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RESEARCH ARTICLE

Racial bias in police use of lethal force in Brazil¹

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This research attempts to test the existence of racial bias in the use of lethal force by police in Brazil. Data from Rio de Janeiro and São Paulo reveal that the proportion of blacks and mulattos among lethal victims of police intervention is higher than their respective share in the population. The paper further analyses the ratio of individuals killed vs. those wounded by police in Rio and shows that the likelihood of being killed is higher for blacks than for whites. Overall findings support the hypothesis of racial bias in police use of lethal force.

Keywords: police; lethal force; ethnicity; racial bias; racial discrimination

Introduction

Brazil is a racially mixed country. Black and indigenous populations have traditionally occupied the lowest strata of the social pyramid. Even though some classic authors defended the thesis that the social structure in Brazil is determined primarily by class rather than by race (see Freyre, 1933; also Fernandes, 1965), there is a growing amount of empirical research that shows that blacks earn less than whites even when they have the same degree of education, age, and work experience and that their chances of social mobility are lower (Hasenbalg, 1979; Ribeiro, 2006; Silva, 1985).

In this scenario, a central notion is that of bias. If there is racial bias, it means that people under the same conditions and with the same personal profile may be treated differently according to and because of their skin colour. However, highlighting that blacks are disadvantaged would not prove *per se* the existence of racial prejudice since these differences could also be explained through other mechanisms – such as class differences, closely correlated with race. As a result, if one is to show racial discrimination, one has to demonstrate that blacks *with the same characteristics as whites* are treated worse.

If there is indeed racial prejudice and discrimination in Brazil, agencies that deal with formal social control, that is, with the preservation of order and the prevention and punishment of social deviance and crime, would present an obvious opportunity for this bias to manifest itself. These agencies – which include police forces, prosecutors, judges, and prisons – deal particularly with people from the lowest socio-economic strata, where blacks and mulattos tend to be over-represented, and they can legitimately use force and coercion in the course of their work. All of this would open the possibility of venting their would-be prejudices against certain social targets.

The objective of this research is to test whether there is racial bias in police use of lethal force in Brazil. In a broader sense, this may also be considered a test of the wider hypothesis according to which police may discriminate in general against racial minorities,

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notably black people. Indeed, it would be interesting to analyse police action as a whole, rather than just the use of lethal force, since any racial bias in the latter may probably be a specific example of a broader problem. However, systematic data on police actions that include both details of police approach and race of the persons involved are simply not available.

So the question can be rephrased as follows: do the police kill more black people than white people *in comparable circumstances*? The last three words are of crucial importance if we are to prove the existence of racial bias.

Brazilian police have repeatedly been accused of an excessive use of force (Cano, 1998; Chevigny, 1991; Human Rights Watch, 1997). However, this paper will not be dealing with whether or not the amount of force is justified, but precisely with the issue of whether its use is balanced between racial groups. On the other hand, it cannot be denied that if some racial groups are killed more than others in comparable circumstances, this implies an excessive use of force in itself since lethal force should always be exerted in the minimum degree.

Review of the literature

In fact, there have been allegations that the criminal justice system in Brazil confers a harsher treatment to both blacks and mulattos compared to whites.

Thus, Ribeiro (1995) analysed a sample of the judicial proceedings related to 'blood crimes' (homicide and attempted homicide) in the First Jury Tribunal ('Primeiro Tribunal do Juri') of the city of Rio de Janeiro, between 1900 and 1930. He concluded that black defendants showed an apparently higher likelihood of being found guilty than mulatto or, particularly, white defendants. Further, defendants accused of attacking white victims had also a higher probability of being considered guilty than those who allegedly attacked mulatto or black victims. More recently, Adorno (1995) reviewed a sample of sentences for the crime of 'robbery with the help of accomplices' ('roubo qualificado com concurso de outros agentes') tried in the city of São Paulo in 1990. He found that blacks and mulattos enjoyed private attorneys and presented defence witnesses less often than whites, and that their likelihood of being found guilty was 9% higher than that of whites. As a result, he concluded the existence of racial bias in the judiciary.

In the particular case of the police, the opportunities for any prejudice to unfold could be considered even more favourable, due to various institutional factors: weak organizational controls, the discretionary nature of its work, and a climate of prevailing impunity related to agents who commit abuses (see Cano, 1999; Lemgruber, Musumeci, & Cano, 2003).

