



Persuasive Science, Misleading Violence. Epidemiological Views on Homicides in Cali, Colombia

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Abstract

Rodrigo Guerrero, the current mayor of Cali (Colombia), is internationally renowned for his epidemiology-based approach to urban violence. While the use of this approach has made salient certain 'risk factors' associated to homicides (alcohol and firearms), it has produced ignorance about others that are at least as important as the former to understand why and under which conditions numerous murders have occurred and keep occurring in Cali. Violence epidemiology has excluded organized crime and other structural causes from Guerrero's equation, leaving unrecognized crucial aspects of the historical and cultural background of violence in Cali. Guerrero's employment of the technoscientific discourse has served this kind of purpose, as it tends to go unquestioned by public opinion due to the privileged epistemic position science has. Although the policies implemented by Guerrero's administration have contributed to decrease the number of homicides in one of the most violent cities in the world, the assumption that epidemiology is *the* methodology to understand and design strategies to counteract the phenomenon of violence in Cali has had unfortunate consequences.

Keywords

Violence, security policy, epidemiology, databases, scientific discourse.

Ciencia Persuasiva, Violencia Engañosa. Visiones Epidemiológicas sobre los Homicidios en Cali, Colombia

Resumen

Rodrigo Guerrero, actual alcalde de Cali (Colombia), es reconocido internacionalmente por su aproximación epidemiológica a la problemática de la violencia urbana. A través de este enfoque, ciertos 'factores de riesgo' asociados a homicidios han sobresalido (el consumo de alcohol y el porte de armas de fuego), produciendo ignorancia sobre otros aspectos que son, por lo menos, tan importantes como los primeros para entender por qué y bajo qué condiciones se han presentado y se siguen presentando numerosos asesinatos en la ciudad. La epidemiología de la violencia ha excluido el crimen organizado y otras causas estructurales de la ecuación de Guerrero, dejando sin reconocer ciertos antecedentes históricos y culturales de Cali que son vitales para entender su violencia. El uso que Guerrero ha hecho del discurso tecnocientífico ha servido a este tipo de propósito, pues tiende a pasar sin ser cuestionado por la opinión pública debido a la posición epistémica privilegiada de la que goza la ciencia. Aunque las políticas implementadas por la administración de Guerrero han contribuido a disminuir el número de homicidios en una de las ciudades más violentas del mundo, el supuesto de que la epidemiología es *la* metodología para entender y diseñar estrategias que contrarresten el fenómeno de la violencia en Cali ha tenido, sin embargo, consecuencias infortunadas.

Palabras clave

Violencia, política de seguridad, epidemiología, bases de datos, discurso científico.

Introduction

In early October 2014, Colombian media featured two paradoxical news items about Cali, the third largest city in the country with a population of roughly two million people. While the mayor of the city, Rodrigo Guerrero, was in New York City receiving the Roux Prize “for using data to address violence as a public health crisis” (Institute for Health Metrics and Evaluation, 2014a), 39 people were being murdered in Cali in the span of a week (Posada Rivera, 2014). The news also reported that, after visiting New York City, Cali’s mayor continued his journey to the World Health Organization in Geneva to share his award-winning epidemiology-based approach on violence, which has been applied in many cities in Latin America (Caliescribe, 2014).

Guerrero, who was trained as a medical doctor at the Universidad del Valle¹ and specialized in epidemiology at Harvard, has been twice elected mayor of Cali (1992-1994 and 2012-2015). During Guerrero’s first mayoral service, Cali was experiencing the heyday of the Cali drug cartel, especially in 1993, after Medellin cartel’s head –Pablo Escobar– was murdered, and Cali drug traffickers came to dominate the global drug trade. Between 1983 and 1992, homicide had become the first cause of death in Cali, increasing from 23 to 93 cases per 100,000 people (Sanchez et al., 2011). Although public opinion regarded drug cartels as responsible for most homicides and terrorist attacks taking place in urban centers, Guerrero questioned the direct relationship established between drug traffickers and high violence rates².

