31.5	Chihuahua	22.1
Durango	29.3	México	27.3	Michoacán	21.8
Morelos	28.6	Nayarit	26.8	Morelos	21.8
Nayarit	28.1	Sinaloa	24.2	México	21.0
Sinaloa	22.7	Durango	23.6	Baja California	20.0
Colima	22.1	Chihuahua	21.4	Chiapas	18.2
Baja California	16.0	Baja California	17.7	Durango	17.2

Table 8 (*continued*)

1999-2001		2002-2004		2005-2007	
Guerrero	25.6	Guerrero	19.1	Guerrero	22.6
Baja California	20.8	Oaxaca	17.4	Michoacán	18.5
Oaxaca	20.3	Chihuahua	17.4	Chihuahua	17.6
Chihuahua	19.3	Baja California	17.1	Sinaloa	16.3
Sinaloa	19.0	Sinaloa	16.2	Oaxaca	15.3
Morelos	16.4	Nayarit	14.1	Baja California	14.6
México	15.8	México	13.7	Nayarit	11.9
Michoacán	15.4	Michoacán	13.6	México	11.8
Durango	12.3	Durango	12.4	Durango	11.5
Nayarit	12.3	Quintana Roo	10.9	Sonora	11.3

Table 8. (*continued*)

2008-2009	
Chihuahua	93.0
Durango	47.1
Guerrero	45.4
Sinaloa	42.1
Baja California	40.9
Sonora	20.2
Michoacán	20.1
Nayarit	18.1
Oaxaca	17.1
Morelos	14.2

Source: INEGI (2011).

Figure 9 shows boxplots like those in Figure 8, but they are based on SNSP data. The first period consists of the distribution of state homicide rates based on two year averages while the rest are based on three year averages. Organizing the x-axis this way provided the best alignment with the INEGI boxplots given the differences in the number of years covered by each time series. From the period 1997-1998 to the period 2005-2007 the SNSP boxplots behave exactly like the INEGI boxplots for the period between 1996-1998 to 2005-2007: all the component measures of the five-number summary decrease. The only exception to this trend, which is also found in the INEGI data, is that the minimum value increases slightly in 2002-2004, moving from one homicide to 1.7 homicides per 100,000 people. The rest of the measures drop systematically without exception, showing that Mexico was becoming less violent over time.

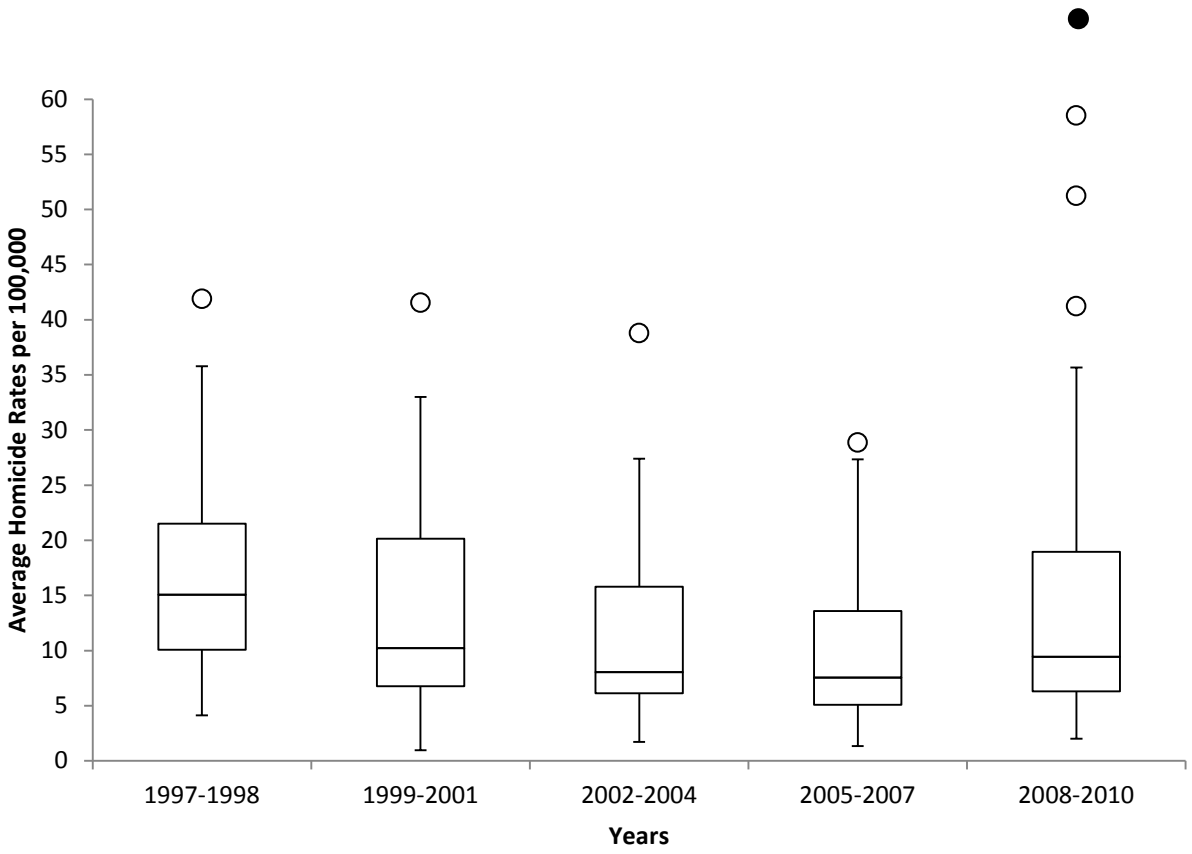

Figure 9. Boxplots Comparing the Distribution of Average Homicide Rates in Mexico's 31 States and the Federal District According to SNSP data, 1997-2010.
Source: Author's calculations based on data from the SNSP (2011) and the CONAPO (2011).

There is one outlier in each of the first four periods included in Figure 9 and four in the last one. In the periods 1997-1998 and 1999-2001 Guerrero is the outlier with 41.9 and 41.5 homicides per 100,000, respectively. In the next two periods Oaxaca is the outlier with homicide rates of 38.8 and 28.9. In the last period, the outliers coincide exactly with those found in the distribution from INEGI data: Chihuahua, Sinaloa, Durango, and Guerrero. The only difference between the two series is that Baja California qualifies as an outlier in the INEGI distribution, but not in the one from the SNSP.

The boxplots in Figures 8 and 9 should not be interpreted as showing that the homicide rates for all states decreased systematically since the early 1990s until 2007. I have looked at the distribution of average homicide rates for different periods, not the specific rates for each state. What the boxplots do demonstrate is that Mexico, as whole, became significantly less violent in the course of the past twenty years. They also show that this trend changed in 2008, but the reversal is carried mostly by a handful of states where homicide rates have soared. In the next section, I briefly look at the data for drug-related homicides, which seem to account for most the upsurge.

Drug-Related Homicides

There is an ongoing debate about the causes behind the recent increase in homicides in Mexico, with many scholars, pundits, and journalists blaming President Felipe Calderon's war against the drug cartels (Escalante Gonzalbo 2011; Guerrero Gutiérrez 2011; Merino 2011). The president has generally defended himself by claiming that a short term increase in violence is inevitable, but that things will return to normal once the key bosses have been captured and their cartels dismantled. I have no intention of making an intervention in this debate here; such a task would require its own study. I do want to show, however, the direction and magnitude of change in drug-related homicides since Calderon took office in 2006, and estimate what percentage of total homicides they account for. Doing so will further my argument that current homicide rates are not the result of a historical trend, but rather a departure from at least fifteen years of decreasing violence. This also further supports my contention that democratization, which began long before 2008, is unrelated to the current upsurge.

