Racial Disparity in Police Stop and Searches in England and Wales

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Abstract

Data published by the United Kingdom's Ministry for Justice clearly shows that, compared to persons who were White, members of racial minorities in England, particularly Blacks, were far more likely to be stopped and searched by the police. The question is whether such racial disparity in stops and searches could be justified by racial disparities in offending? Or whether the disparity in stop and searches exceeded the disparity in offending? This paper proposes a method for measuring the amount of *excess* in *racial disparity* in police stop and searches. Using the most recently published Ministry of Justice data (for 2007/08) for Police Areas in England and Wales it concludes that while in several Areas there was no excess to racial disparity in police stop and searches, there was, on the basis of the methodology proposed in the paper, evidence of such excess in some Police Areas of England and Wales.

Keywords: Racial disparity, racial discrimination; stops; arrests; cautions, sentences; inequality measures.
JEL classification: K42 J71

1. Introduction

`   Police officers in Britain have the power to stop and search individuals, and any vehicles

in which they may be travelling, under a range of legislation including section 1 of the Police and

Criminal Evidence Act (PACE) 1984, section 60 the Criminal Justice and Public Order (CJPO)

Act 1994, and section 44 of the Terrorism Act 2000.[1] Section 1 of the PACE Act allows a police

officer to stop and search a person or vehicle suspected of carrying stolen or prohibited items.

Section 60 of the CJPO Act allows a police officer of the rank of inspector or above

to issue written authorisation for the stop and search of vehicles if there are reasonable grounds

for believing that incidents involving serious violence may occur or that persons are carrying

dangerous instruments or offensive weapons without good reason.[2] Section 44 of the Terrorism

Act allowed the police, till July 2010, to stop and search persons and vehicles for items that

might be used in terrorist activities *whether or not there were reasonable grounds to suspect the

presence of such items*.[3] In 2007/08, a total of 1,205,841 persons (1,035,438 under PACE,

53,125 under CJPO, and 117,278 under Terrorism) in England and Wales were stopped and

searched under these pieces of legislation or, to put it differently, a person was stopped and

searched by the police every 26 seconds. Nine out of ten of these persons were allowed to

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[1] The precursor to these Acts was the Vagrancy Act 1824 under sections 4 and 5 of which it was "illegal for a suspected person or reputed thief to frequent or loiter in a public place with intent to commit an arrestable offence". The use by the police, of the power provided by this Act, to stop and search persons they suspected of criminal activity, whether real or intended, (the "sus law") fuelled the resentment which underpinned the Bristol (St. Paul's) riots of 1980 and the riots in London (Brixton), Liverpool (Toxteth), and Leeds (Chapeltown and Handsworth) in 1981. In the wake of Lord Scarman's inquiry into the causes of these riots the "sus law" was withdrawn and replaced by subsequent Acts which empowered the police to stop and search individuals and their vehicles only when they had "reasonable suspicion" that an offence had been committed.
[2] The powers relate to pedestrians and vehicles in a specified locality, for a specified period, not exceeding 48 hours at a time.
[3] Following a ruling by the European Court of Human Rights in January 2010, the police in Britain can no longer stop and search under section 44 of the Terrorism Act 2000 without having to show reasonable suspicion of terrorist activity.

proceed without any further action being taken.

Since 1992, the Ministry of Justice (MoJ) in Britain, in compliance with the requirement under the Race Relations Act 1976 and the Race Relations (Amendment) Act 2000 to outlaw unlawful discrimination and promote race equality and good race relations, has published information on the ethnicity of persons "in contact" with the Criminal Justice System (CJS) where "contact" includes being stopped and searched by the police. Classification by ethnicity was based on a visual perception by the police of the (apparent) ethnicity of the suspect. There were four categories of "visual ethnicity": *White* (North European, South European)*; Black* (Afro-Caribbean, Afro-American, and African); *Asian* (Indian, Pakistani, Bangladeshi, Sri Lankan); *Other* (Chinese, Japanese, East Asian, Middle-Eastern, and mixed ethnicity).[4]

Data on the ethnicity of persons stopped and searched under the PACE Act - comprising 86% of total of stop and searches - which underpin this study, leaves little doubt that there was *racial disparity* associated with police stop and searches (hereafter abbreviated to "stops")[5]. In the words of the MoJ this meant that police powers were "exercised on a group out of proportion to the number of that group in the general population" (Ministry of Justice, 2009, p. 26). More plainly, it meant that the likelihood of being stopped was, in most Police Areas of England and Wales, considerably higher for Black and Asian persons than it was for persons who were White.[6] For example, in England and Wales in 2007/08, per 1,000 of their respective population (aged 10 and above), 129 Blacks and 40 Asians, against 17 Whites, were stopped (Ministry of

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[4] See section 4 for details of the ethnic classification. Readers in the USA should note that the term "Asian" is used in Britain to mean South Asian: Indians, Pakistanis, Bangladeshis, and Sri Lankans.
[5] It should be pointed out that an unknown number of persons were stopped *without being searched* presumably because police suspicions were allayed after a conversation with the detainee.
[6] The paper follows the American Psychological Association's Practice of capitalising the terms White, Black, and Asian when referring to race/ethnicity. The term "race" refers to the classification by distinct groups: White, Black, Asian. The term "ethnic" refers to groups which are defined more by culture and place of origin. However, the terms "race" and "ethnic" are used interchangeably in this paper to mean persons who were White, Black, or Asian. The analysis is restricted to these three groups: only 17,555 of the 1,035,438 persons stopped and searched in England and Wales under PACE in 2007/08 were of "Other" ethnicity.

Justice, 2009, Table 4.2a). To put it differently, Blacks and Asians constituted, respectively, 2.8% and 4.7% of the population (aged 10 and above) of England and Wales but accounted for, respectively, 16.6% and 8.7% of stops.[7]

A justification for racial disparity in stops might lie in racial disparity in offences. If persons belonging to racial minorities offended disproportionately to their numbers in the population, then "targeting" such persons as candidates for stops could, arguably, be construed as *efficient,* rather than *biased,* policing: the efficient deployment of police resources in preventing crime *requires* racial disparity in stops. On this argument, racial disparity in the selection of persons who are stopped does not necessarily mean that such selection is underpinned by bias.