At the outset of his first period as mayor, Guerrero formed a multi-institutional group called DESEPAZ (Development, Security and Peace Program), involving epidemiology scholars from Universidad del Valle and public officials from the District Attorney’s Office, the Police, the Municipal Department of Public Health, the Institute of Forensic Medicine, and the Office of Human Rights, in order to systematically collect and unify data on the number and nature of homicides in the city (Concha-Eastman, Espitia, Espinosa, & Guerrero, 2002). According to a document that Guerrero produced for the World Bank, “data produced by DESEPAZ in Cali, like data from Bogota, suggest that violence, as it presents in the capital cities of Colombia,

¹ Universidad del Valle is the largest and most important public university of Cali, and the major public university of Colombia’s Southwestern region.

² Violence is a vast category and there are multiple conceptualizations of the term. An article coauthored by Guerrero says that “[f]or public health purposes **violence can be defined as the use (or the threat of use) of physical force with the intent to cause harm to oneself or to others**” (Guerrero and Concha-Eastman, 2001: 2, boldface as in the original). In this paper, in the cited literature by the Institute for Health Metrics and Evaluation, and in the cited works developed by Guerrero and his colleagues, violence refers specifically to homicides.

responds to a pattern of social disorganization rather than to violence resulting from rival drug gangs³ (Guerrero, 2003, p. 22). The results that Guerrero and his working team draw from their epidemiological analysis led them to introduce two major policies to address the high number of homicides occurring in Cali in the 1990s –restrictions on firearms, and alcohol sale and consumption.

The stark contrast offered by the Colombian media in October 2014, celebrating, on the one hand, the prize that Cali's mayor received for combating violence with epidemiological methods and, on the other hand, condemning the spate of homicides that were taking place in Cali, led me to wonder what it means to say that violence is an epidemiological phenomenon. What becomes visible and invisible when homicides are approached in this way? What consequences does this entail for the process of decision-making? While I attempt to answer and reflect around these questions in the first part of this paper, in the second part I provide an analysis of the scientific papers written by Guerrero and his epidemiology colleagues, and contrast them with declarations given by Guerrero to the media. Based on this analysis, I reflect on the role of scientific discourses in the legitimization of political decisions and the persuasive authority statements acquire when they are coated and armored through scientific accounts.

Homicide as an epidemiological phenomenon

Developing an understanding of violence as a public health issue started gaining traction in the United States in the 1970s, obtained financial and institutional support at the Centers for Disease Control and Prevention (CDC) in the 1980s, and reached worldwide attention through the World Health Organization in the 1990s and 2000s (Dahlberg & Mercy, 2009). Influenced by this emerging application of public health principles, Guerrero started thinking about violence in epidemiological terms and introduced this approach when he became mayor of Cali for the first time, between 1992 and 1994 (Guerrero & Concha-Eastman, 2001, p. 1). Since then, he has made several efforts to defend the idea that epidemiology-based public health methods can provide decision makers the evidence needed to implement scientifically-informed interventions to effectively prevent violence (Concha-Eastman & Guerrero, 1999; Guerrero, 2002, 2003; Guerrero & Concha-Eastman, 2001).

³ Unless otherwise indicated, all translations from Spanish are my own.