Nevertheless, research on police bias or racial profiling is relatively scarce in Brazil due to the lack of official records. We do not have official information, for instance, on the profile of people who are stopped and searched by the police.

In any case, official data are often subjected to various influences that can limit their reliability, such as the fact that they are affected by institutional routines and by the reluctance of many institutions to release information that could be damaging for their image.

One way to overcome the lack of official records is to resort to independent victimization surveys. Mitchell and Wood (1999) analysed the victimization supplement of the PNAD (National Residential Sample Survey), carried out by the Bureau of the Census (IBGE) in 1988, and found that blacks were more likely to be assaulted by policemen than whites, even after controlling for region, urban status, age, education, and income. Blacks were also more likely to be assaulted in general than whites, but the imbalance

was particularly strong in relation to assaults by policemen: whereas the odds of a black person being assaulted were 1.4 times the odds of whites, the odds of a black person being assaulted by a policeman were 2.4 times higher. Some other studies gathered similar evidence. Kahn (1998) analysed opinion and victimization surveys in São Paulo from 1995 to 1997 and revealed that blacks were more afraid of the police than whites (20% vs. 11%), to the point that in 1997 blacks were the only group who tended to be more afraid of the policemen than of criminals. Nearly half the black citizens interviewed had been searched by the police (47%), compared to a third of whites (34%). In another poll with over a thousand interviewees in São Paulo in 1997, 6% of whites and 14% of blacks claimed to have been physically assaulted by policemen.

However, a survey by CPDOC/ISER in the Rio de Janeiro metropolitan area in 1996 did not reveal a clear pattern of race bias in police action (CPDOC-FGV/ISER, 1997). A more recent survey conducted by CESEC in 2003 in Rio (Ramos & Musumeci, 2005) showed that the proportion of blacks and mulattos among those who declared to have been stopped by the police in the streets and in public transport was higher than the corresponding share of these racial groups in the population. On the other hand, the proportion of whites was higher among those who declared to have had their cars stopped by police. This difference is obviously linked to the fact that whites, being comparatively rich, probably tend to own cars and drive more often than blacks. This difference in the racial base rate of drivers and pedestrians affects any conclusion that might be drawn from these results. One other interesting point is that, among those who had been stopped by police, 55% of blacks and only 33% of whites had been subjected to a body search.

In short, most pieces of existing research, limited though they may be, seem to indicate that there is a distinct possibility of racial bias on the part of Brazilian police. However, methodological complications are common and alternative hypotheses can be argued in most cases.

One of the methodological problems of this kind of research is the measurement of race itself. In some cases, as in the racial composition of the general population obtained through the Census, race is defined by self-attribution of the subject, who is requested to choose among several options. Yet a strong line of research has shown that self-attributed race is not necessarily a fixed attribute. In other words, individuals may define themselves in different racial terms in various moments along their lives (see Wood, 1991) and their categorization may also depend on the context in which the demand is made. In other cases, however, race is defined by the civil servants who produce the documents without necessarily consulting the subject. This is the case of police and legal documents. Indeed, several studies have pointed out that the coincidence between self-attributed race and race as determined by an external observer is only partial and is subjected to the influence of several social and contextual factors (see de Carvalho, Pandolfi, Carneiro, & Grynszpan, 1998; Harris, 1964; Telles & Lim, 1998).

The collapse of the notion of race as something fixed and consensual introduces a caveat in research on racial bias. Since race is not an objective classification, every time we report it we have to be specific as to how it was measured and by whom. Furthermore, if one is to show bias by comparing the proportion of each racial group in two sources of data, both sources should, in principle, measure race in the same way and in moments not too far apart.

Police reports refer to the race of suspects or victims as perceived by police agents and there is logic in this since police use these documents for internal communication. For instance, if policemen are searching for a suspect, it is more important for them to note the race as defined by other colleagues than by the subject him or herself. Yet

there is no guarantee that different policemen will classify race in a consensual manner either.