Studying this type of homicide poses a set of specific challenges. Shirk and Ríos (2011:4) put it best:

> First and foremost is the problem of definitions. "Drug violence" and "drug related homicide" are not formal categories in Mexican criminal law, and there is some disagreement among scholars and analysts over the appropriate terminology used to describe the phenomenon. Certainly, like many other ill-defined social phenomena, most people recognize drug related violence when they see it. Mass-casualty shoot-outs in the public square, bodies hanging from bridges, decapitated heads placed in front of public buildings, mass grave sites, and birthday party massacres are among the worst examples of such violence.
>
> However, establishing a verifiable connection to drug trafficking activities requires proper police investigation and due process of law, all of which can be very time consuming in the best of circumstances. In Mexico, such investigations are often slowed by the resource limitations of police agencies, particularly at the state and local level. As a result, numerically counting "drug related" murders has thus far been a highly subjective exercise, prone to substantial guesswork even when done by government authorities.

Until recently, the best available sources for drug-related homicides were the counts tallied by three national newspapers in Mexico: *Reforma*, *El Universal*, and *Milenio*. The only other sources were scattered government reports that happened to be made public and were insufficient to systematically assess patterns. In January of 2011, however, the President's office began releasing official numbers compiled by various ministries from the federal executive branch. In addition, the National Human Rights Commission has started to publish data based on its investigations.

Shirk (2010; 2011) and Shirk and Ríos's (2011) reports on the data from these various sources are the most serious efforts so far to map and interpret the patterns they reveal. My analysis here is guided by their work, but serves a far more modest goal. Once again, I have no interest in adjudicating between sources, so I will use data from *Reforma*, which follows the most rigorous criteria of all three newspapers for compiling figures (Shirk 2010:1-3), and the federal government to show that drug-related homicides are on the rise since 2006 and have

increasingly grown as a percentage of total homicides, whether using INEGI or SNSP data as a base.

Figures 10 and 11 show homicide counts and homicide rates, respectively, based on figures from *Reforma* and the federal government. The numbers from *Reforma* run from 2006 to 2010, but the figures from the federal government only cover the period from 2007 to 2010. I exclude 2006 from the federal government's time series because only the figures for December are available for that year.

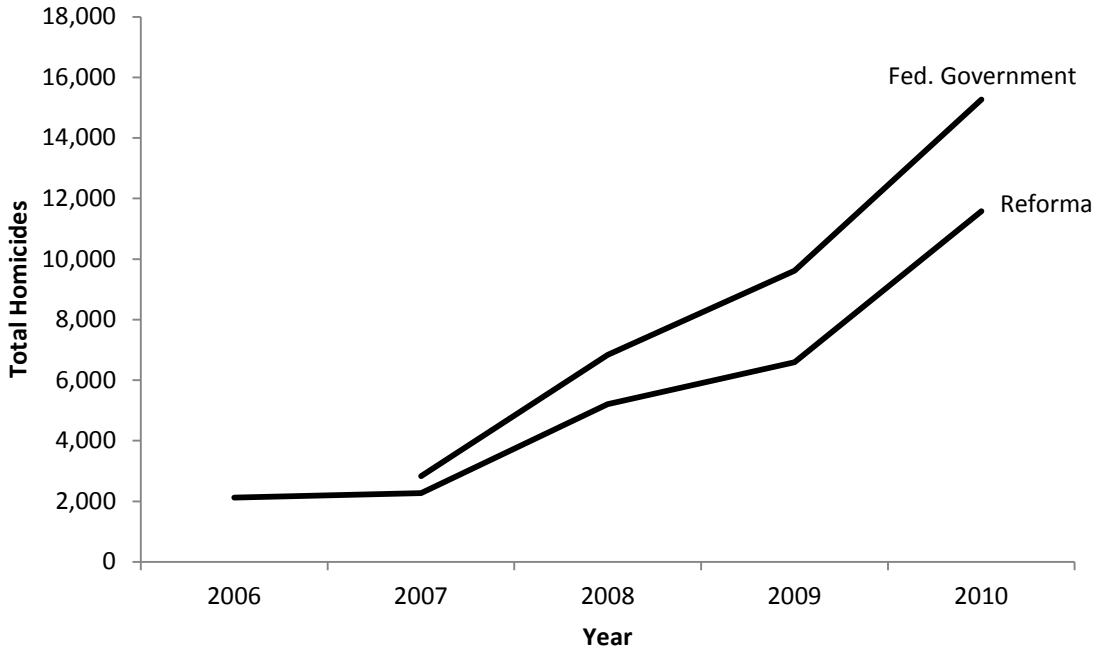

Figure 10. Drug-related Homicide Counts in Mexico According to *Reforma* and the Federal Government, 2006-2010.

Sources: *Reforma* (2011a) and *Presidencia de la República* (2011).
Note: The figure from the federal government for 2006 is excluded because only data for December are available for that year.

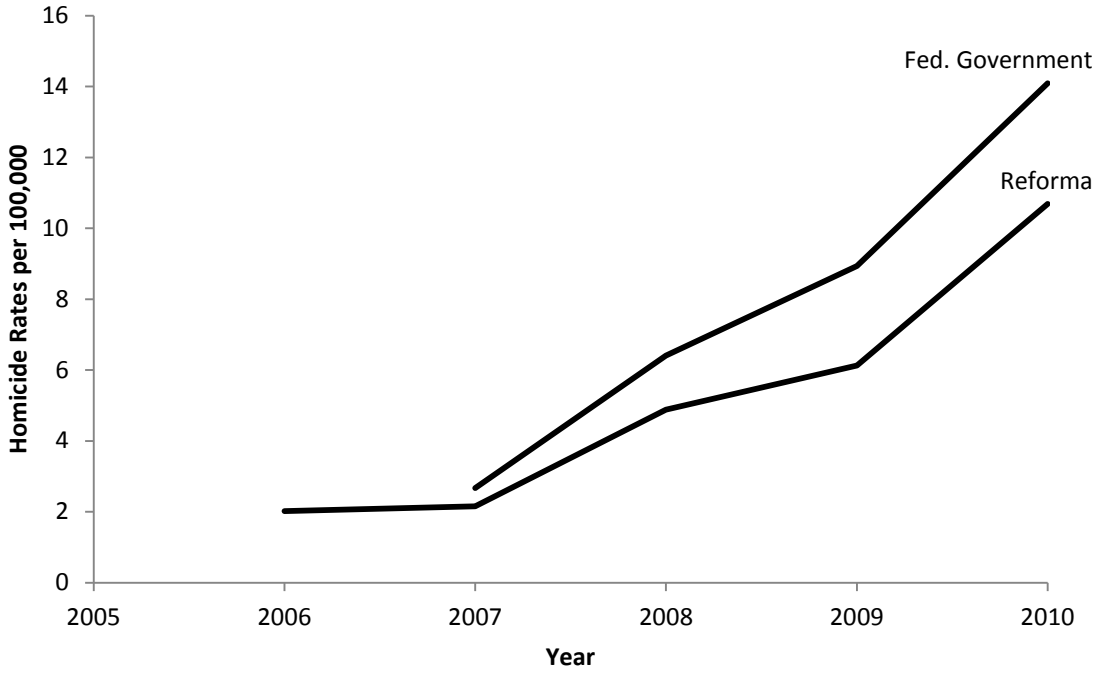

Figure 11. Drug-related Homicide Rates in Mexico According to *Reforma* and the Federal Government, 2006-2010.

Sources: Author's calculations based on data from *Reforma* (2011a), *Presidencia de la República* (2011), and the CONAPO (2011).