Through the lenses of epidemiology, violence is seen as any other 'disease', manifesting in different forms and associated to specific *risk factors*, that is, factors whose presence increase the probability of violence occurrence (Guerrero, 2003, p. 4). Importantly for Guerrero, "[t]he public health approach avoids the theoretical discussion on the causes of violence and focuses on controlling its risk factors" (Guerrero & Concha-Eastman, 2001, p. 9). Once they are identified, interventions can be designed and implemented in order to control them and prevent violence (Guerrero, 2003, p. 4). David Meddings (2001), another violence epidemiologist like Guerrero, states that employing a broader understanding of the term 'epidemic' to encompass complex social phenomena such as violence, is coherent and possible within the main concern of epidemiology –examining the association between an exposure and an outcome, and inferring something about the nature of that association. This means that the epidemiological study of violence is based on the assumption that, although violence is a highly complex, multifactorial, and local phenomenon, there are certain risk factors that escape the randomness and heterogeneity of social relations, and occur frequently enough to be seen as epidemiological patterns. Consequently, according to the epidemiological approach, once those patterns are identified, the exposure to risk factors that positively correlate with violence needs to be minimized, while other psychological, sociological or anthropological explanations of crime are discarded (Nieto, 2012, pp. 149–150).

A video produced by Institute for Health Metrics and Evaluation (IHME) –the organization that awards the Roux prize– to celebrate the 2014 Roux prize winner closes with a scene where Rodrigo Guerrero paraphrases Galileo by saying: "Measure anything you can, and whatever you cannot, make it measurable" (Institute for Health Metrics and Evaluation, 2014b). This seems to imply that, when observations are transformed into numbers, they automatically acquire a status that is better or desirable to explain a phenomenon, capable of achieving things that a non-quantified status would fail to attain. For David Meddings, numbers are the only ones capable of opening the gate to the world of objectivity, and the challenge of epidemiologists lies in building rational definitions that make it possible to translate qualitative variables into quantitative ones (Meddings, 2001). But what does it mean to make measurable what is not? And what happens to those aspects that resist measurability?

MAKING MEASURABLE WHAT IS NOT: CREATING RISK GROUPS AND JUSTIFYING RESTRICTIVE MEASURES

During the first mayoral service of Guerrero, he and his co-workers succeeded in creating a unified system of data collection that involved all the official institutions receiving information about murders in Cali. This multi-institutional team agreed on the variables that made part of the database, which included information about the victim's age, sex, address, socio-economic stratum⁴, degree of alcohol intoxication, and belonging to a special risk group. If it was known that the murderer made part of gangs or state forces, this information was also collected. Data about date, time, neighborhood, type of gun used, and the alleged reason of the murder were also included in the database (Concha-Eastman et al., 2002). Once collected and analyzed, these data showed that firearms were involved in 80,9% of the homicides that took place in Cali between 1993 and 1998, and that alcohol intoxication of the victim was found in 17,9% of the cases (Concha-Eastman et al., 2002).

While Guerrero claimed that the evidence produced by analyzing these data pointed at alcohol and firearms as major risk factors leading to homicide, database design and the process of data analysis and interpretation constrained the range of possible conclusions and decisions that originated from that process. In other words, if more –or other– variables would have been included in the database, or taken into account in the epidemiological analysis, other kind of policies and measures would have been implemented.

For instance, one of the categories used by DESEPAZ to build the database was the victim's "belonging to a special risk group" (Concha-Eastman et al., 2002, p. 231). Instead of gathering information that would help researchers to see if there was a group of people that was particularly vulnerable to acts of violence and needed special protection from the state (for example, building categories such as victim's occupation), Guerrero's working team predefined who were included in those 'risk groups'. Since they do not provide any kind of justification for the definition of these subcategories, one can only assume that they are based on their own judgments and values regarding what they considered relevant to look at. As a result, the 'special risk group' category was subdivided in the following subcategories: beggar, garbage collector, street sex worker, street transvestite, construction worker, and security guard (Concha-Eastman et al., 2002, p. 231).

⁴ In Colombia, households are classified into six strata and utilities are charged differentially according to this classification. Strata 1, 2, and 3 are subsidized by strata 5 and 6. The stratum 4 is the only one that pays the 'real' cost of the water, electricity, gas and telephone public services. For a critical analysis of this classification, see Acevedo (2014) and Wallace (2014a).