Methodology

Official racial categories found in the Brazilian census are actually referred to as ‘colour.’ Interviewees self-categorize by choosing one of the following ‘colours’: (a) whites (‘brancos’); (b) mulattos, that is, people of mixed racial origin (notice that the Portuguese term ‘pardos’ refers exclusively to colour and translates literally as ‘brown’); (c) blacks (‘pretos’); (d) people of Asian origin (again, the Portuguese term ‘amarelos’ is restricted to colour and translates literally as ‘yellows’); and (e) indigenous (‘indígenas’). However, some of these labels, such as ‘indigenous,’ cannot be, strictly speaking, thought of as ‘colours.’ As such, official categories are a mixture of colour and ethnicity criteria and could be considered more broadly as the official manner in which the Brazilian state deals with the question of ethnic origin. Apart from the census, such categories are found in most official documents.

Several social organizations, such as those belonging to the black movement, have denied that this classification adequately represents the ethnic diversity in the country. In particular, there have been calls to replace both the terms ‘preto’ (black) and ‘pardo’ (mulatto or ‘brown’) for the more inclusive term ‘negro.’ The term ‘pardo’ (mulatto), in particular, has been criticized on the grounds that it would not properly represent an ethnic group as such and also on the grounds of its ambiguity, since people of different racial origins could be classified in the same way just because of their mixed race. The ongoing debate has also affected the degree to which individuals interviewed in official research are willing to identify with the different labels.

Regardless of the final assessment on the appropriateness of these terms, this research cannot escape the official categories since it is based on official documents which use precisely this classification. The only other possibility would have been to join blacks and mulattos into a single category, but it was felt that this could reduce the sensitivity of some comparisons. Furthermore, such a possibility (which would often translate in practice into a dichotomous race variable: white vs. non-white) is always implicitly available to the reader from the present data and will indeed be used at certain points during the text. If, on the other hand, the option of a dichotomous racial variable had been taken from the start, there would have been no analytic alternatives later on.

Data from two different cities were examined: Rio de Janeiro and São Paulo. Different sources were used in each case. In São Paulo, a double strategy was followed. First, the research team examined the archives of four out of the five Jury Tribunals in the city of São Paulo.² The registry books of each Tribunal were examined to seek out the cases of intentional homicide in which the profession of the indicted person was a policeman, both on-duty and off-duty. The research contemplated cases that had occurred between January 1996 and July 1999. However, cases whose proceedings were still pending were hard to trace and most of them could not be found. As a complementary strategy, we requested from the Police Ombudsman (‘Ouvidoria de Polícia’³) the identification number of the judicial process of all cases of intentional homicides committed by policemen that they had collected. We then looked for these cases in the Jury Tribunals. In total, we collected information on a total of 215 civilians intentionally killed by policemen in the city of São Paulo.

In Rio de Janeiro, we worked with the data from a study carried out by ISER on the use of lethal force by police in the city of Rio (Cano, 1998). This research analysed all registered

cases of civilians killed or wounded by gunshot in police actions in the city of Rio, both on- and off-duty, between January 1993 and July 1996. It was based primarily on Police Incident Reports ('Registros de Ocorrência') and on Autopsy Reports of the Office of the Forensic Pathologist. The data-set includes information on 991 civilians killed and 726 civilians wounded.

Both in Rio and in São Paulo the race of the victim was present in different types of documents but will be analysed according to the Police Incident Report because it is the most common document and also because it reflects the race categorization by police themselves in a moment nearest to their intervention.

Results

Results in São Paulo

Of the total of 215 fatal victims of police actions, 179 (83%) corresponded to judicial processes that had already been finalized (most of them dismissed) at the time of the research, while the 36 remaining victims (17%) belonged to judicial processes that were still pending. The question that arises is whether finalized cases might have a different profile from those that are pending. If so, we may be in front of a relatively biased sample, since most of our cases were dismissed. Pending cases may be different not just because they are more recent but, probably, because they contain more evidence that the homicide committed by the policeman may not have been justified. The cases where the evidence points to the possibility of guilt will most likely take longer since both the prosecution and the defence will devote more time to them. In any case, one should note that if the main hypothesis that police are more violent against blacks turns out to be true, then the cases with more evidence of excessive and illegitimate use of force will probably include a higher proportion of black victims. And this is precisely the kind of cases that we have the least, for many of them will probably be still pending and hence much more difficult to find. As a result, the test of our hypothesis on the present data-set will be a conservative one, given that the possible bias due to unfound pending cases will sway the results against our hypothesis.