Note: The figure from the federal government for 2006 is excluded because only data for December are available for that year.

The general pattern is clear. There is a continuous upward trend in homicide counts and rates during the period covered by these figures. The series from each source differ in magnitude, with the federal government's numbers being higher by 24 to 46 percent, but at no point do they move in opposite directions. Figure 10 shows that according to *Reforma* there were 2,119 drug-related homicides in 2006. By 2010 that number had increased to 11,583. The federal government reports 2,826 homicides in 2007 and an astounding 15,273 in 2010. From 2006 to 2010 drug-related homicide rates increased from 2.2 to 10.7 according to *Reforma* and from 2.7 to 14.1 in the time period covered by federal government figures.

The sharpest increases occur from 2007 to 2008 and from 2009 to 2010 for both sources in both measures. Rates from *Reforma* increased by 127 percent from 2007 to 2008 and by 74 percent from 2009 to 2010. The increases for the corresponding figures from the federal government were 140 and 58 percent, respectively.

As for the percentage of total homicides that these drug-related homicides amount to, Figure 12, which uses INEGI counts to calculate percentages, shows an increasing trend that levels off toward the end in the case of federal government figures and drops in the case of figures for *Reforma*. Figure 13, based on SNSP total counts, shows a consistently increasing proportion of homicides are drug-related homicides, regardless of the source. In both figures, federal government estimates show higher percentages, reaching as much as 76 percent of all homicides in 2010 when using the SNSP total. Regardless of the source used to calculate total homicides, from 2008 onward *Reforma* estimates show that drug-related homicides account for

at least 30 percent of all homicides and federal government estimates show they account for at least 50 percent of all homicides.

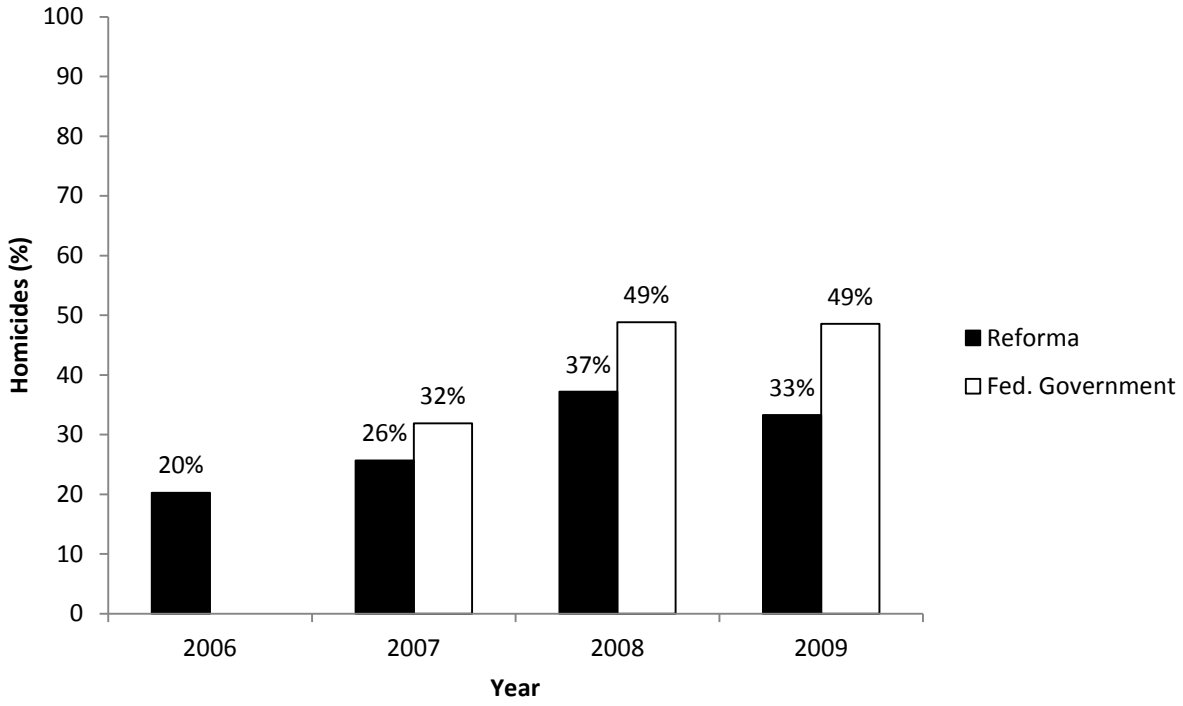

Figure 12. Drug-Related Homicide Counts in Mexico According to *Reforma* and the Federal Government as a Percentage of Total INEGI Homicide Counts, 2006-2009.

Sources: Authors calculations based on data from *Reforma* (2011a), *Presidencia de la República* (2011), and the INEGI (2011).

Note: The figure from the federal government for 2006 is excluded because only data for December are available for that year.

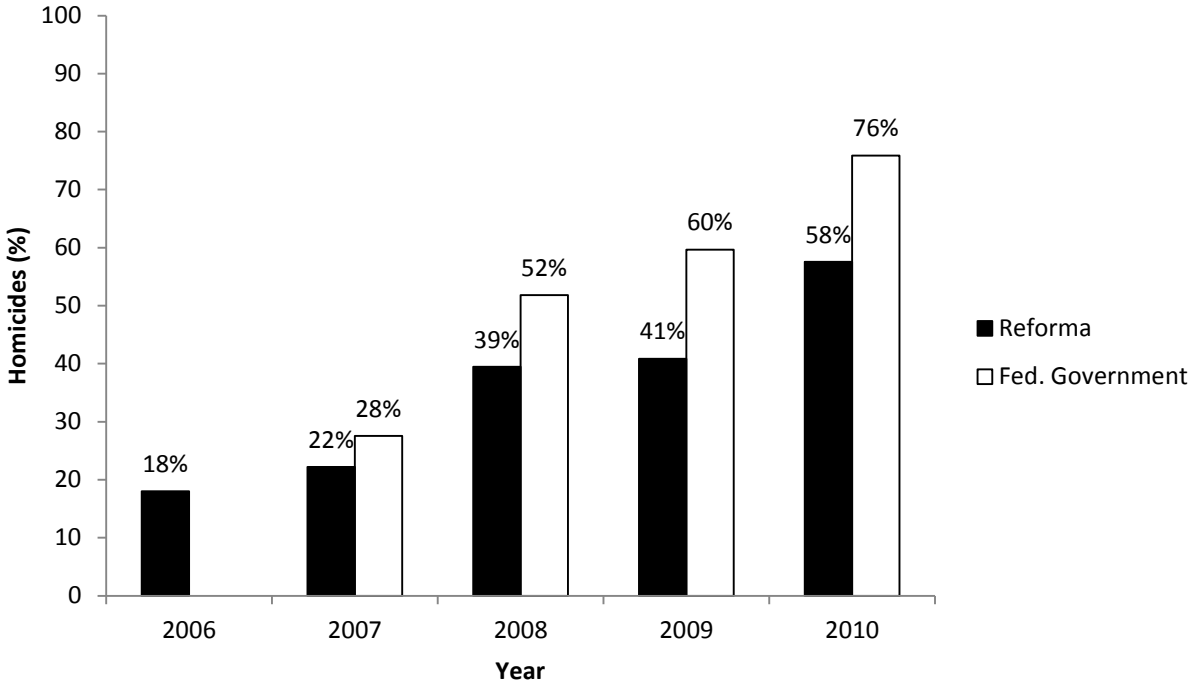

Figure 13. Drug-Related Homicide Counts in Mexico According to *Reforma* and the Federal Government as a Percentage of Total SNSP Homicide Counts, 2006-2010.