As Pine and Liboiron (2015, p. 3) wrote, “the practice of measurement also encapsulates moral judgments” and, “as a moral act, embodies a particular set of values and principles of conduct”. ‘Qualculation’ is a term that STS scholars have employed to describe the qualitative judgment involved in quantitative measurements, and it is useful here to think about the discriminatory attitudes that run along the databases that were created in Cali to understand homicides from a scientific perspective⁵. The subcategories used within the ‘special risk group’ category are charged with prejudices that, once they become part of a database, tend to pass unnoticed, unquestioned and accepted as a legitimate description of the type of ‘risky populations’ that are in need of control. By ‘qualculating’ in the way Guerrero and his working team did, data become a means to normalize discrimination, as if they were saying that it is ‘ok’ that street sex workers or garbage collectors were murdered, or by generalizing the idea that they are to be associated with violence. Then, it is not surprising that, although Guerrero and his colleagues found that construction workers were the most common homicide victims within the risk groups they predefined (Concha-Eastman et al., 2002, p. 235), no policy or program was introduced to provide them with special state protection or security measures.

Geoffrey Bowker’s work argues precisely that putting data together in the form of databases involves not only technical decisions but also political and ethical ones (Bowker, 2000). In this way, database designers are shaping the future possibilities that result from data analysis and interpretation processes, which, in Cali’s case, have determined the shape of major policies aiming to regulate the behavior of citizens.

The measures Guerrero implemented in the 1990s were twofold. First, he enacted the *ley semi-seca* (semi-dry law), making bars and discotheques that would normally be open throughout the night, to close at 1am on weekdays, and 2am on Fridays and Saturdays. Secondly, Guerrero forbade carrying firearms during weekends that coincided with payroll payment day, and on special dates like Mothers’ Day, Halloween, Christmas and New Year’s eve (Guerrero & Concha-Eastman, 2001).

Although adapted to our times, these policies resemble strikingly the strict measures established by contagionists in nineteenth century Europe, who defended the idea that diseases such as cholera could be spread from one person to another. In Richard Evans’ account about the cholera epidemic in Hamburg in 1892, he argues that while contagionists supported a strong state intervention through measures such as quarantine, disinfection, and *cordons sanitaires*, in the view of the ruling anticontagionists who held political power in Hamburg at the time, interventionist measures defended by contagionists could negatively impact trade, were unnecessary and too costly. In the end, interests in trade and a well-established republican

⁵ For a revision of the term see Pine and Liboiron (2015, p. 3).

tradition influenced the decision of Hamburg's oligarchy to support the anticontagionist movement, according to which cholera bacilli could not be spread in water, and conditions such as fresh air and proper hygiene were enough to combat the outbreak (Evans, 2005).

As the contagionist movement, which was closely related to political ideas that supported a greater power of the state to limit civil liberties (Evans, 2005), disciplinary measures implemented in Cali also reflect the ideological tradition of Guerrero. He belongs to the conservative party in Colombia, whose members' ideology is "close to a strong sense of authority, to strict compliance with rules and obligations, to religion, to order, to the observance of universal moral precepts, stability and tradition", and believes that "law is indispensable if we want to maintain order" (Partido Conservador, 2015). In other words, according to the conservative tradition, people need to be constrained by law in order to behave well.

THE UNMEASURABLE: IGNORING ILLEGAL STRUCTURES AND DRUG CARTELS

A last instance that needs to be highlighted in order to understand what epidemiology has made of Cali's violence, require us to retrieve the concept of 'agnotology', coined by Robert Proctor and Londa Schiebinger (2008). Agnotology refers to the cultural production of ignorance or doubt, particularly related to scientific accounts that perpetuate uncertainty and misleading information in benefit of someone's interests. Among others, this conceptualization has helped scholars from science and technology studies (STS) to further challenge the idea of the superior morality of science for being a naturally open activity –as opposed to secrecy– whose purpose is revealing the truth. The use of an epidemiological approach on violence in Cali has aimed to make salient certain aspects of homicides –their relationship to alcohol and guns– while producing ignorance or doubt about others that are at least as important as the former to understand why and under which conditions people have been murdered in the past, and continue being murdered today. The use of a technoscientific discourse serves this kind of purposes, as it tends to go unquestioned because of the privileged epistemic position science has.