The efficiency argument has been made most strongly by Smith (1997), though not, it should be emphasised, in the context of race. He argued that the police responded to "cues that were objectively related to offending when making stop decisions"[8] and that, in making this response, the police were necessarily selective in their targets since "the relationships between age and sex and offending were extremely robust and strong....if the police were to stop the same proportion of old ladies as young men, that would be evidence of bias because old ladies are far less likely to be law-breakers" (p. 330).

This argument translates into the context of this paper by substituting "Whites" for "old ladies" and "ethnic minorities" for "young men". [9] For example, the fact that, in 2007/08, 35% of all stops in the Metropolitan Area were of Blacks (MoJ, 2009, Table 4.1a) should be set against the following countervailing facts: 32% of all arrests in the Area were Black (MoJ, 2009, Table

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[7] The ethnic breakdown for the population were obtain as the ethnic percentages from the 2001 Census applied to the Office of National Statistics mid-2007 estimates of the population aged 10and over in each Police Area.
[8] Examples of such cues are provided in Smith and Gray (1983).
[9] This is similar to the "statistical discrimination" hypothesis for explaining racial disparity in the labour market (Phelps, 1972). Employers believe that, *on average*, productivity levels differ between racial groups, though not necessarily for racial reasons. However, since employers cannot observe everything they wish to know about the productivity of *individual* job candidates, they use race as a predictor of the candidates' abilities.

5.1a); Blacks constituted 32% of those tried at the Crown Courts in the Area; and, 33% of those persons whom Crown Courts judged to be guilty were Black (MoJ, 2009, Table 6.3).[10]

Farrrell and McDevitt (2010) have stated that "one of the most challenging concepts in racial profiling research has been the relation between disparity and discrimination" and that researchers must "ultimately decide what level of disparity is sufficient to indicate discrimination" (p. 82). The implication of these observations is that even if one accepts the argument that, for reasons of efficiency, there is racial disparity in stops, it still leaves open the possibility that this *exceeds* (or *falls short* of) the disparity required by efficiency considerations. There is consensus among researchers on racial profiling that disparity of treatment does not necessarily equate to biased treatment (Farrell and McDevitt, 2006). However, the important question which the protagonists in the debate have not been able to answer satisfactorily is this: how much of the racial disparity in stops can be justified on efficiency grounds and how much is the result of bias? Furthermore, does the efficiency/bias composition of stops vary by racial group, so that some groups suffer relatively more than others?

The purpose of this paper is to provide answers to these questions which lie at the heart of the CJS in Britain. It does so by constructing a *summary* measure of racial disparity in stops in a Police Area by aggregating across the stop experiences of all the Area's racial groups. While such an aggregation may be carried out in a number of ways some, by embodying more "sensible" properties (discussed in the next section), would be better than others. The paper proposes a method, whose origins lie in the measurement of inequality, for devising a "good" summary measure of the racial disparity in stops. Such a measure, applied to data on stops, would enable a ranking of Police Areas in terms of racial disparity.

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[10] In 2007, Keith Jarrett, the President of the National Black Police Officers Association in Britain, asked for an increase in the number of stops of Black persons in order to reduce the amount of gun and knife crime (*The Daily Telegraph*, 21 October 2007).

Next, using the same methodology, the paper computes, for each Police Area, a summary measure of racial disparity in offences in that Area. By comparing the disparity in stops with the disparity in offences it arrives at a measure of *excess disparity*: if, in a particular Police Area, the disparities in stops and offences are approximately equal then, notwithstanding the disparity in stops, racial disparity in policing in that Area is not excessive; however, if the disparity in stops significantly exceeds that in offences then policing in that Area is excessively disparate racially.

The idea of comparing disparities in stops and offences to arrive at a measure of bias is well established in the criminology literature. For example, Lamberth (1998) in his study of police stops on the New Jersey turnpike found that while African Americans comprised 13.5% of the turnpike's driving population and 15% of the turnpike's speeders, they constituted 35% of the drivers pulled over: from this disjoint between disparity in stops and speeding, he concluded that the offence of "Driving While Black" was alive and well on the New Jersey turnpike. However, this methodology has one defect: it does not address the problem of multi-racial disparities. What if there were two groups - African Americans and Hispanics - with each group treated differently in terms of stops, compared to Whites, but at different rates? How then would one construct a summary measure of disparity which would encompass all the groups?

The methodology proposed in this paper is capable of answering this question: it sets out summary measures of racial disparity which are built up from the disproportionate outcomes for the separate racial groups. In so doing, it begs two questions. First, when can a person, in contact with the CJS, be said to have "offended"? The term "offenders", as used in this study, refers here to three different types of persons: persons arrested by the police; persons cautioned by the police; persons sentenced by Crown Courts.[11] Second, how are the summary measures of racial

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[11] There is an important difference between British and US research on racial disparity in stop and searches. In Britain, the data refer to *stop and searches*: an unknown number of persons are stopped *without being searched*. So,

disparity in stops and offences to be constructed? The next section sets out the methodology for doing so.

2. The Analytical Framework

Suppose that a population of N persons is divided into three mutually exclusive and collectively exhaustive racial groups -White (W) , Black (B) and Asian (A) - with N_k persons in each group, $k = W, B, A.$ Let S and S_k represent, respectively, the total number of stops, and the number of stops made of persons from group k with $n_k = N_k / N$ and $s_k = S_k / S$ being the shares of group k in, respectively, the total population and the total number of stops.

The number of stops of a particular racial group k $(k = W, B, A)$, per 1,000 of its relevant population, is:

$$p_k = (S_k / N_k) \times 1000 = (S_k / N_k)(N / S)(S / N) \times 1000 = (s_k / n_k)\overline{p}$$

where: $\overline{p} = (S / N) \times 1000 = \left(\sum n_k p_k\right) \times 1000$ is the total number of stops per 1,000 of total population (that is, the arithmetic mean of the p_k). If $p^* = \prod (p_k)^{n_k}$ represents the geometric mean then, following Theil (1967), the natural logarithm of the ratio $\overline{p} / p^*$ provides a measure of *racial disparity in stops*:

$$
\begin{aligned}
I = \log(\overline{p} / p^*) &= \log(\overline{p}) - \sum_k n_k \log(p_k) \\
&= \log(\overline{p}) - \sum_k n_k \log(s_k / n_k) - \log(\overline{p}) \qquad (1) \\
&= \sum_k n_k \log(n_k / s_k) = \sum_k I_k
\end{aligned}
$$

As Bourguignon (1979) has observed, the *disparity coefficient, I,* in equation (1) has much to commend it. First, it satisfies the *principle of transfers* whereby a transfer of stops, from

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the post-stop action in Britain is the possible arrest of the person stopped and searched. In the USA, stop and search constitute separate pieces of data: a person is stopped and then, possibly, searched as *a separate* post-stop action (Farrell and McDevitt, 2010).

a group to which the police pays relatively close attention to a group which the police leave relatively undisturbed, would reduce disparity. Second, it satisfies the property of *scale independence* so that a proportionate increase in all the p_k would leave the value of I unchanged. Lastly, it satisfies the *principle of population* so that the value of the disparity measure does not depend upon the number of groups among whom the total of stops are to be distributed.