Sources: Authors calculations based on data from *Reforma* (2011a), *Presidencia de la República* (2011), and the SNSP (2011).

Note: The figure from the federal government for 2006 is excluded because only data for December are available for that year.

These graphs do not prove that all of the increase in homicide counts and rates since 2006 was the result of the growing number of drug-related homicides; however, they are a strong indication that a considerable part of the upsurge is the result of this specific category. The counts and rates from *Reforma* surge in 2008, just as general homicide counts and rates did. And as a general trend, drug-related homicides increasingly account for a larger percentage of total homicides. The more important implication for my purposes is that this correlation between drug-related homicides and homicides more broadly is indicative of a specific political conjuncture connected in part to government policy, rather than the latest phase of a historical trend. Mexico is more violent today, but this is a recent phenomenon, contrary to the downward trend in homicides that stems back to the early 1990s.

Mexico in International Comparative Perspective

So far, I have compared homicide rates in Mexico over time. To conclude the substantive part of this chapter, I place Mexico's homicide rates in international comparative perspective. How violent is Mexico compared to other countries? I am specifically interested in making comparisons with other Latin American countries that have been frequently taken as a point of reference to assess the situation in Mexico, such as Colombia and Brazil.

Without a clear understanding of how the figures are produced in each country, comparisons such as these have to be made with caution. In this sense, the data I present here are only suggestive. For consistency, I compare from analogous sources in each country. Figure 14 compares homicide rates for Mexico, Colombia, and the United States based on mortality statistics compiled by federal government institutions in each country. Figure 15 compares homicide rates for Mexico, Colombia, Brazil, El Salvador, and the United States based on data from the WHO. Each figure contains the latest available information from each source.

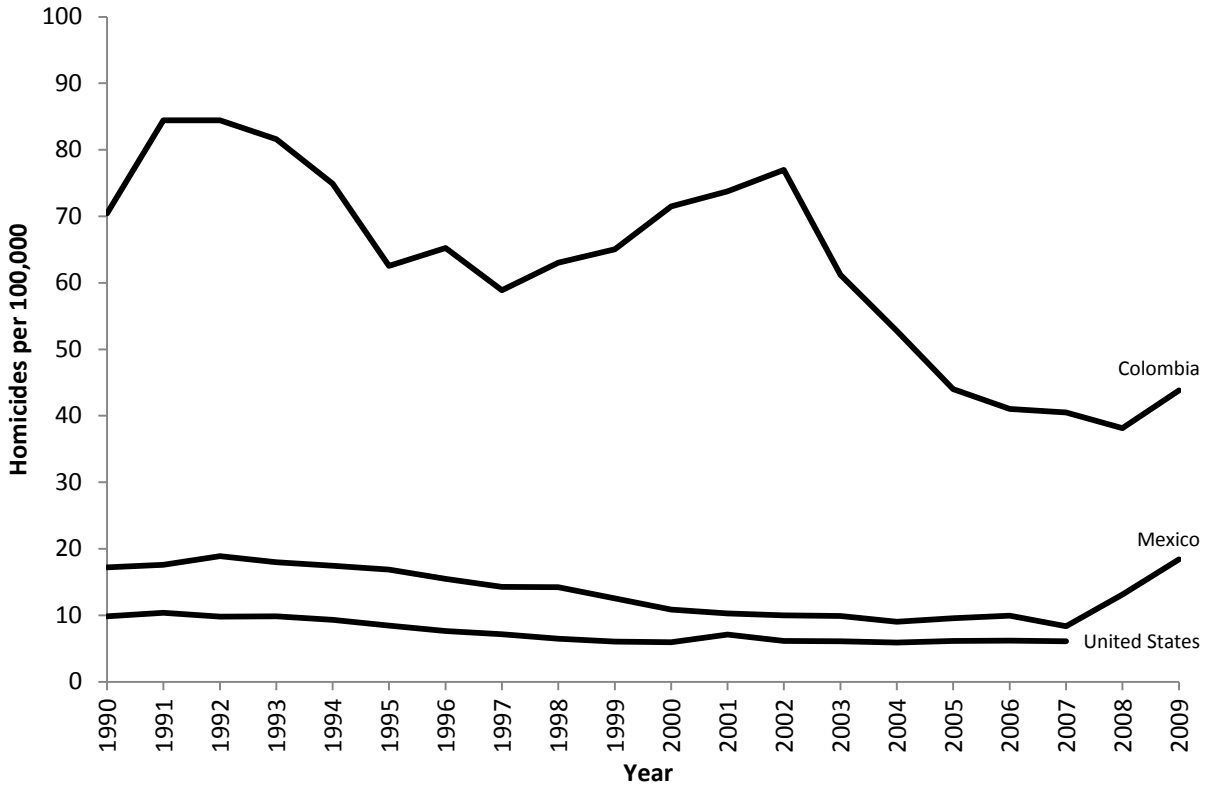

Figure 14. Homicide Rates in Mexico, the United States, and Colombia based on Mortality Data, 1990-2009.

Sources: INEGI (2011) and CONAPO (2011) for Mexico, NCIPC (2011a; 2011b) for the United States, and DANE (2011a; 2011b) for Colombia.

Note: Escalante Gonzalbo (2009:32) presents the same graph in his study of homicide rates in Mexico, but he makes two problematic decisions that I avoid here. First, he compares police data from Colombia and the United States with mortality statistics from Mexico. Second, he tracks the figures back to 1977 without providing sufficient information about the sources to allow the readers access to the data prior to 1990.

What is most striking about Figures 14 is that the trend for Mexico looks more like the trend for the United States, at least until 2007, than the trend for Colombia. Although Mexico is constantly compared to the latter and frequent references have been made in the media to Mexico's "colombianization," homicide rates in Mexico are far from their levels in Colombia, even after the recent upsurge. On average, Colombia's homicide rate from 1990 to 2009 was 381 percent higher than the homicide rate for Mexico. The largest difference between the two

rates is found in 2002, when Colombia's homicide rate was 77 per 100,000 and Mexico's was 10; that is a 671 percent difference. The smallest difference between the two countries was in 2009, two years after Mexico's homicide rate began increasing, when Colombia's rate was 43.8 and Mexico's rate was 18.4, a 138 percent difference. By comparison, Mexico's homicide rate was on average only 77 percent higher than the rate for the United States throughout this period. The largest difference between the two was in 1999, when Mexico's homicide rate was 120 percent higher than the rate for the United States. And the smallest was in 2007, when the rate in Mexico is 38 percent higher.

Figure 15 shows homicide rates for Mexico, Colombia, El Salvador, Brazil, and the United States from 1990-2005 based on data from the WHO. Mexico's homicide rates throughout this period are closer to those of the United States than to the rates of any other country represented in the graph. In addition, Mexico presents the smoothest downward trend of all the Latin American countries in the graph, experiencing increases in only two years—1991 and 1993. In contrast, Brazil's homicide rate increased steadily for a decade starting in 1993. Colombia and El Salvador's trend lines are more unstable, often shifting directions drastically in relatively short periods of time, but they consistently mark homicide rates far higher than Mexico's. Until 2004, Colombia was by far the most violent of these countries, but its homicide rate was surpassed by El Salvador's in 2005. Mexico could be on its way to "colombianization" today, but this is a recent trend that stands in contrast to the overarching trajectory of homicide rates in the past two decades.