In this regard, and perhaps convinced of the objective character of its measurements, Guerrero has sustained in the media that the epidemiological approach he and his co-workers devised at DESEPAZ led them to conclude that drug traffickers were not the major perpetrators of murders in Cali. "We saw that most of the homicides occurred in the weekends. That seemed odd because we started from the assumption that violence was linked to drug trafficking, and

found unlikely that cartels would wait until the weekend to kill people”, said Guerrero. “Contrary to the generalized idea people had, the epidemiological study revealed that most of the violence in Cali in the early 1990s was not due to the drug business, but had to do with alcohol and possession of firearms”, the article continued (EFE, 2014).

Guerrero dismissed drug traffickers as a major factor explaining homicides occurring in the 1990s in Cali, even though obtaining reliable data about the identity and motivation of the murderers was for the most part unavailable or incomplete. As he and his colleagues wrote in a scientific publication, this information was almost impossible to obtain, making it difficult to define who were –or were not– the perpetrators involved in the homicides:

It is alarming . . . that there is no sufficient information about some variables in order to draw conclusions, particularly data regarding the identity of the perpetrator and the motivation behind the act . . . the causes of these crimes [in Cali] could not be determined especially due to the prevailing impunity. It is estimated that only 10% or less of murders in Colombia are punished. In Cali, the situation is similar, as some studies estimate that only in 3-7% of homicides end up with a person being convicted (Concha-Eastman et al., 2002, p. 236).

Deborah Neill provides a significant argument to understand Guerrero’s move as part of the production of ignorance alluded here. She shows how the nineteenth century triumph of tropical medicine laboratory science focuses on bacteria, parasites and treatments, and leaves out environmental explanations of diseases that acknowledge geographical factors, social structures and social relations. According to her, “[I]aboratories brought researchers inside, limiting the questions they might have asked about the larger environment” (Neill, 2012, p. 16). In a similar way, the epidemiological approach on violence that Guerrero developed reduces the problem of violence in Cali to ‘what is measurable’, to those factors that fit whatever instruments are available in the ‘laboratory of epidemiology’. Even though the scientific evidence was unable to falsify –borrowing Popperian terminology– the involvement of drug traffickers in the homicides taking place in Cali, Guerrero asserted that this was the case, and made everybody doubt about something so blatantly evident in many of the murders.

As Neill underscores, quoting Andrew Cunningham, “the laboratory is an instrument but it is also more than that: it is ‘a practice which defines, limits and govern ways of thinking and seeing’” (Neill, 2012, p. 16). What is seen and what becomes invisible depends heavily on the group of data that could be collected, analyzed and translated into a set of interventions to be implemented. Epidemiology is not a simple methodological or scientific instrument; it is a

practice of government, one that has subdued the social complexity of violence in Colombia to the numerical language, supported by the persuasive frame of science, while limiting the ways of thinking and seeing the problem, and reducing it to an issue of alcohol and firearms. As Pine and Liboiron wrote, “[m]easurements are not just political in the sense that they are used in governance; they are also political in that they exercise covert political power by bringing certain things into spreadsheets, and thus into management and policy, while leaving other things out” (2015, p. 3). The consequences of excluding organized crime from Guerrero’s epidemiological equation, as argued by Boris Salazar, Professor of Economics at Universidad del Valle, are not limited to security policies, but also to the historical and cultural understandings of violence in Cali:

As if they belong to another ghost town where the light of science fails to illuminate, interactions between violent, illegal, legal and armed actors have been wiped out, depriving the city of a realistic explanation of the terrible violence that has never stopped to impact Cali . . . And by neglecting organized crime and its relationship to violence, politics and the state, much of the history of the last forty years of the city is also going unrecognized (Salazar, 2014).