We will compare the racial composition of the persons killed by the police with two groups of reference: the general population and the convict population (Table 1).

When we compare both the convict and the fatal victims' distributions to the general population, we see that over two-thirds of the population of the city are whites whereas less than 55% of the victims or the prisoners are whites. Likewise, mulattos represent only 25%

Table 1. Race composition of civilian victims of police intervention, compared to the convict and the general population of the city of São Paulo.

Race	Fatal victims of police intervention 1996–99		Convict population ^a 1997		General population ^b 2000	
White	107	52.7%	19,325	54.7%	6,988,908	67.0%
Mulatto	67	33.0%	10,561	29.9%	2,606,124	25.0%
Black	27	13.3%	5,272	14.9%	527,191	5.1%
Others	–	–	147	0.4%	313,323	3.0%
White and mulatto	2	1.0%	–	–	–	–
TOTAL	203	100.00%	35,305	100.00%	9,529,461	100.00%

^aSource: State Secretary of Prison Administration. Data correspond to those imprisoned in the state of São Paulo in 1997.

^bSource: Population Census of 2000 for the city of São Paulo.

of the population but 30% of the convicts and 33% of the victims. The contrast is particularly sharp in the case of blacks, who make up 5% of the population but rise up to 15% of the convicts and 13% of the victims. Hence, the likelihood of a black person being killed by police is almost 3 times higher than that of the average individual.

These discrepancies, particularly in the case of blacks, may be interpreted to mean that both the police and the criminal justice system in general may be biased against racial minorities in São Paulo. Nevertheless, two caveats are in order:

- (1) Race categorizations in all three sources (the population census, the prison system, and the Police Incident Reports) are not carried out according to the same criteria: census data are based on self-attribution while prison and police data depend on the perception of the officers. Thus, it is difficult to guarantee the equivalence between the different sources, especially between the population distribution and the other two.
- (2) There exists the possibility that various racial groups might engage in violent crime in different degrees. If people of different races have a different probability of committing violent crimes, the comparison between the population racial distribution and the fatal victims' distribution will not be straightforward. In other words, police may be killing proportionally more members of a certain racial group because they engage more in violent criminal activity. Thus, the differential racial proportion might be a consequence of different base rates rather than the result of bias on the part of the police. Rejecting the traditional prejudice that associated blacks to crime, several authors have questioned that such an association exists at all (Adorno, 1995). There is in fact no convincing evidence that some racial groups are more prone to violent crime than others. However, given the possible link between poverty and crime on the one hand (see, for instance, Fajnzylber, Lederman, & Loayza, 1998), and the strong correlation between race and poverty (blacks are much poorer) on the other, the possibility that the proportion of people who commit violent crimes may be higher in some racial groups than in others cannot be summarily discarded. Even though the old prejudice that considers some races more inclined to crime due to their nature or their culture should obviously be discarded, it might still be true that some racial groups live in conditions that make their members more likely to enter a violent criminal career.

Results in Rio de Janeiro

The research carried out by ISER on all incidents of police use of firearms that resulted in civilian casualties between January 1993 and July 1996 recorded a total of 942 dead opponents,⁴ 416 injured opponents, 30 civilians killed accidentally, 277 civilians injured accidentally, 26 police officers killed, and 122 police officers injured.⁵

Out of the total 1,717 civilian victims, 513 did not have their race registered in the Incident Report and a further two victims were registered as having 'other colour,' that is, different from 'white,' 'mulatto,' or 'black.' These individuals were eliminated from the analysis. In short, we have a rate of missing data on race corresponding to approximately 30% of all cases. This missing rate is much higher for the wounded (51%) than for the dead (14%), since Incident Reports tend to contain more specific and detailed information on fatal victims. This high missing rate among the wounded is true both for opponents (50%) and for accidental victims (53%).

The missing value rate is lower in the slums or 'favelas' (25%) than in the rest of the city (34%). This could be attributed to the fact that the probability of a fatal outcome – and

therefore of non-missing race data – is higher in the slums. Furthermore, there is also a correlation between area of town (slums vs. the rest of the city) and race since black and mulatto populations are predominant in the slums. As a result, an influence of the area of town on the missing rate might provoke a higher likelihood of missing data for some races than for others, and hence bias the results. However, once we separate fatal and non-fatal victims, missing rates are similar for favelas and for the rest of the city. Indeed, if we carry out a logistic regression on the likelihood of missing data for race (0 = non-missing; 1 = missing) using outcome (wounded vs. killed) and area (favela vs. rest of the city) as independent variables, the effect of the latter variable is not significant.⁶

Table 2 presents the race composition of victims of police actions in Rio, compared to the general population and the convict population.