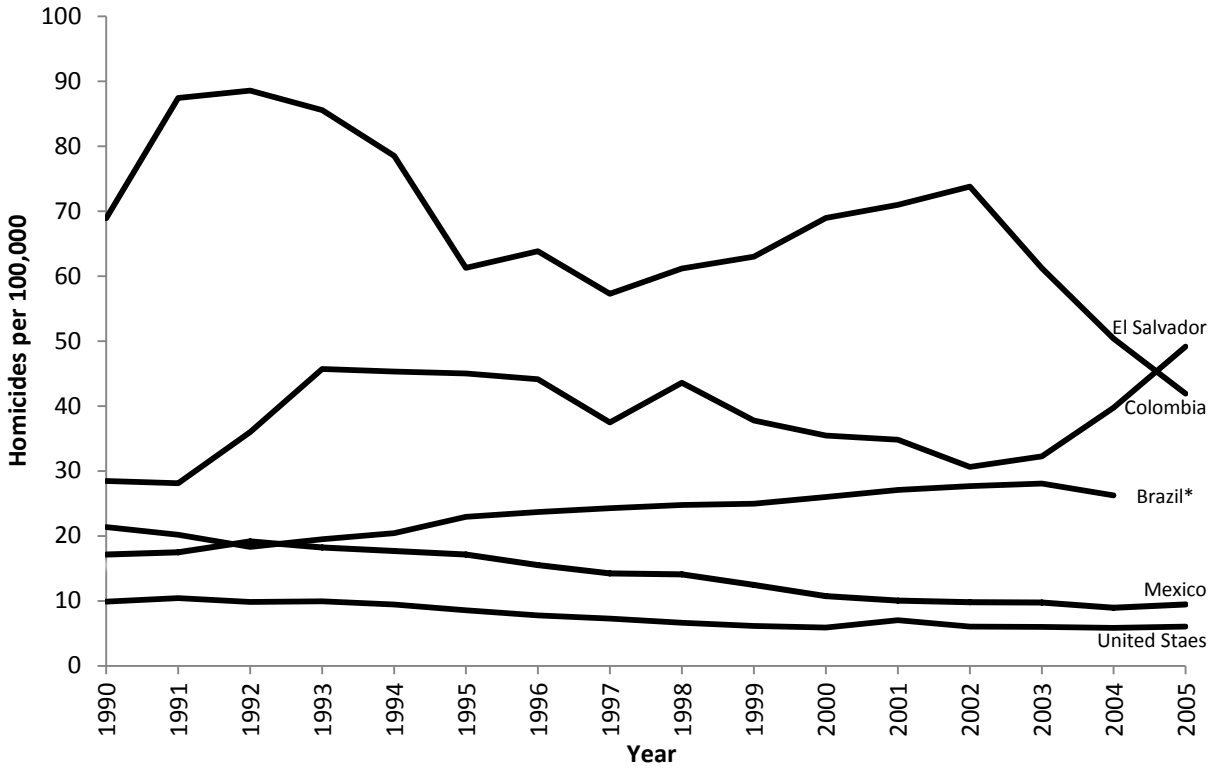

Figure 15. Homicide Rates in Five Countries According to WHO Data, 1990-2005.
Source: WHO (2011a).

Note: The homicide rate for El Salvador for 1994 is missing from the WHO's database. The number in this graph is an average of the rates for 1993 and 1995.
*Data for Brazil are only available up to 2004.

Conclusion

In this chapter I compared homicide rates in Mexico over time, I mapped the distribution of homicide rates across states and tracked its trajectory over the course of two decades, and I compared rates in Mexico with rates in other Latin American countries and the United States. I also showed the trend in drug-related homicides since 2006 and the proportion of total homicides this subtype accounts for throughout this period. The data are sufficiently rich to merit closer studies of fluctuations in specific time periods and geographic units, but the overall picture is clear: despite the media frenzy and scholarly opinion surrounding violence in Mexico, from the early 1990s until today the country, as a whole, became less violent, not more.

The exception to this trend is a handful of states where homicide rates began increasing in 2008. My analysis of the general direction and the changes in magnitude of drug-related homicides suggest that this type of homicide accounts for a considerable part of the upsurge. It also provides further support for the notion that there are specific conjunctural causes behind it, rather than a longstanding inertia.

The data presented in this chapter indicate that homicide rates in Mexico were decreasing just as the country was transitioning from a one-party hegemonic regime controlled by the PRI to a more democratic regime. This body of information should, at least initially, point scholars away from the notion that democratization produced more violence. Media coverage and a history of discourses about violence and disorder in Mexico, however, have done the opposite. Without a careful look at the data, such as I have done here, pseudofacts, Merton (1959:xv) tell us, have a way of inducing pseudoproblems. To be fair, though, the downward trend in homicide rates presented here does not disprove a potential connection between democratization and increasing violence. Perhaps, some might argue, had it not been for Mexico's transition to democracy, homicide rates would have decreased at an even faster pace. I test that hypothesis in the next chapter.

CHAPTER IV: DEMOCRATIZATION AND VIOLENCE?

The finding of facts at odds with prior experience or theoretical expectations imposes its own brand of perplexity. It invites re-examination of the ideas that led to the expectation in the first instance.

Robert K. Merton (1959:xxxi)

In this chapter I test the hypothesis that Mexico's democratization produced more violence by using a series of multiple regression models based on information from five different data sets from two different sources. My models are based on Villarreal's (2002), but I introduce important modifications and a longer and better time series. As a measure of violence I used homicide rates from 1990-2008 based on the INEGI's (2011) mortality statistics. I measured democratization primarily in terms of voting participation and political competition for the 1994, 1997, 2000, 2003, and 2006 elections for members of the House of Representatives (*Cámara de Diputados*).[32] This data came from Mexico's Federal Electoral Institute (*Instituto Federal Electoral*, IFE) (IFE 2010)—the institution in charge of organizing federal elections for positions in the executive and legislative branches of government. I used five control variables commonly associated with homicide rates in the literature on crime. The data for the control variables were drawn from the 1990 and 2000 population censuses, as well as the 1995 and 2005 population counts conducted by the INEGI (2010a). I pooled the information from all these sources into a single data set and each variable was matched with the election years. Linear interpolation was used to match the control variables with the election years. Cases with missing data on any of the variables were excluded.

Dependent Variable

I used the INEGI's mortality statistics to calculate homicide rates because they are available for a longer range of time than figures from the SNSP. Using the latter would have forced me to begin the analysis in 1997—the earliest available data from the SNSP—long after several key benchmarks in the democratization process had passed. As I mentioned in the first footnote, I am exclusively concerned with voluntary manslaughter, so the models are based on data for this type of homicide only.

The data are disaggregated by municipalities. I opted for this unit of analysis despite the problems associated with local level data because it allows me to build a considerably larger sample, thereby reducing other types of problems that would have produced weaker results. I compensate for the potential problems with the data by using two-year averages. I calculated the homicide rate for each case and created two variables; one for the mean homicide rate for the two years prior to an election year and one for the mean homicide rate for the two years after an election. The former was included as a control variable while the latter was used as the dependent variable.

Using three-year averages would have produced an overlap with election years themselves. Using two-year averages meant excluding data for 2009, the latest available from the INEGI. This is not a concern because my interest is in the connection between the democratization process and violence, not democracy in general and violence. In other words,

[32] Using data from federal elections is a crucial deviation from Villarreal (2002) who used data from municipal elections. I explain the reasoning for this decision further below.

my interest is not whether democratic elections at any given point in time decrease homicide rates; rather, I want to know if the transition to electoral competition had an impact on homicide levels. So it was more important to include figures from the 1990s and mid-2000s when electoral competition began to take hold in Mexico rather than from the late 2000s when political democracy was already well established.

Mexico City is not considered a state in the Mexican system of government. As host to the federal branches of government, its legal status is that of Federal District. Instead of municipalities, it is divided into sixteen boroughs (*delegaciones*) that are also included in my sample.