Since, by the property of means, $\bar{p} \geq p^*$, we have $I \geq 0$, with $I = 0$ when $n_k = s_k$ (or, equivalently, $p_k = \bar{p}$) for all k, $(k = W, B, A)$. Its maximum value, $I = \log(\bar{p})$, is obtained when $p_k = 0$ for some k in which case $p^* = 1$. The value of I represents the *overall* level of racial disparity in stops, with $I = 0$ implying that stops are "colour-blind". Theoretically, $I > 0$ simply implies that there is racial disparity in stops, not that such disparity is necessarily directed against racial minorities. However, given the observations in the earlier section about the direction of racial disparity in stops, it will be assumed that $I > 0$ represents racial disparity against Blacks and Asians and, therefore, in favour of Whites.

The contributions of the groups to overall disparity is, from equation (1), $I_k = n_k \log(n_k / s_k)$. The size of the group contribution, I_k, depends positively upon two factors: (i) the proportionate size of the group in the total population (n_k); (ii) the (log) distance between the group's population share and its share of the total number of stops: $\log(n_k / s_k) = \log n_k - \log s_k$. Racial disparity in favour of a group (as manifested by $n_k > s_k$) would imply $I_k > 0$; racial disparity against a group (as manifested by $n_k < s_k$) would imply $I_k < 0$. Higher values of I_k would imply greater degrees of racial disparity towards the group.

Balanced against any racial disparity in stops is the fact that, *on average*, members of some groups may be more likely to "offend" than members of other groups. If R represents the

7

total number of offenders, of whom R_k are drawn from group k, then $q_k = (R_k / N_k) * 1000$ is the number of offenders from group k per 1,000 of its population. If $r_k = R_k / R$ is group $k's$ share of offenders, then: $q_k = (r_k / n_k)\overline{q}$, where: $\overline{q} = \sum n_k q_k = (R/N) * 1000$ is the total number of offenders per 1,000 of total population (that is, $\overline{q}$ is the arithmetic mean of the q_k). Denoting by q^* the geometric mean of the q_k and using an argument identical to that employed earlier, yields a measure of *racial disparity in offences* as:

$$J = \log(\overline{q} / q^*) = \sum_k n_k \log(n_k / r_k) = \sum_k J_k \qquad (2)$$

where the properties of J in equation (2) are identical to those for I in equation (1).

3. Identifying Excess Disparity

Identifying the amount of excess disparity in police stops is fundamental to this paper. In order to do so, denote the difference between I and J defined in equations (1) and (2), respectively, as:

$$\theta = I - J = \sum_k n_k \log(r_k / s_k) \qquad (3)$$

Equation (3) has the following properties:

1. If there is no racial disparity in stops ($n_k = s_k$ for all k so that *I=0*) then $\theta = -J$.

2. If $s_k = r_k$ for all k, so each group's share of total stops equals its share of the total of offenders, then $\theta = 0$, and policing (in terms of stops) can be described as "race neutral": any racial disparity in stops is mirrored in a corresponding disparity in offences so that while there is racial disparity in stops there is no excess disparity.

3. If $\theta < 0$ (that is, $I < J$) then policing in terms of stops is "race friendly": since the disparity in stops *is less than what is required* by the disparity in offences.

8

4. If $\theta > 0$ (that is, $I > J$) then policing in terms of stops is "race unfriendly": the

    disparity in stops *is more than what is required* by the disparity in offences.

    Because of the above properties of θ, it is referred to in this paper as the *excess disparity*

coefficient. This approach to measuring the stance of racial disparity assumes that the disparities

in stops and in offences are pointing in the same direction. This means that when $I > 0$

and $J > 0$, the likelihood of being stopped *and* of offending are greater for members of racial

minorities than it is for Whites.[12]

The above analysis related to the *overall* racial stance of stops. However, given an overall

stance, the racial stances with respect to the different racial groups might be quite different. For

example, stops might be racially malign overall but this may affect Blacks more than Asians. To

analyse the effect of stops on particular racial groups define:

$$\theta_k = I_k - J_k = n_k \log(r_k / s_k)$$

 and note that $\sum \theta_k = \theta$. Then policing *towards racial group k*, in terms of stops, is: race neutral

if $\theta_k = 0$, that is $s_k = r_k$; race unfriendly if $\theta_k < 0$, that is $r_k < s_k$; race friendly if $\theta_k > 0$, that is

$r_k > s_k$. The overall of excess disparity, $\theta = \sum \theta_k$, is the sum of the group excess disparities.

4. Some Data-Related Issues

As stated in the introductory section, the MoJ in Britain has published since 1992

information on the ethnicity of persons in contact with the CJS with the most recent data for

2007/08 being available in MoJ (2009). These data for 2007/08 - which were used in this paper

to put empirical flesh on the methodology set out in the previous two sections - require

amplification on several points.

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[12] It should be observed that the racially benign and the racially malign approaches to stops are inefficient: neither approach targets suspected offenders so as to maximise the probability of deterring potential offenders. Efficiency in targeting suspected offenders *is equivalent to* adopting a racially neutral approach to stops.

Stops under the PACE, CJPO, and Terrorism Acts

The MoJ data present information, by ethnicity of detainee, on the stop (and search) of persons, and any vehicles in which they may have been travelling, undertaken in each of 42 Police Areas, under three separate pieces of legislation: section 1 of the PACE Act 1984; section 60 of the CJPO Act 1994; and section 44 of the Terrorism Act 2000. Since the number of persons stopped under the CJPO and the Terrorism Acts was small, compared to those stopped under PACE (respectively, 53,125 and 117,278 against 1,035,438 for England and Wales for 2007/08), it is only the PACE stops that are analysed in this paper.