Several interesting conclusions can be inferred from this table. Accidental victims⁷ represent, in principle, a sample of people from the areas where police and suspects make use of their weapons. As can be seen, the proportion of whites and mulattos among accidental victims is approximately 8% lower than in the general population, whereas the proportion of blacks is 3 times higher. In other words, police use their guns much more frequently in areas where black people live. This should come as no surprise since previous research (Cano, 1998) demonstrated that more than half the fatal victims of police interventions were killed in slums ('favelas'), areas where blacks are highly over-represented.⁸

As for the wounded opponents, the proportion of whites is smaller than among the accidental victims' population. Conversely, blacks and especially mulattos have a bigger share. Last, the percentage of whites among the dead opponents comes down dramatically to only 30%, while the proportion of mulattos and blacks continues to increase: 40 and 30%, respectively.

Hence, there is no doubt that civilian victims of police interventions are significantly darker than the general population. Whites, for instance, make up 60% of the inhabitants of the city, 51% of accidental victims, 43% of the wounded opponents, and only 30% of those opponents killed by police. On the other extreme, blacks represent only 8% of the citizens in the city, a quarter of the accidental victims, 27% of the wounded opponents, and 30% of the opponents who got killed. Thus, blacks are more than 3 times more likely to be wounded or killed by police than would be expected by their share in the population.

As for the convict population, it is clearly darker than the general population and also darker than the accidental victims. Its racial distribution is closer to that of the wounded opponents though with a moderately higher proportion of blacks and a lower proportion of mulattos. The convict population includes proportionally more blacks but also more whites

Table 2. Race composition of civilian victims of police interventions, of the convict population, and of the general population of the city of Rio de Janeiro.

Race	Type of victim of police intervention									
	Dead opponents		Wounded opponents		Accidental victims wounded and dead		Convict population ^a 1996		General population ^b 1991	
White	240	29.8%	89	42.6%	80	50.6%	4578	40.4%	3,252,517	60.0%
Mulatto	325	40.4%	64	30.6%	38	24.1%	2975	26.3%	1,715,178	31.6%
Black	240	29.8%	56	26.8%	40	25.3%	3780	33.4%	454,609	8.4%
TOTAL	805	100.0%	209	100.0%	158	100.0%	11,333	100.0%	4,967,695	100.0%

^aSource: DESIPE (Department of Penitentiary Institutions, State of Rio de Janeiro) December 1996.

^bSource: Population Census for the city of Rio de Janeiro: 1991.

than the dead opponents, but if we add mulattos and blacks together, dead opponents are still darker than convicts. This may provide further support for the existence of a police bias in the use of force, even when compared to the prison population, not just when contrasted with the general citizenry. Notwithstanding this, we should again underline the warning that the convict population probably has a different profile than the opponents since the former includes also petty criminals unlikely to be involved in shootings against police.

As mentioned before, several caveats could be argued against the conclusion that this discrepancy indicates a racial bias in police use of lethal force. For instance, police use their weapons more often in areas where the white population is more scarce and, as a result, blacks and mulattos could be expected to be over-represented among the victims of police interventions. However, people against whom the police shoot intentionally are markedly less white and more mulatto and black than the accidental victims who presumably live in the same areas. Therefore, there is a stronger claim that police use lethal force more against blacks and mulattos than against whites, since the comparison can now be established using the residents of those same areas as a control group.

Second, as already stated, the source of the race classifications is different for the different populations, which might affect the results. However, intentional victims are darker than accidental victims, both being registered in the same document (Police Incident Report), so this caveat would be less applicable to the comparisons between these groups.

Last but not least, the likelihood of the different racial groups engaging in a shootout with the police might be different. Since the number of people of each racial group who become involved in crime is unknown, the only way to address this alternative hypothesis is to compare opponents that are wounded to those killed by police. In principle, they were both supposed to be confronting police with weapons before they were shot. Thus, the likelihood of being wounded vs. being killed should be the same for all races, unless some factor that mediated a lethal result could be shown to correlate with race. In other words, the probability of dying among those individuals shot by police should be the same for all races even though the number of people from a certain race who become involved in shootings against police may be different. In statistical terms, the marginals of the distributions may be different, but that will not by itself produce a different joint distribution of race and lethal outcome unless there is some kind of bias.