The persuasive authority of a science-based public discourse

In the 1990s, Guerrero and his colleagues pointed to alcohol and firearms as the most prominent factors triggering the violence epidemic in Cali. As shown by a scientific publication that Guerrero coauthored, firearms were involved in 80,9% of the homicides that took place in Cali between 1993 and 1998, indicating that they undeniably played a major role in homicides (Concha-Eastman et al., 2002). However, alcohol intoxication –a concentration of at least 50 mg/dL of alcohol in the blood⁶ – was only found in 17,9% of the victims and remained unassessed for 29,4% of the cases (Concha-Eastman et al., 2002), showing a much weaker correlation between this ‘risk factor’ and homicides. In addition, another scientific publication by Guerrero’s epidemiology colleagues recognized that it was almost impossible to test alcohol concentration in the case of perpetrators: “In Cali, perpetrators are determined in 20% of the

⁶ Colombia is among the minority of countries that follow the World Health Organization’s *World Report on Road Traffic Injury Prevention*, which recommends drink-driving laws based on a blood alcohol concentration limit that is equal to or less than 50 mg/dl. Countries like USA or Canada, on the contrary, have limits above the recommended limit of 50 mg/dl of alcohol in the blood (WHO, 2015).

homicides and only 10% are charged, making it difficult to test alcohol among them around the time of the event" (Sanchez et al., 2011, p. 1043). In spite of all this, Guerrero said to the media that "50 percent of the bodies that end up in the Institute of Forensic Medicine have alcohol in their blood" (El Tiempo, 1993), and determined that alcohol had to be one of the main targets of his violence prevention policy.

Scientific accounts have an argumentative power from which politicians have profited in many cases. As David Meddings recognizes, "[scientific] objectivity tends to increase perceived credibility, and many insights from epidemiology might be viewed as factors that enhance the objectivity of an investigation" (2001, p. 151). This persuasive authority of science was embraced by Guerrero, who has been using the scientific discourse to gain more credibility, not only about his diagnoses of reality, but also regarding the policies implemented to treat and vaccinate Cali against the disease of violence.

Another instantiation of this legitimization of public decision-making through scientific accounts became evident when Guerrero and his colleagues ruled out, in front of the media (EFE, 2014; Valerio, 2015; Wallace, 2014b), the hypothesis that illegal drug trade organizations were involved in the homicide rate increase that Cali was experiencing in the 1990s. Yet, in a scientific work, he and his co-authors asserted exactly the opposite: that drug trafficking played a major role in the murders that occurred in Cali in the late 1980s and early 1990s, affecting not only people involved in this illegal activity, but also innocents who were outside it.

Drug trafficking appears among the known causes of these crimes, whose emergence in the city coincides with the increase in homicide rates recorded in the 1980s. This is the only general factor, as a social phenomenon, that emerges as a new activity at the end of the 1970s and that, given its high criminal and corruptive level, had a negative effect on a variety of social sectors. Drug trafficking and its related activities have led to the death of persons linked to that activity and others outside of it, especially leaders openly opposed to these criminal activities (Concha-Eastman et al., 2002, p. 236).

Even though the information contained in scientific publications did not question the involvement of drug traffickers in the homicides taking place in Cali, and showed that alcohol was not strongly correlated with these crimes, Guerrero did not recognize this publicly, outside of scientific publications. In fact, he did quite the opposite as he sustained that "[s]urprisingly, drug traffickers were not the major culprits", but that alcohol and firearms were (Institute for Health Metrics and Evaluation, 2014a).