Independent Variables

I use two primary measures of democratization and two secondary measures based on the procedural definition of democracy developed by Schumpeter (1947:269) and Dahl (1971:4-6). First, I use the fraction of votes received in each municipality by the winning party in federal elections for members of the House of Representatives (*Cámara de Diputados*). This measures vote concentration as an indicator of political competition. A higher concentration of votes in the winning party is an indicator of less electoral competition. If, on the contrary, the winning party receives a smaller fraction of votes, then elections are considered to have been more contested, and thus, more democratic.

The second variable I use to measure democratization is voter participation. I calculate the fraction of registered voters who exercised their voting rights at the polls. The higher the fraction, the more participation there was in a given election. This is an important measure for two reasons. First, it allows me to contextualize the distribution of votes received by each party in terms of the total amount of votes. How votes were distributed between parties provides limited information on the degree of competition unless we know how many people voted in total. An election where votes were more evenly distributed among parties yet few people voted is less democratic than one with an analogous distribution but a larger fraction of voter participation.

Measuring participation is important for a second, related but perhaps more relevant reason. Democratization is a complex process consisting in several dimensions. Perhaps some aspects of democratization, such as the amount of parties competing in a given election, do produce a more fragmented institutional setting that leads to more violence. Other aspects of democratization, however, may deter crime. Indeed, the key argument against the notion that democratization breeds more violence posits, instead, that democratization produces more peaceful social interactions. One variant of this argument focuses on the issue of social control. LaFree (1998), for example, claims that political institutions with more legitimacy tend to produce more respect for social norms. And one way in which legitimacy is bestowed on political leaders and institutions is through voter turnout.

Another variant of this argument is that competitive elections with high voter turnout make politicians more beholden to citizen demands. Democratization, in this sense, should make political leaders and institutions more responsive to demands such as effective law enforcement, thus leading to decreases in crime. The implication of these arguments is that higher voter turnout could lead to lower levels of violence, even if it were the case that political competition, as measured by the distribution of votes in a given election, produced effects to the contrary. Thus, the purpose of this second measure is to have a more robust assessment of the different aspects of democratization and their impact on violence.

Given the particularities of Mexico's political history, I have included two more variables related to democratization in my model. One is a dummy variable assessing the impact of PRI victories (1 = PRI wins, 0 = another party wins). The second is an interaction term created to assess the combined effect of PRI victories with vote concentration. The PRI ruled Mexico from the late 1920s until the turn of the century. The argument that democratization leads to more violence is based on the fact that this process disrupts the patronage networks built and sustained by the PRI. For this reason, it is important to isolate the effect of competitive elections from those cases in which competitive elections resulted in PRI victories. Moreover, this same argument predicts a decrease in homicide rates when the PRI wins by a higher proportion of votes. In scenarios such as these, the patronage networks from the old regime are not disrupted, so there should be no indication of increasing violence.

Finally, it is important to note the reason for studying elections for members of the House of Representatives as opposed to other elections, such as presidential or municipal elections. The PRI controlled the presidency from 1929-2000, when the National Action Party (*Partido Acción Nacional*, or PAN) became the first opposition party to take over the executive power. Since then, only one other presidential election has been held, in 2006, and the PAN resulted victorious again. Presidential elections, thus, do not provide as much variation in electoral outcomes as do elections for the House of Representatives. Information on the latter offers more leverage to parse out the different effects of democratization. The problem with elections at the local or state level is that they would force me to exclude the case of Mexico City—as Villarreal (2002) did—or considerably reduce the time period I study. Mexico City did not hold mayoral elections until 1997 and its first elections for borough heads were held in 2000. But Mexico City residents have been voting for their representatives in the House for as long as residents of other states have. And given the PRI regime's rigid hierarchical organization, federal representatives held considerable sway over politicians at lower levels of government. Members of the House played a key role in sustaining the types of networks alluded to by the theories I assess in this analysis and, more importantly, their election can be viewed as an indicator of the regime's stability.

Control Variables

Although there are ongoing debates about the causes of homicide in the literature on crime in the United States, historically scholars have found strong associations with five factors (Land, McCall, and Cohen 1990; Parker, McCall, and Land 1990). I use these five factors, which Villarreal (2002) also used for his analysis of homicide in Mexico, as control variables. I obtained information for each one from the population censuses and counts administered by the INEGI (2010a).

Illiteracy**:** There is an ongoing debate in the literature on crime about the relative impact of poverty and inequality on homicide rates. Following Villarreal (2002:483), I use illiteracy as a measure of general resource deprivation. More concretely, I use the amount of people in each municipality "who cannot read and write a simple message" (INEGI 2010a) as a proportion of the total to control for the effects of poverty on homicide rates. Research shows (Lomnitz 1982:58-59) that in Mexico the extended family functions as a network of support, providing resources throughout the life course. In other words, wealth is shared among relatives. In a social context such as this, illiteracy rates are better suited to measure wealth deprivation than standard measurements of income per capita.

Urbanization: Until recently, research on crime in the United States showed that cities tend to have higher levels of violence than rural communities, although the opposite was true at the beginning of the twentieth century. In Mexico, municipalities encompass several towns. The INEGI (2010a) classifies communities with a population of less than 2,500 as rural and communities with a population of more than 2,500 as urban. I use the proportion of people living in communities with a population over 2,500 as a proxy for urbanization.

Young Males: Age structure is also a standard correlate of homicide rates. A larger population of young males tends to be associated with more homicides. I control for this factor by including a variable that measures the proportion of the population in each municipality composed of males between the ages of 15-34.

Ethnic Diversity: Scholars studying violence in the United States have long been concerned with the impact of ethnic heterogeneity on crime. Most recently, Putnam's (2007) work on ethnic diversity and social capital has argued that in the short term, diversity destroys trust and produces more crime. I control for ethnic diversity in municipalities by including as a covariate the proportion of people five years or older in each municipality who speak an indigenous language.

Law Enforcement: Effective law enforcement is generally considered to be an important deterrent of crime. It is difficult to find reliable information on law enforcement for Mexico. I use two imperfect measures, in models tested separately, to control for law enforcement. One is the ratio of people charged with homicide (INEGI 2010b) to the number of homicides reported by INEGI's (2011) mortality statistics. The second uses the number of people sentenced, not charged, to calculate the ratio.

Two problems regarding these variables need to be highlighted. First, twenty five percent of the cases in each of these variables produced ratios larger than one. This means that in one quarter of the cases prosecutors' offices reported more people sentenced or charged with homicide than there were homicides registered by death certificates compiled by the INEGI. The reasons for these discrepancies are unknown and any number of the factors I discussed in the chapter on the social construction of crime statistics may be relevant. More research is needed to have a deeper understanding of the character and quality of these data. The second problem with these variables is that the denominator used in the ratio to calculate their values is also used to estimate the dependent variable.

Dummy Variables

In addition to the variables described above, I use dummy variables for election years 1997, 2000, 2003, and 2006, with 1994 as the base year, in order to account for within-year variation. I also run a model, the results of which I report but do not show, that uses a dummy variable for each state in order to account for within-state variation.

Methods and Hypotheses

I use a series of multiple regression models to determine the effect of political competition and voting participation on homicide rates net of the effects from the set of covariates listed above.[33] The models are of the following form:

[33] Approximate linearity between the dependent variable and the regressors was confirmed through partial residual plots.

$$(log)y_{it} = \alpha + \beta_1 VCon_{it} + \beta_2 Part_{it} + \beta x_{it} + \varepsilon_{it}$$

where $\boldsymbol{y}$ is the mean homicide rate for the two years after election $\boldsymbol{t}$ in a municipality $\boldsymbol{i}$; $\boldsymbol{\alpha}$ is a constant; $\boldsymbol{\beta_1 VCon_{it}}$ and $\boldsymbol{\beta_2 Part_{it}}$ are the regressors for democratization and their corresponding coefficients; $\boldsymbol{\beta x_{it}}$ are the controls and their corresponding coefficients; and $\boldsymbol{\varepsilon_{it}}$ is an error term.