In order to test this hypothesis, we submit the data on wounded and killed opponents to a log-linear model. The model for the value of every cell is the following:

$$\ln(m_{ij}) = \mu + \alpha_i + \beta_j + \gamma_{ij}$$

where m_{ij} is the value of the cell of the i th row and the j th column, μ is the constant for all cells, α_i is the effect of row i (race: white, mulatto, and black), β_j is the effect of column j (outcome: wounded or killed), and γ_{ij} is the interaction effect of row i and column j (race \times outcome).

When we try to eliminate the interaction term from the model – which reflects the fact that different races show different probabilities of dying after being shot – the likelihood ratio test yields, as expected, a significant result.⁹ This can be interpreted to mean that blacks and mulattos have a higher likelihood of dying in these shootouts. Yet there might be one element that could explain these results other than racial bias. Police use their weapons more often in slum areas (favelas), but the lethal outcome of their intervention is also much more intense in favelas (Cano, 1998). Given that police are more lethal in favelas and there are more blacks and mulattos in the favelas, this could all add up to a higher likelihood

of being killed among the blacks and mulattos simply because they live in the areas where police tend to be more lethal. In other words, these results could be attributed to a geographical bias rather than to a racial bias.

In order to test this, we added a new factor to the log-linear model: area of town (inside or outside favela). The model could now be expressed as such:

$$\ln(m_{ijk}) = \mu + \alpha_i + \beta_j + \delta_k + \gamma_{ij} + \gamma_{ik} + \gamma_{jk} + \gamma_{ijk}$$

where m_{ijk} is the value of the cell of the i th row and the j th column (with value k in the third dimension), μ is the constant for all cells, α_i is the effect of row i (outcome: wounded or killed), β_j is the effect of column j (race: white, mulatto, and black), δ_k is the effect of the area (inside favela vs. outside favela), γ_{ij} is the interaction of outcome and race, γ_{ik} the interaction of outcome and area, γ_{jk} the interaction of race and area, and γ_{ijk} the triple interaction (race, outcome, and area).

The likelihood ratio test shows that the three-way interaction is non-significant and can be removed from the model.¹⁰ Once we remove it from the model, we test the three two-way interactions. The area \times race interaction is also non-significant.¹¹ This may be interpreted to mean that the race distribution of the victims is not significantly different inside and outside the favelas. Since we know that the race distribution of the population is indeed very different, this lack of significance is actually indicating that police pick especially on blacks outside favelas so that the proportion of black victims outside (28%) comes close to the proportion of black victims inside favelas (31%). Furthermore, the race \times outcome interaction is significant¹² and so is the area \times outcome interaction.¹² The latter means that there is a higher likelihood of dying inside than outside the favelas. The former, which is the ultimate question in this test, can be interpreted as such: blacks and mulattos have a higher probability of being killed vs. wounded as compared to whites. Table 3 presents the cross-tabulation of race and outcome according to area.

Outside the favelas, 66% of whites shot by police end up dying compared to 76% of mulattos and 72% of blacks. Inside the favelas, 82% of whites shot end up dying vs. 90% of mulattos and 89% of blacks. In other words, when police shoot inside a favela it is much more probable that their targets will die and not just be wounded. But both inside and

Table 3. Cross-tabulation of outcome by race according to area of town.

Area				Race			
				White	Mulatto	Black	Total
Outside favela	Outcome	Wounded	count	63	43	39	145
			%within race	34.4%	24.0%	28.1%	28.9%
	Dead	count	120	136	100	356	
		%within race	65.6%	76.0%	71.9%	71.1%	
	Total	count	183	179	139	501	
		%within race	100.0%	100.0%	100.0%	100.0%	
Inside favela	Outcome	Wounded	count	26	21	17	64
			%within race	17.8%	10.0%	10.8%	12.5%
	Dead	count	120	189	140	449	
		%within race	82.2%	90.0%	89.2%	87.5%	
	Total	count	146	210	157	513	
		%within race	100.0%	100.0%	100.0%	100.0%	

Table 4. Lethality index of opponents in police interventions.