As Sismondo has argued, scientific discourse is ostensibly used to establish facts that are built through an skillful deployment of positive rhetoric, aiming at persuading a specific audience (Sismondo, 2010, pp. 148–156). Guerrero seems to know this well and his employment of scientific discourse, even in contradiction to his own findings published in scientific publications, benefits from the gap that usually exists between the ‘experts’ of science and a citizenry of non-experts. As such, Guerrero has been quite successful at using the persuasive authority statements acquire when they are coated and armored through scientific accounts. By doing so, he has been able to protect his decisions from scrutiny and criticisms, while at the same time obtaining wider legitimacy.

In this light, Guerrero likes to present himself in the media more as a physician, epidemiologist, researcher and scientist, rather than as a politician. In a recent interview with *El Espectador*, on the occasion of the Roux award, Guerrero said: “In my next life I will devote myself to the academic activity, which is the one I actually like: doing research and teaching, that is my deepest satisfaction” (El Espectador, 2014). In a context like the Colombian one, where the image of politicians is so damaged, the figure of the scientist tends to be interpreted as redemption, an oasis in the midst of hopelessness, someone people can trust. Credibility has been performatively constructed by Guerrero, taking advantage of the sharp contrast between the cultural notions of politics and science. Crafting his public persona as a scientist is a strategic move that has allowed Guerrero to distant himself from the bad reputation and distrust that impoverish the image of most politicians in Colombia and other countries of Latin America. As Hilgartner says, inspired by Ervin Goffman’s *The Presentation of Self in Everyday Life*, social actors are performers who, through the artful use of words, gestures, clothing and many other devices, attempt “to highlight their creditable attributes while hiding stigmatizing ones” (2012, p. 269).

Similarly, presenting his policies as the result of an epidemiology-based study – rhetorically powerful due to its ‘scientific’ stance– allowed Guerrero to divert the attention of public opinion on drug cartels, and finally, re-focus it on aspects of the violence problematic that were more easily controlled by the city administration, guaranteeing short-term and measurable –‘demonstrable’– results in the eye of the common citizen. Admitting this, Guerrero wrote the following in a World Bank publication:

Cali’s experience indicates that the public is capable of supporting control measures, sometimes unpopular ones, if they are able to achieve a decrease in crime and insecurity. Measures such as restrictions on the sale of alcoholic beverages or on carrying weapons have an important but limited impact because they affect only some of the risk factors. It also indicates that it is possible to do something, that some interventions are effective in

the very short term, which can help to maintain public support for others whose effect will take longer (Guerrero, 2003, p. 22).

However, while these measures were effective for Guerrero to enjoy popularity towards the end of his first administration and even as he left office in 1994, policies implemented during his current administration have triggered some criticism and scrutiny from the public opinion, highlighting the limits of scientific discourse's power, especially when used to inform measures against violence that people experience so closely. In fact, after the wave of homicides during the first week of October 2014 in Cali, citizens became increasingly exasperated by the ineffectiveness of the local government and by the statements to the media that Guerrero made while being in Europe (Posada Rivera, 2014). In an interview to *Semana*, he was asked if he did not consider the Roux prize to have arrived at a bad time, to which he replied:

No, that is absolutely not true. The worst time of Cali is in the past. In the last year, in the year before, and in the last six years, we have had much higher homicide rates than now. By my calculations, this year's rate is 60 homicides per 100,000 people; last year it was 81, and the year before it was 83 or so; so, it is decreasing. However, now, this has coincided with a horrible media effect, and deaths that occurred in a massacre⁷, tarnishing all the good we have done throughout the year (Semana, 2014).

While Guerrero has tried to defend himself supporting his statements, once again, on epidemiological data, and using them to argue that the current problem of Cali is one related to a higher perception of insecurity (Semana, 2014), others think he is neglecting the evident involvement of illegal trade, gangs and criminal organizations in the homicides that have made press headlines in more recent times (Salazar, 2014). Likewise, people have expressed their disagreement with the emergency plans that are usually introduced when this kind of security crises occur, focusing on a temporal and drastic increase in the number of police officers and check points, but leaving untouched the structural causes of insecurity and violence, the historical trajectories involved, and more importantly, non-epidemiologically measurable factors (Posada Rivera, 2014; Salazar, 2014).