Hypothesis 1:
If democratization produces higher homicide rates, we should expect the coefficient for vote concentration to be negative and statistically significant. Vote concentration measures political competition by the degree to which votes were concentrated in the winning party at a given election. A higher concentration of votes reflects a less democratic election, and thus, according to the theory I am testing, lower homicide rates should ensue (because more democracy leads to an increase in homicides, whereas less democracy leads to fewer homicides).

Hypothesis 2:
If democratization produces higher homicide rates, the coefficient for political participation should be positive and statistically significant because a higher voter turnout reflects a more democratic election.

Hypothesis 3:
If democratization produces higher homicide rates, the coefficient for PRI victories should be negative and statistically significant. A PRI victory means the patronage networks established during the period of authoritarianism are less likely to be dismantled. Thus, homicide rates should be lower in these cases.

Hypothesis 4:
If democratization produces higher homicide rates, then the interaction between PRI victories and vote concentration should be negative and statistically significant. PRI victories by large margins imply less democratization, and thus, lower homicide rates.

Hypothesis 5:
If poverty contributes to higher homicide rates, then the coefficient for illiteracy should be positive. Higher illiteracy rates should be associated with higher homicide rates.

Hypothesis 6:
Although today urbanization and population density tend to produce higher homicide rates in the United States, this was not the case in the early twentieth century. Villarreal's (2002:487-488) research has shown, however, that higher levels of violence in rural as opposed to urban areas is a phenomenon that has persisted until much recently in Mexico. As a result, I expect the coefficient for urbanization to be negative.

Hypothesis 7:
Again, contrary to the trend in the United States, research has shown that a larger population of young males is not associated with higher crime rates in Mexico (Villarreal 2002). I expect the

coefficient measuring the proportion of young males in each municipality to be negative and perhaps statistically insignificant.

Hypothesis 8:
Ethnic diversity in Mexico has also been shown to have negative or no effects on crime rates, as opposed to the trends in the United States (Villarreal 2002). I expect the coefficient for proportion of indigenous people to be negative and statistically insignificant.

Hypothesis 9:
Finally, consistent with rational choice theories of law enforcement (Becker 1968), I expect the coefficients that measure the ratio of people charged with homicide and sentenced for homicide to the total number of homicides to be negative and statistically significant. In other words, better law enforcement should lead to lower homicide rates.

Results

Table 9 presents the results from four multiple regression models. Contrary to the theory that predicts an increase in homicides as a result of democratization, coefficients for vote concentration are positive and statistically significant in all but the first model. This means that a higher degree of vote concentration in the winning party leads to more, not less, homicides. Political competition is associated with lower homicide rates. At least in terms of this measure, democratization decreases rates of violence.

The coefficients for participation also contradict the theory being tested. They are negative and statistically significant in all four models. The more people vote in an election, the less likely it is that homicides will increase. It could be the case that political leaders and institutions with stronger mandates make it more likely that people will follow social norms and uphold the law, thereby producing less violence. It can also be argued that democratic elections make politicians more responsive to citizen demands, compelling them to fulfill commitments to make communities safer. Adjudicating between these and other explanations requires further research; however, what is clear is that democratization does not produce more violence.

The coefficients for PRI victories and the corresponding interaction term become insignificant when including dummy variables for election years. This means their significance in models 1-3 is likely to be the result of unobserved variables accounted for when electoral years are included. More importantly, the sign and significance of participation and vote concentration—my two primary measures of democratization—do not shift with either of these two covariates.

The dummy variables for election years are all negative and statistically significant, reflecting, in part, the decreasing trend in homicide rates observed since the early 1990s. Consistent with Villarreal's (2002) previous study, the coefficients for urbanization and proportion of indigenous population in municipalities are negative and statistically significant. Contrary to the United States, urban and ethnically diverse communities in Mexico do not present higher levels of violence, bracketing, of course, the case of large metropolitan centers.

The coefficient for age structure or proportion of young males is not statistically significant in any model. This, again, is a trend that stands in contrast to the experience in the United States. The results for illiteracy are initially puzzling. The coefficients are positive and statistically significant in the first three models, which is consistent with the notion that higher levels of marginalization are associated with more violence. However, the coefficient becomes

insignificant when controlling for election years. In a separate analysis not shown here, I ran a model with dummy variables for each state. The results for that model show a positive and statistically significant coefficient for illiteracy, indicating that some unobserved factor accounted for through the dummy variables for election years may have suppressed the effect of illiteracy in model 4. More importantly, the signs and statistical significance of all other coefficients remain the same as in model 4 when accounting for within-state variance.

Table 10 shows the results for models that control for law enforcement. Models 5 and 6 add the ratio of people sentenced for homicide to the total amount of homicides to models 3 and 4 respectively. Models 7 and 8 do the same, but the ratio for law enforcement is calculated based on people charged, not sentenced, with homicide. The key pattern to note is that the sign and significance of my two primary measures of democratization in models 6 and 8 are consistent with the results of model 4. Democratization decreases homicide rates even when controlling for law enforcement. In fact, the results for the rest of the coefficients in models 6 and 8 are also consistent with those in model 4.

Table 9. Unstandardized Coefficients from the Regression of Homicide Rates on Voting Participation and Political Competition, 1994-2006

	Model 1	Model 2	Model 3	Model 4
Vote Concentration	2.180	4.895***	3.546*	3.509*
	(1.365)	(1.452)	(1.601)	(1.702)
Participation	-2.325*	-2.119*	-2.254*	-8.942***
	(0.990)	(0.989)	(0.991)	(1.423)
Illiteracy	6.777**	8.330***	8.370***	4.082
	(2.310)	(2.327)	(2.326)	(2.369)
Urbanization	-1.345*	-1.496*	-1.368*	-1.715**
	(0.617)	(0.617)	(0.620)	(0.618)
Young Males	-6.193	-0.291	-0.0151	-11.78
	(8.261)	(8.335)	(8.335)	(8.491)
Percent Indigenous	-3.314***	-3.528***	-3.681***	-2.603***
	(0.714)	(0.714)	(0.718)	(0.725)
Pre-Election Homicide Rate	0.559***	0.560***	0.561***	0.552***
	(0.00757)	(0.00756)	(0.00757)	(0.00764)
PRI Victory	----	-1.468***	-2.373***	-1.171
		(0.282)	(0.533)	(0.681)
PRI Victory × Vote Concentration	----	----	2.245*	-0.519
			(1.123)	(1.251)
1997	----	----	----	-3.169***
				(0.513)
2000	----	----	----	-4.699***
				(0.473)
2003	----	----	----	-4.969***
				(0.650)
2006	----	----	----	-2.493***
				(0.639)
Constant	5.458***	3.736*	4.135**	14.08***
	(1.495)	(1.525)	(1.537)	(2.130)
N	7242	7241	7241	7241
F	884.5	780.7	694.7	497.3
R^2	0.461	0.463	0.464	0.472

Standard errors in parentheses

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Note: Base year for year dummy variables is 1994.