The Benchmark Population

The MoJ did not provide information for stops under the PACE and CJPO Acts on whether the detainee was a pedestrian or a motorist.[13] This is an important point because it relates to the appropriate benchmark for measuring racial disparity in measuring stops. Farrell and McDevitt (2010) set out the pros and cons of several possible benchmarks. The easiest benchmark to use is local census data. These data could be used either in terms of the racial demographics of the resident population, or the resident *driving* population, of an area. This distinction is significant: if, compared to pedestrians, it is motorists who are largely stopped then it is the driving population which is the appropriate benchmark.[14] However, in general, local census data suffer from the flaw that they take no account of persons passing through the area whether as pedestrians or motorists: so, while an area may be characterised by a high level of stops these may be of transients rather than residents.[15] For reasons set out below, this paper uses

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[13] However, for stops under section 44 of the Terrorism 2000 Act, the MoJ did provide a breakdown by pedestrians and motorists.

[14] The racial demographics of the driving and the resident populations could be very different (Greenwald, 2003).

[15] To correct for the effect of transients requires observers to record the race and ethnicity of pedestrians and/or drivers (Lamberth, 1998). Another way of obtaining estimates of the driving population is the use of accident data (Alpert et. al. 2004; Farrell and McDevitt, 2006).

the racial demographics of the resident population (above the age of 10) in the Police Areas of England Wales as the benchmark for measuring racial disparity.

1. The public debate in Britain on the incidence and consequences of disparity in stops has taken place entirely in the context of data published by the MoJ on the racial composition of stops and these data have used as their benchmark the resident population of the Police Areas in England and Wales. Consequently, the use of this benchmark ensures that the results of this study are readily interpretable by all the protagonists to the British debate.

2. As pointed out earlier, the data on stops under the PACE Act, which are the focus of this paper, do not - unlike data on stops under the Terrorism Act - distinguish between stops of pedestrians and stops of motorists. Of the total of 117, 278 stops made under section 44 of the Terrorism Act 2000 in England and Wales in 2007/08, 56% (65,217 stops) were of vehicle occupants, the remainder (52,061 stops) of pedestrians. Since the ostensible purpose of stops under the Terrorism Act was to search for articles used in connection with terrorism they were plausibly more slanted towards motorists than stops made under the PACE Act: bombs and guns being more likely to be carried in a car than on foot! So, unlike in the USA, where stops are mostly of motorists, it is not unreasonable to assume that at least half the stops in England and Wales, made under the PACE Act, involved pedestrians.

3. The racial demographics of the resident population (above the age of 10) in the Police Areas of England Wales for 2007/08 were computed by the MoJ by applying the ethnic proportions in the population (as obtained from the 2001 Census) to the Office of National Statistics' mid-year estimates for 2007. Although it would have been possible to obtain the ethnic composition of car-owning households from the 2001 Census, it would

not have been possible to estimate the number of car-owning households by ethnicity for 2007 since the number of car-owning households in 2007 by Police Area was unknown.

The Determination of Ethnicity

As stated earlier, the ethnicity of a person in contact with the CJS was based on a visual assessment by the police of the ethnicity of the suspect. The initial assessment of ethnicity was based on a 6+1 or "Phoenix" classification table: White European, Dark European; African-Caribbean; Asian; Oriental; Arab; unknown. Depending upon this assessment, the person was then categorised as: *Black* (Afro-Caribbean, Afro-American, and African); *Asian* (Indian, Pakistani, Bangladeshi, Sri Lankan); *Other* (Chinese, Japanese, East Asian, Middle-Eastern, and mixed ethnicity). In using these ethnic data, this study dropped the category "other ethnicity" thereby restricting the empirical analysis to the published data on Whites, Blacks and Asians. The relevant totals and proportions were obtained by aggregating over the relevant numbers for Whites, Blacks and Asians.

The latest set of data for 2007/08 also allowed for persons to "self-define" their ethnicity. Depending on how they defined themselves, they were then categorised as (self-defined ethnicities in parentheses): *White* (British, Irish, Other White); *Mixed* (White and Black Caribbean, White and Black African, White and Asian, Other Mixed); *Asian* (Indian, Pakistani, Bangladeshi, Other Asian); *Black* (Caribbean, African, Other Black); *Chinese* (Chinese, other ethnic groups including Travellers). However, self-defined ethnicity posed two problems. First, there were a large proportion of persons who, after being stopped or arrested, refused to identify their ethnicity: 7% of persons stopped under the PACE Act refused to state their ethnicity compared to just 1 % whose ethnicity could not be visually assigned. Second, information on self-defined ethnicity was collected for stop and searches and for arrests but not for cautions and

sentencing. Since this study involves a comparison of stops and searches with arrests, cautions, and sentencing it is, perforce, based on a categorisation by visual ethnicity.[16]

Offenders

The term "offenders", as used in this paper, refers to three different types of persons:

1. Persons who were arrested in the year in question: that is, there was *prima facie* evidence of an offence having been committed.[17]

2. Persons who were cautioned in the year in question: that is, persons who received a formal warning after having admitted the offence.[18]

3. Persons who were sentenced in a Crown Court in the year in question.[19] Such persons received one of the following: conditional discharge; fine; community sentence; immediate custody.[20]

The idea that persons belonging to some groups are more disposed to criminal activity than others is not new. Under the Criminal Tribes Act of 1871, certain groups in India were deemed to be Criminal Tribes because their members were "addicted to the systematic commission of non-bailable offences." Once a tribe became "notified" as criminal, all its members were required to register with the local magistrate, failing which they would be charged with a crime under the Indian Penal Code. This Act was repealed in 1952 but replaced by the

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[16] See Ministry of Justice (2009) for details of the evolution of ethnic monitoring of Britain's CJS.

[17] A person may be arrested for any offence that carries a custodial sentence. An arrested suspect may be subsequently: charged; cautioned; dealt with informally; or released without charge.

[18] In order to divert low-level crimes away from courts, the police in Britain have the power to issue a "caution", that is, to warn a person about the unacceptability of his/her behaviour and explain the consequence of repeating the offence (which is usually to be charged for the offence). The police may only issue a caution to persons 18 years of age or over, who admit to the crime, *and agree to be given a caution*. Cautions will always remain on a person's record and persons refusing a caution will normally be prosecuted for the offence through the usual channels.