Area of town	White	Mulatto	Black
Outside favela	1.9	3.2	2.6
Inside favela	4.6	9.0	8.2

outside favelas blacks and mulattos are more likely to die than whites. Whites die approximately 8% less than blacks and mulattos. It is noteworthy that mulattos fare even worse than blacks but this difference is small and non-significant.¹⁴

One other way to realize the magnitude of this bias is to calculate the lethality index (number of opponents killed divided by the number of opponents wounded in these shoot-outs) by race and by area (Table 4). In normal armed confrontations, both military and police, it is expected to find on average more people wounded than killed. This corresponds to a coefficient of value less than 1. On the other hand, coefficients significantly above 1 indicate an excessive use of lethal force, thus revealing that it is more likely to be killed than wounded.

It is apparent that lethal rates are far worse in the favelas but whites fare better than non-whites both inside and outside. The lethality index for whites is half that of the other races inside favelas and around two-thirds outside favelas. As indicated above, mulattos face the worst outcome, even worse than blacks, though this latter difference is not very marked.

One last factor that could mediate the lethal outcome of these encounters is the weaponry presented by the opponents. If opponents of one racial group were more heavily armed than others, this could force police to shoot more repeatedly and with more firepower, thus increasing the possibility of killing these opponents. The data indicate that white opponents had an average of 1.42 weapons apprehended in the episodes when they were shot, mulatto opponents had an average of 1.77 weapons, and black opponents an average of 1.51 arms.¹⁵ This difference is non-significant¹⁶ and, in any case, does not go in a direction that could help explain the differential mortality of the various races. Likewise, the average number of shots that had been fired from the weapons confiscated in the episode is also similar for victims of the three races: 3.26 shots for episodes of white victims, 3.06 for mulatto victims, and 2.83 shots for black victims. These differences are again non-significant.¹⁷

Last, the more powerful arm apprehended in the episode is usually a gun or a pistol rather than a rifle, a machine gun, or any other type of more destructive weapons. This is true for 70% of the white victims, 68% of mulatto victims, and 67% of black victims. The difference between the racial groups is once again non-significant.¹⁸ Hence, there is no evidence that some racial groups might have been more or better armed than others so as to explain the differential mortality.

Conclusions

This paper attempted to test the hypothesis that there is a racial bias in the use of lethal force by police, that is, that they employ lethal force more frequently or more intensely against some racial groups (blacks and mulattos) than against others.

Both in Rio de Janeiro and in São Paulo there is a clear racial disparity among the fatal victims of police interventions when compared to the convict population or the general population, so that fatal victims are darker than the former and, particularly, than the latter.

However, this disparity does not necessarily mean there is racial bias on the part of the police, given that the data suffer from several limitations and that other alternative hypotheses could also explain this outcome. For instance, race categorizations in this comparison had been carried out by different sources (by the police or the prison agents, on the one hand, and by the citizens themselves in census data, on the other) and may therefore not be directly comparable. More importantly, in order to demonstrate bias from these data we would have to assume that all racial groups engage in violent crime and in armed confrontations with the police in the same degree. In addition to this, the higher proportion of blacks among fatal victims might also be explained by the fact that they are over-represented in favelas, that is, in the areas where police interventions tend to be more lethal. As such, this could be interpreted as a geographical bias rather than as racial discrimination on the part of the police.

Nevertheless, data for Rio de Janeiro included information on wounded opponents and on accidental victims of police shootouts, which allowed us to address some of these concerns. Thus, accidental victims, which represent a sample of the people who live in areas where police make use of their weapons, are darker than the general population. Furthermore, opponents, particularly dead opponents, are darker than accidental victims, which tends to explain away the alternative hypothesis that blacks and mulattos get killed more often simply because police are more violent in the areas where they live.

In order to further test these alternative hypotheses, we submitted the data of wounded and killed opponents in Rio to a log-linear model, whose results confirmed that the chance of being killed vs. wounded is higher for blacks and mulattos, both inside and outside the favelas.