Among the many people who expressed discontent and frustration regarding the serious situation of violence experienced in Cali in October 2014 (Posada Rivera, 2014), Laura Posada

⁷ In this statement, Guerrero is referring to the murder of eight people that took place on October 3, 2014, in a house located in the south of Cali.

Suso, a columnist for the newspaper *El País*, in Cali, provided a telling claim under the title "More than a perception", borrowing medical terminology that echoes Guerrero's epidemiological rhetoric:

Nothing demonstrates that we have overcome the most critical moments of violence. On the contrary, progress against the mafia and crime is still poor. And now, even though the authorities are swollen-headed showing good numbers in terms of security and homicide reduction, it is not possible to minimize what happened, what happens. Although these results are important, they are not enough and you cannot find shelter in them . . . The truth is that this problem (violent deaths), encysted for many years and deeply rooted, cannot be treated with more palliative measures. Making endless diagnoses, taking desperate measures, increasing controls and armed forces only seem to serve the purpose of generating an immediate impact to relief and change the 'perception'. What about the definitive solutions? It is said that the safest cities are the ones where less police is need. The opposite seems to be operating here (Posada Suso, 2014).

Conclusion

My purpose with this paper is not to discredit the measures implemented by Guerrero's first administration. I do not consider absurd or counterintuitive to relate alcohol and firearms to acts of violence. While the data behind the implementation of alcohol restrictions were rather weak, it was shown, years later, that this policy contributed to a 33% reduction in Cali's homicide rate (Sanchez et al., 2011). Similarly, another study was made to evaluate the firearm ban that took place during the second year of Guerrero's first mayoral service (1993-1994), and showed that homicide rate decreased in 14% with the application of this measure (Villaveces et al., 2000). In other words, it would be wrong to say that alcohol and firearm restrictions have been unsuccessful, unreasonable or altogether mistaken. On the contrary, these policies have contributed to decrease the number of homicides that take place in one of the most violent cities in the world. Not without justification, the method and interventions developed by Guerrero and his co-workers has been praised and replicated in other Latin American cities.

What has been unfortunate, however, is the discursive presentation of epidemiology as *the* methodology to understand the phenomenon of violence in Cali. The 'one-size-fits-all' approach defended by Guerrero, which benefits and takes advantage from the cultural authority of science, has been mislabeled as the panacea that it is not. However, if the epidemiological

contributions to violence in Cali would be communicated to the public in a modest and honest way, being aware and transparent about their problems and limitations, and further complemented with other kind of approaches, we could get closer to a better understanding of violence in Cali and a more appropriate design of its possible solutions. Importantly, if the process of data gathering would pay very close attention to the principle of equality that Guerrero claims to be following (Guerrero, 2003, p. 10), reproducing and reinforcing stereotypes, inequalities and discriminatory classifications in terms of gender and class could be avoided.

The decision to analyze violence through the methodological, conceptual and institutional strategies that originated from the study of diseases in defined populations is, undoubtedly, a novel approach that opens valuable paths to address this highly complex phenomenon. However, the graphs, tables and maps that have emerged from the epidemiological study of homicides in Cali may tell us little about the structural causes and underlying motivations that lie behind those who pull the trigger. Just as it is mistaken to deprive diseases of the historical and cultural baggage that defines much of their natural history, subtracting from violence the human component that defines it leaves us with a faceless problem, without culprits and without mourners. Incorporating the view of social scientists not only into qualitative analyses of violence in Cali, but also in the design of quantitative studies of homicides and other type of crimes (Pine & Liboiron, 2015), and in the process of policy making, would help to create a more reliable and responsible picture of the situation that people in Cali are facing. I wonder how a re-humanized violence epidemiology, incorporating approaches and insights from social sciences, would look like.

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