[19] Although magistrates' courts also sentence offenders there was very limited data by Police Area on the ethnicity of such persons. By contrast, the ethnicity of those sentenced by Crown Courts was available for twenty two of the forty two Police Areas.

[20] Most Crown Court sentences (57% over the 22 Areas) were custodial sentences followed by a smaller proportion (18%) of community sentences. However, 67% of Black offenders - compared to 57% of Asians and 54% of Whites - received custodial sentences; conversely, 19% of White offenders - compared to 18% of Asians and 15% of Blacks - received community sentences.

Habitual Offenders Act 1952 which gave police the power to investigate a suspect's criminal tendencies and whether his occupation was "conducive to [a] settled way of life." (Resist Initiative International, 2007).

In the West, the study of the relation between race and crime has a long history in the discipline of criminology and the study of criminal justice (Greene and Gabbidon, 2009). Summarising the evidence for the USA, Sampson and Wilson (2009) argue that "the evidence is clear that African Americans face dismal and worsening odds when it comes to crime in the street and incarceration" (p. 37).

A parallel field of study - comprehensively surveyed in Piqero *et. al.* (2003) - has been of "criminal careers": the longitudinal sequence of offences committed by an individual offender. They make the point that research on criminal careers has generated a wealth of information about the relationship between past and future criminal activity and helped to isolate important life circumstances and events related to changes in criminal activity over time. However, notwithstanding this research, little is known about how criminal careers vary across race and gender.

Elliot (1994), using National Youth Survey data to study violent offenders, found that in the US, at the age of seventeen, 36% of African American males and 25% of White males reported committing one or more violent offences and that twice as many African American males continued their violent careers into their twenties and were thus likely to have longer criminal careers. However, in Britain the evidence points in a different direction. Sharp and Budd (2003) in their analysis of the Offending, Crime, and Justice Survey (OJCS) 2003 found that, after controlling for age, White and Mixed Race respondents had higher rates of (self-reported) offending than Black and Asian respondents; nonetheless, people from ethnic

minorities were more likely to have contact with the CJS than persons who were White.

5. Results on Disparity in Stops by Police Area

Table 1 shows, for the forty two Police Areas of England in 2007/08, the number of stops, arrests, cautions, and Crown Court sentences for Whites, Blacks and Asians, per 1,000 of their respective Area population. In almost every Area, the number of Black and Asian stops, arrests, cautions, and sentences was greater than that for Whites. Consequently, the *direction* of disparity, in respect of stops, arrests, cautions, and sentences was the same: in favour of Whites and against racial minorities. Within the category of racial minorities, Blacks attracted greater police attention - in terms of stops, arrests, and cautions - than did Asians.

<Tables 1 & 2>

Table 2 shows the *shares of the racial groups* in the totals of population, stops, arrests, cautions, and sentences. In 2007/08, Blacks constituted 3% of the population in England and Wales but accounted for: 17% of all stops, 10% of all arrests, 7% of all cautions, and 14% of Crown Court sentences. By contrast, although 92% of the population in England and Wales was White, this group accounted for only: 74% of all stops, 85% of all arrests, 88% of all cautions, and 79% of Crown Court sentences. Table 2 also confirms the direction of disparity - earlier observed from the data in Table 1 - by showing that, in almost every Area, the proportion of Whites in the Area population exceeded their proportionate presence in the numbers in that Area who were stopped, arrested, cautioned, and sentenced ($n_k > s_k$ and $n_k > r_k$); conversely, the proportionate presence of Blacks and Asians in the numbers who were stopped, arrested, cautioned, and sentenced in the Area exceeded their proportionate representation in its population ($s_k > n_k$ and $r_k > n_k$). Equations (1) and (2) were applied to the data on shares (shown in Table 2) to calculate the levels of inequality associated with stops, arrests, cautions, and

sentences.[21] Table 3 shows, under the columns headed "Values of the Disparity Coefficients", the values of inter-group disparity in the distribution of stops, arrests, cautions, and sentences for the forty two Police Areas in England and Wales.[22]

<Table 3>

These values show that racial disparity in stops - as measured by the value of the disparity coefficient, I, of equation (1) - was greatest in the West Midlands (17.6), followed by the Metropolitan Area (14.7), by Thames Valley (10.3), and by Nottinghamshire (8.5) and Bedfordshire (8.3). However, these were also Areas in which racial disparity in offences - as measured by the value of the disparity coefficient, J of equation (2) as applied to arrests, cautions, and sentencing - was the greatest. For example, the values the disparity coefficient, J, for arrests, cautions, and sentences were, respectively: 11.2, 5.9, and 19.6, for the Metropolitan Area; 7.9, 2.4, and 15.4 for Bedfordshire; 5.5, 3.7, and 10.2 for the West Midlands; and 4.7, 6.0, and 8.5 for Nottinghamshire.

Table 3 show the values of the excess disparity coefficient, θ, of equation (3), as the difference between the values of I and J, for: (i) stops less arrests; (ii) stops less cautions; and (iii) stops less sentencing. Large positive values of θ imply that the racial disparity in stops exceeded the level needed for "efficient" policing; values around zero are indicative of race neutral stops; while negative values imply that the racial disparity in stops fell short of what was required for "efficient" policing. Police stops were race neutral in several Areas with the value of θ (for stops less arrests) being around zero for twenty five Police Areas.[23] The largest values of θ (for stops less arrests) were recorded in West Midlands (12.0), Nottinghamshire and the Thames

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[21]That is, respectively, I of equation (1) and J of equation (2).
[22] Crown Court sentencing data was available for 22 Areas.
[23] Bedfordshire, Cambridgeshire, Cheshire, Cleveland, Cumbria, Derbyshire, Devon & Cornwall, Durham, Humberside, Lancashire, Lincolnshire, Merseyside, Norfolk, North Yorkshire, Northamptonshire, Northumbria, Suffolk, Surrey, Sussex, West Yorkshire, Wiltshire, Dyfed Powys, Gwent, North Wales, and South Wales.

Valley (both 3.9), Hampshire (3.7), Metropolitan (3.7), South Yorkshire (2.9), and Leicestershire (2.6).