Hence, the results of this research are consistent with the hypothesis of racial bias on police use of lethal force in Rio de Janeiro. The results are particularly supportive of this hypothesis because:

- (1) they compare the final harm (fatal or not) of people who are shot by police in a supposedly similar situation, which would tend to discard the alternative hypothesis that blacks are over-represented among fatal victims of police action simply because they are more likely to engage in violent confrontation with the police;
- (2) racial classifications are all carried out by the same source: police themselves;
- (3) the conclusion remains true both inside and outside favelas, which controls for the racial composition of the area and eliminates another particularly powerful rival hypothesis (i.e., blacks get killed more because they often live in favelas, where victims in general die more often).

In any case, further research is needed to confirm the existence of racial bias in police work and to explore the different circumstances in which it may arise.

Police officers in Rio tend to be surprised when confronted with these results, particularly because of the presence of numerous black and mulatto agents among police ranks. However, this is no guarantee against the possibility of racial discrimination in police organizations.

The first recommendation arising from this research would be to include the topic of ethnicity and ethnic bias in the curriculum of police academies in the country to stimulate individual and institutional reflection on these issues. The second main recommendation would be to establish data collection routines that would allow police organizations to evaluate periodically the existence of bias against racial or any other relevant social groups and to explore ways in which it could be corrected.

Notes

1. This research is part of a project conducted thanks to a grant of the Ford Foundation in Brazil. The research team included James Cavallaro, Ariel Alves, and Cristina Jakimiak, apart from the author.
2. In Brazil, homicide and intentional crimes against the life of others are the only crimes tried by a jury.
3. The 'Ouvidoria de Polícia' is a civilian police oversight body whose mandate can be summarized as follows: (a) collecting citizens' complaints related to abuses and crimes allegedly committed by police agents while protecting the identity of the witnesses; (b) following up the investigations of such cases carried out by Internal Affairs Units; and (c) keeping society informed on these issues.
4. Opponents are individuals against whom police shot intentionally.
5. There were also another 19 fatal and 33 non-fatal civilian victims in cases where it was not possible to determine whether the shots had been intentional or accidental.
6. $b = 0.35$; std. error = 0.182; $df = 1$; $p = 0.055$.
7. Accidental victims may have been wounded or killed from police as well as from suspects' bullets.
8. According to estimations based on a sample carried out by the Official Bureau of the Census (IBGE) together with the census itself in 1991, whites comprised 64% of the population in the rest of the city but only 38% in the favelas (Preteceille & Valladares, 1999).
9. (Likelihood Ratio Chi-square test = 12.66; $df = 2$; $p = 0.0018$).
10. (Likelihood Ratio Chi-square test = 0.476; $df = 2$; $p = 0.788$).
11. (Likelihood Ratio Chi-square test = 4.364; $df = 2$; $p = 0.1128$).
12. (Likelihood Ratio Chi-square test = 12.66; $df = 2$; $p = 0.0018$).
13. (Likelihood Ratio Chi-square test = 42.86; $df = 1$; $p < 0.0001$).
14. Applying the model just to blacks and browns, the race by outcome interaction yields the following results: Likelihood Ratio Chi-square test = 0.705; $df = 1$; $p = 0.401$.
15. Actually, the unit of analysis for weapons apprehended is the episode, not the individual. Thus, all the victims of one episode will be reporting the same guns. Obviously, one episode can have victims of different races involved. So the data for each race group are not completely independent, but they are still valuable in order to have an idea of the situation.
16. ($F = 2.78$; $df = 2$ & 1001; $p = 0.063$).
17. ($F = 0.22$; $df = 2$ & 1005; $p = 0.803$).
18. (Chi-square = 6.14; $df = 6$; $p = 0.407$).

Note on contributor

Ignacio Cano received his PhD in sociology at the Universidad Complutense de Madrid (Spain) in 1991. From 1991 to 1993 he worked for United Nations in El Salvador on issues related to human rights and refugee assistance. Between 1993 and 1996, he developed postdoctoral research at the universities of Surrey (UK), Michigan and Arizona (USA), mainly centred on research methodology and programme evaluation. From 1996 onwards, he has been based in Rio de Janeiro, working for NGOs and teaching in several universities. He is currently a professor of research methodology at the Department of Social Sciences of the Universidade do Estado do Rio de Janeiro. His main areas of interest include: violence, public security, and human rights; public policies and programme evaluation; and research methodology. Since 2001, he has been leading a line of research on racial bias in the criminal justice system in Brazil.

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