Table 10. Unstandardized Coefficients from the Regression of Homicide Rates on Voting Participation and Political Competition, Controlling for Law Enforcement, 1994-2006

	Model 5	Model 6	Model 7	Model 8
Vote Concentration	4.173*	4.061*	4.304**	4.133*
	(1.657)	(1.768)	(1.654)	(1.765)
Participation	-1.057	-7.449***	-0.765	-6.937***
	(1.019)	(1.468)	(1.019)	(1.468)
Illiteracy	6.237**	2.043	6.549**	2.432
	(2.405)	(2.448)	(2.398)	(2.442)
Urbanization	-1.993**	-2.336***	-1.909**	-2.238***
	(0.651)	(0.649)	(0.648)	(0.646)
Young Males	4.729	-7.925	2.437	-10.32
	(8.567)	(8.715)	(8.547)	(8.698)
Percent Indigenous	-2.660***	-1.636*	-2.704***	-1.697*
	(0.755)	(0.761)	(0.754)	(0.759)
Pre-Election Homicide Rate	0.534***	0.526***	0.530***	0.522***
	(0.00790)	(0.00796)	(0.00795)	(0.00800)
PRI Victory	-2.259***	-1.082	-2.298***	-1.178
	(0.546)	(0.700)	(0.544)	(0.699)
PRI Victory × Vote Concentration	2.031	-0.716	2.064	-0.577
	(1.151)	(1.287)	(1.149)	(1.285)
Sentenced Homicide	-2.178***	-2.147***	----	----
	(0.182)	(0.181)		
Charged Homicide	----	----	-2.159***	-2.116***
			(0.170)	(0.169)
1997	----	-3.004***	----	-2.916***
		(0.528)		(0.528)
2000	----	-4.835***	----	-4.790***
		(0.487)		(0.486)
2003	----	-4.858***	----	-4.730***
		(0.670)		(0.669)
2006	----	-2.520***	----	-2.502***
		(0.660)		(0.659)
Constant	5.311***	15.20***	5.616***	15.33***
	(1.580)	(2.197)	(1.579)	(2.195)
N	6973	6973	6977	6977
F	607.2	448.8	611.1	451.3
R^2	0.466	0.475	0.467	0.476

Standard errors in parentheses
Note: Base year for year dummy variables is 1994.
* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Conclusion

The results from the multiple regression analyses indicate that democratization as measured by political competition and voting participation has led to lower, not higher, levels of violence in Mexico. Stronger voter turnout and a more balanced distribution of votes lead to decreases in homicide rates. These findings, as well as the descriptive statistics presented in the previous chapter, suggest that perhaps Mexico has not been the lawless, violent country media outlets, pundits, and some scholars have suggested.

CHAPTER V: TOWARD A NEW RESEARCH AGENDA

Inconsistencies set the stage for instituting new problems.
Robert K. Merton (1959:xxxii)

I began this thesis with Merton's reflections on the differences between formulating questions in everyday life and formulating them in the social sciences. His intention was to emphasize the difficulty of designing interesting research questions and the often neglected role figuring out the "facts" plays in this process. Indeed, he draws attention to the challenge the latter entails as a research and analytical problem in its own right, a lesson missed by the recent literature on violence and democracy in Mexico.

Villarreal (2002), Davis (2006), and more indirectly Velasco (2005) have contributed to our understanding of the local-level processes through which the PRI-regime was dismantled in many parts of the country as a result of democratization. In addition, their analyses—especially Velasco (2005) and Davis's (2006)—help us untangle how electoral politics can produce the stalemate often witnessed in Mexico among politicians from contending political parties who cannot agree on policy reforms or their enactment and the devastating consequences this can have for police reform and other issues related to crime and violence (Velasco 2005; Davis 2006). But when they try to make a direct connection between democratization and violence, their arguments fail to take heed of Merton's warnings.

In the course of this thesis, I have sought to make four contributions to the literature on democracy and violence in Mexico. First, I mapped how the argument that democratization can lead to violence emerges out of a dialogue between the theoretical legacy in sociology about the disruptive nature of social change and recent work on the quality of newly established democratic regimes. Furthermore, I critically assessed the literature that makes this case for Mexico, showing that it fails to support the claim empirically. Second, by explaining how crime statistics are produced, I traced the contours of a pending research agenda regarding the quality of homicide statistics for Mexico. Using what we know about the quality of data for the United States as a point of comparison, the scant research conducted on this issue for Mexico, and newspaper, government and NGO reports, I demonstrated there are serious reasons to be skeptical about the available data and much work is yet to be done in order to understand the substantive and technical magnitude of its deficiencies. Third, I presented descriptive statistics showing that regardless of the data source used, and contrary to popular, media, and scholarly perceptions, homicide rates in Mexico decreased since the early 1990s until 2008, when they began increasing at a dramatic pace. I also showed how the recent upsurge in homicide rates coincides with a dramatic increase in drug-related homicides, further indicating that current levels of violence reflect a post-2006 conjuncture rather than a longstanding trend. The decreasing trend over time, of course, does not disprove the argument that democratization contributed to an increase in violence in Mexico because one could argue that had it not been for the transition process, homicide rates would have fallen more and at a faster pace. Thus, I build on the model used by Villarreal (2002) to show that democratization led to a decrease, not an increase, in homicide rates in Mexico.

The data and findings from this analysis are empirically and theoretically consequential. In terms of the recent upswing in homicide rates, my findings suggest that it is mistaken to view this phenomenon as the latest manifestation of a historical trend. On the contrary, it suggests that

the explanation for Mexico's current predicament is found in changes that have taken place during President Calderon's administration.

More importantly, the drop in homicide rates over the past twenty years is puzzling in itself. During that time period, Mexico suffered several political and economic crises, making it reasonable to have expected the opposite trend. It is not, of course, that violence has been absent in Mexico. But such a stark trend in one of the most troubling forms of violence does point us in a direction contrary to traditional narratives about Mexico. Furthermore, research has emerged showing that homicides have been decreasing in Mexico for far longer than the period I study here. Indeed, Piccato (2007:66) claims this trend began in the 1920s. This places serious doubts on narratives that present Mexico as a violent, unruly country where social ties are weak and disintegration the norm (Villarreal 2002; Velasco 2005). It also raises theoretical questions about the sources of this trend and the notion of change without disruption.

The significance of these findings notwithstanding, my study does have several limitations that suggest paths for further research as well. There are at least two different avenues for expanding the research I have presented here.

First, substantively, there are other forms of violence and ways of measuring democratization that need to be accounted for. Homicides are an effective and straightforward measure of violence, but trends in this regard cannot be taken to stand for trends regarding other crimes such as kidnappings, muggings, or theft. For example, reports from non-profit organizations, media outlets, and government agencies suggest that kidnappings, especially in urban centers, have increased in the last few years in Mexico (IKV Pax Christi 2008:6-10, 18-20). Likewise, other measures of democracy need to be considered, such as the strength of civil society or the degree to which elections are fair and transparent. A more thorough study would analyze different dimensions of democracy and their impact on different forms of violence, assessing the relationships in each case as well as the overall balance between them.

The use of additional control variables is also an important substantive consideration. As I mentioned at the beginning of this study, the literature on crime in the United States heavily influences research on crime in other countries. But, as I and others have shown, some factors that are considered to be causes of crime in the United States do not have the same effect in Mexico. More research is needed to understand the historical and cultural particularities of homicide patterns in Mexico in order to choose more reliable control variables.

Second, from a technical standpoint, this statistical analysis could be improved in several directions. First, dummy variables controlling for regional variations are needed. The analysis I conducted controlling for variance within states—the results of which I mentioned, but did not present—show strong correlations between homicide rates and four regions in the country: the north-west, north-central, south-central, and the Valley of Mexico. It is important to distinguish these patterns from those in the rest of the country. Finally, some of the variables I used could be operationalized differently. For example, dummy variables distinguishing rural from urban communities may be more useful than a single continuous variable measuring urbanization.

Questions for further research.

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