In addition to arrests, this study used two other measures of "offending": cautions and Crown Court sentences. Compared to arrests, there was, in almost every Police Area *less* inter-racial inequality associated with cautions: the value of the disparity coefficient, *J*, for England and Wales was 3.8 for arrests and 1.7 for cautions. The shares data in Table 2 offers an explanation for this: in 2007/08, Blacks and Asians, respectively, accounted for 9.7% and 5.6% of total arrests but only 6.9% and 4.9% of total cautions.

Consequently, several Areas in which stops were race neutral when "offending" was defined in terms of arrests (that is, $\theta=0$ for such Areas), were race unfriendly in terms of stops when offending was defined in terms of cautions (that is, $\theta>0$ for these Areas).[24] For other Areas, excess disparity against minority groups in stops increased when the propensity to offend was judged by cautions received rather than by arrests made.

However, when the propensity to offend was defined in terms of Crown Court sentences, the results relating to excess disparity in stops, set out in the preceding paragraph, were reversed. Compared to arrests, there was, in almost every one of the 22 Police Areas for which the relevant data were available, *more* racial disparity associated with (Crown Court) sentences: as Table 3 shows, the value of the disparity coefficient, *J*, for England and Wales was 3.8 for arrests and 7.9 for cautions. This higher level of disparity was due to the fact that, as Table 2 shows, in almost every one of these 22 Police Areas, Blacks and Asians constituted a much higher proportion of the total number of Crown Court sentences (14% and 7%, respectively, for England and Wales) than they did of total arrests (10% and 6%, respectively, for England and Wales). As a

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[24] For example: Bedfordshire, Cambridgeshire, Derbyshire, Norfolk, Northamptonshire, Suffolk, Wiltshire, Gwent, and South Wales.

consequence, several Areas which were race neutral, or even race unfriendly, in terms of police stops when the propensity to offend was judged on the basis of arrests (that is, $\theta=0$ or $\theta>0$), appeared race friendly when the propensity to offend was judged on the basis of Crown Court sentences (that is, $\theta<0$).[25] For other Areas, excess (racial) disparity in police stops was considerably reduced when the propensity to offend was defined in terms of Crown Court sentences instead of arrests made.

6. The Effectiveness of Police Stop and Searches

In light of the fact that, in 2007/08, over one million persons in England and Wales, and any vehicles in which they might have been travelling, were stopped and searched by the police, such stops must be viewed as a major instrument of policing. This, naturally, raises the question of their effectiveness in fighting crime. Judging from the available figures, as published by the Ministry of Justice (2009), there can be little doubt that the returns to stops in terms of the number of concomitant arrests - arrests being the post-stop action - are low. In 2007/08 there were a total of 1,475,103 arrests in England and Wales but only 8% of these arrests (113,898) were the result of a stop. Only 11% of stops in England and Wales resulted in an arrest (MoJ, 2009, Table 4.4a)[26]: for Whites, Blacks, and Asians, these proportions were, respectively 12%, 12%, and 10%. To put it differently, given that 88% of Blacks, who were stopped in England and Wales in 2007/08, were "innocent" - in that they offered no grounds for being arrested - stopping 129 out of 1,000 Blacks for such low returns seems excessive.[27]

The low returns attached to stops are as much an argument for doing away with stops, or at least reducing their number, as for altering their racial focus. If the chances of arrest, following

[25] For example: Bedfordshire, Cambridgeshire, Cleveland, Hertfordshire, Metropolitan.
[26] 1,035,438 stops and 113,898 resulting arrests.
[27] The ineffectiveness of stops as an instrument of policing is mirrored in US research. A majority of research suggests that even though Black and Hispanic drivers are more likely to be stopped and searched than white drivers, the likelihood of finding contraband is the same for all groups (Farrell and McDevitt, 2010).

a stop, are not very different between members of different racial groups then there can be little justification for the likelihood of a Black person being stopped being nearly *eight* times that of a White person[28]. But the fact that the returns on stops are low with respect to *all* the racial groups must cast doubt on the efficacy of this instrument as a means of apprehending offenders. Put differently, the justification for using stops as an instrument of policing must, on the available evidence, be based upon something other than their usefulness in apprehending offenders.

Till such a justification is provided, the damage caused to race relations, through the large-scale stopping of innocent Blacks - by an essentially "White" Police force - has to be the central point of concern about the implementation of stops in England and Wales. [29] The notion that black boys and men were more likely to be stopped by the police than their white counterparts has been a feature of British life (Ryder, 2009). In the USA, Black motorists report being stopped more often than White motorists and, when stopped, disproportionately believe that race was the reason for the stop (Englen and Calnon, 2004; Reitzel and Piquero, 2006). It is important to emphasise that throughout this paper the theme has been *stop and search* (for which the term "stops" has provided a convenient abbreviation). Ryder (2009), a Black, Cambridge-educated lawyer wrote: "if you have never been stopped and searched when you have done nothing wrong, it may be hard to explain the impotence you feel...the uncertainty [you experience in future meetings with a police officer] can eat away at you...it is not only you who lives with it, but your parents, your siblings, your partner, even your children".

Peppering the disproportionate stopping of Blacks and other minority groups are examples of egregiously insensitive police stops. The Archbishop of York, the Most Rev John

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[28]In 2007/08, 129 Blacks, but only 17 Whites, per 1,000 of their respective populations were stopped and searched in England and Wales (MoJ, 2009).
[29]The Metropolitan Police stopped nearly 17% of Blacks in its Area (168 per 1,000), with only 12% of stops leading to arrests.

Sentamu, recently disclosed in a House of Lords debate that he had been stopped and searched eight times by the police: "when the policeman realised I was a bishop, it didn't stop me being stopped and searched".[30] A Black police adviser, Ken Hinds, who sits on the Metropolitan Police's Independent Advisory Committee said he had been stopped and searched more 100 times in two decades and "most recently in August [2009], I was arrested and humiliatingly frogmarched across King's Cross concourse because my £35 train ticket only entitled me to travel on a train 24 minutes later and they refused to accept I had made an honest mistake".[31]

Given that stops in England and Wales are not a very productive form of policing (in as much the harvest of post-stop arrests is relatively small) and given also that racial disparity in stops is not reflected in disparity in post-stop arrests (the post-stop arrest rate for Whites, Blacks, and Asians being similar at around 10%-12%) it is hard in Britain to, firstly, justify the large number of stops carried out and, secondly, to justify the racial disparity in stops by which the chances of a Black person being stopped is eight times that of a White person.

A reason for persisting with stops, notwithstanding their ineffectiveness and intrusiveness, is provided by McConville *et. al.* (1991, 1997) who argued that "the aims of stops and arrests are often not to enforce the law *per se* but to secure broader objectives: the imposition of order, the assertion of authority, the acquisition of information" (McConville *et. al.*, 1991, p.16). On the assertion of authority argument, stops are a valuable tool of policing precisely because they are intrusive and humiliating.

Another reason is provided by Ryder (2006) who argued that "traditionally the primary purpose of a lawful stop and search was to determine whether a person was carrying stolen goods and prohibited articles. But now the search is also used as an information-gathering exercise.

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[30] *The Daily Telegraph*, 28 July 2010.
[31] *The Daily Mail*, 16 October 2009.

Names, addresses, and other information may be gathered and placed on the police database. New provisions even allow photographs and fingerprints to be checked."

A reason for racial disparity in stops might be prejudice: Becker (1957) argued that racial discrimination in the labour market arises because employers "dislike" people from a particular group and referred to this as a "taste for discrimination". The Archbishop of York, after he had been stopped and searched eight times by the police in Britain, put it more succinctly when he remarked that police checks were often conducted on the basis that "he doesn't look like one of us".[32]

A second reason for racial disparity in stops is that the police may stop people on the basis of racial "stereotypes" - culturally shared beliefs, both positive and negative, about the characteristics and behaviours of particular groups (Fiske, 1998). Lamberth (1998) argued that the reason African American drivers were more likely to be stopped compared to their White counterparts is that the police believed - a notion perpetuated by some police training films - that African Americans were more likely than Whites to carry drugs: therefore, it made sense to stop African Americans. This belief was held in spite of the fact that "there is no untainted evidence that minorities are more likely to buy and sell drugs"...and that "the percentage of American Americans who abuse drugs [12%-14%] was proportionate to their presence in the population" (Lamberth, 1998).

Studies of cultural stereotypes show that respondents associated being Black and male with hostility, aggressiveness, and danger (Correll *et. al.* 2002).[33] Graham and Lowery (2004) show, in a set of experiments with police and probation officers, that *unconscious* racial bias,

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[32] *The Daily Telegraph*, 28 July 2010.
[33] A vivid expression of racial stereotyping is from Tom Wolfe's *Bonfire of the Vanities*: "it was the deep worry that lives in the skull of every resident of Park Avenue south of 96th Street - a black youth, tall, rangy, wearing white sneakers" (p. 23).

based on racial stereotypes, *when activated*, brought about disparity in the treatment of youth offenders by the legal system: Black offenders were treated as violent and aggressive with adult-like criminal minds rather than as (as juvenile offenders should be treated) vulnerable, immature, and less culpable than adults. This view of racial stereotyping is in contrast to the traditional approach towards stereotyping in which people are aware of their biases and can control their consequences (Fiske, 1998).

7. Conclusions

The contribution of this paper was, firstly, to use the different degrees of racial disproportion in police stops towards different racial/ethnic groups to build a summary measure of racial disparity (embodied in a disparity coefficient) in police stops: the higher the value of this coefficient, the greater the racial disparity in stops. The methodology for doing so, borrowed from the literature on inequality measurement, ensured that the proposed disparity coefficient in stops embodied sensible properties in terms of its building blocks. In similar fashion, the paper also constructed a summary measure of racial disparity in "offences". By comparing the disparity in stops with the disparity in offences, it was possible to define an excess disparity coefficient such that higher the value of this coefficient, the larger the amount by which observed disparity exceeded that required by race neutral (that is, "efficient" policing). The methodology for constructing the disparity and the excess disparity coefficients was applied to data on stops, arrests, cautions for each of the forty two Police Areas in England and Wales: this enabled the Areas to be ranked in terms of the racial disparity in their stops and also by the amount of excess embodied within this disparity.

The data used in this paper were *aggregate* data for each of the Police Areas. This had the advantage that the results were not conditional on a specific location - for example, police stops

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of motorists on the New Jersey turnpike as in Lamberth (1998) - but embraced vast swathes of area such as the London Metropolitan Area or England and Wales in its entirety. However, the use of aggregate data also constrained the interpretation of the study's findings: while this paper offers a methodology to quantify disparity it is, perforce, silent on its many, and complex, origins.

Most importantly, in the presence of racial disparity in an Area, it was not possible, applying this methodology to aggregate data to identify the source of disparity; it was only possible to gauge its size. First, racial disparity in a Police Area could be the outcome of neither organisational racism nor individual actions by racist officers. For example, it may be police policy to devote relatively more resources to a particular neighbourhood with a large minority presence because, *for reasons unrelated to race*, it has a high crime rate. For example, Petrocelli *et. al.* (2003) showed that the total number of stops in Richmond, Virginia was determined solely by neighbourhood crime rates: so as first step, there was neighbourhood disparity rather than racial disparity in the exercise of police power.

However, neighbourhood disparity would show up as racial disparity in stops across the Police Area in because minorities in that neighbourhood - because of their disproportionate presence in it - would have a high likelihood of being stopped and, because of heavy policing in that neighbourhood, stops from that neighbourhood would form a relatively large proportion of stops in that Area. Furthermore, if the racial disparity in offending in that Area was not mirrored in the racial disparity in stops then, on the methodology of this paper, this would show up as excess disparity even though its origins had nothing to do with racial bias.

If racial disparity is due to the presence of racist officers, rather than to organisational policies, then, too, it is difficult to identify the source of prejudice in these officers. It could be

conscious, explicit prejudice upon which they act through their own volition (Becker, 1957; Fiske, 1998) or it could be unconscious prejudice which is triggered in certain circumstances and upon which the protagonists have little control. To paraphrase Graham and Lowrey (2004), under unconscious thought processes actions leading to the disparate treatment of racial minorities are unintentional, involuntary, and effortless. If racial disparity in the treatment of minorities is based upon prejudice, conscious or unconscious, then the question arises about the training police officers should receive in order to overcome negative stereotypes: recent findings (Lowery *et. al.* 2001) focus on the important role of good inter-racial/ethnic social relations in altering in negative perceptions.

With the publication of the MacPherson report in 1999 into the death of the Black teenager Stephen Lawrence (Home Office, 1999) the term "institutional racism" has been applied to the attitudes of the police - and, indeed, several other public bodies - towards minority groups. This form of racism was defined by the report's author, Sir William MacPherson as the "collective failure of an organisation to provide an appropriate and professional service to people because of their colour, culture, or ethnic origin...[which] through unwitting prejudice, ignorance, thoughtlessness, and racist stereotyping disadvantages minority ethnic people". Ten years after the death of Stephen Lawrence, Commander Cressida Dick, Head of the Metropolitan Police's Diversity Directorate, warned: "It is very difficult to imagine a situation when we will say we are no longer institutionally racist".[34]

Another limitation of the study, in terms of its empirical conclusions, is its use of official data on offending. These data, which relate to the racial composition of persons in contact with the CJS in terms of arrests, police cautions, and Crown Court sentences show that, compared to Whites, these malign outcomes were more likely for Blacks and Asians. One interpretation of

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[34] *The Guardian*, 22 April 2003.

these data is that these ethnic minorities are more involved in crime than the majority White population.[35] Another might be that Courts show towards White defendants but go by the letter of law where Black and Asians are concerned. As Phelps (1972) observed, group characteristics are "used as a proxy for data not sampled" with the result that, in the context of stops - and, indeed, more general contact with the CJS - race becomes a surrogate for the non-racial factors which underpin the likelihood of offending. In this connection, the Police Superintendents' Association protested the Home Office's decision to withhold the findings of a study showing the "comparative levels of offending between racial populations in this country".[36]

However, an alternative interpretation is that this greater level of contact in terms of "offending" might be due to selective over-policing (a heavier police presence in certain neighbourhoods or among certain ethnic groups) in conjunction with policing based on negative stereotypes (whether institutional or personal). Sharp and Budd (2003) have also pointed to the role of "visibility" - through spending time in public places, having friends who have been in trouble with the police, being expelled from school, having been homeless - in attracting police attention and suggested that, in these respects, Blacks were more "visible" than persons from other groups.

Lastly, one does not know if the enforcement priorities and activities are the same across Police Areas. If, for example, one police area was focusing on drug enforcement, while another was focusing on traffic enforcement, and a third was focusing on gang violence one might expect ethnic differences in stop and arrest rates between the different Areas.

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[35] Sensationalist stories like "Gang Rape: Is it a Race Issue", which claimed that two-thirds of 92 persons convicted between January 2006 and March 2009 of gang rape were Black or mixed race (*The Independent*, June 21, 2009), serve to reinforce these beliefs
[36]The *Economist*, 30 January 1999, p.27.

All these limitations of the present study, set out above, amount to, collectively, an agenda for research - partly accomplished, partly putative - on race and crime. Metaphorically speaking, it represents a journey of a thousand miles. This paper represents a single, possibly faltering, step along this road.

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Table 1: Stop, Arrest, Caution, and Crown Court Sentencing Rates by Police Area and Ethnicity, 2007/08
(per thousand of ethnic population, aged 10+)

Police Area	Stops			Arrests			Cautions			Crown Court Sentences		
	White	Black	Asian	White	Black	Asian	White	Black	Asian	White	Black	Asian
Avon & Somerset	8	50	11	22	104	28	0.7	2.4	1.1	.	.	.
Bedfordshire	7	32	12	27	127	44	0.6	0.2	0.8	0.8	4.6	2.6
Cambridgeshire	14	69	21	30	163	53	0.6	1.2	0.5	1.1	6.9	2.9
Cheshire	6	19	7	22	69	25	0.5	0.0	0.0	1.3	3.9	1.6
Cleveland	20	35	10	.	.	.	0.6	2.1	0.6	2.1	14.2	3.8
Cumbria	19	16	69	25	23	30	0.6	0.6	0.2	1.4	1.3	0.8
Derbyshire	9	38	15	25	104	37	0.6	1.5	0.4	1.2	4.4	2.4
Devon & Cornwall	13	55	13	19	95	39	0.6	1.6	0.6	.	.	.
Dorset	11	142	25	25	208	42	0.6	1.9	1.3	0.8	5.3	3.8
Durham	15	7	5	33	68	50	0.7	1.3	0.4	1.6	5.2	2.3
Essex	7	67	12	34	274	59	0.8	0.6	2.7	.	.	.
Gloucestershire	10	47	15	26	161	38	0.6	2.9	0.6	0.9	6.7	1.1
Greater Manchester	19	92	30	35	128	38	0.5	1.7	0.6	.	.	.
Hampshire	12	135	26	26	149	45	0.5	0.8	0.8	.	.	.
Hertfordshire	11	74	25	22	128	31	0.6	2.5	0.7	0.8	8.1	2.0
Humberside	14	39	10	27	104	34	0.7	0.9	0.4	.	.	.
Kent	10	65	11	26	177	72	0.7	1.4	0.6	.	.	.
Lancashire	16	28	22	37	173	34	0.9	2.2	0.7	1.9	3.2	2.4
Leicestershire	20	148	32	22	130	23	0.6	0.4	0.3	1.0	0.2	1.6
Lincolnshire	19	28	11	31	139	54	0.6	1.7	0.5	.	.	.
Merseyside	35	87	27	34	105	38	0.5	1.0	0.4	.	.	.
Metropolitan	41	168	63	25	88	29	0.6	1.5	0.6	1.1	5.4	1.5
Norfolk	11	99	17	25	179	52	0.5	0.7	0.5	.	.	.
North Yorkshire	13	24	38	27	106	55	0.5	0.8	0.7	1.0	1.4	1.9
Northamptonshire	21	107	38	21	108	35	0.7	2.6	0.7	.	.	.
Northumbria	23	46	22	43	96	46	1.1	3.4	1.5	.	.	.
Nottinghamshire	6	38	11	38	174	54	0.7	4.0	1.0	1.3	8.5	2.1
South Yorkshire	16	98	43	32	150	50	0.9	2.6	0.9	1.7	10.1	2.7
Staffordshire	17	60	37	29	169	66	0.9	1.4	1.0	1.2	6.8	5.1
Suffolk	8	60	11	16	117	31	0.6	2.1	0.9	.	.	.
Surrey	16	92	25	18	111	28	0.5	2.1	0.7	.	.	.
Sussex	16	99	29	28	221	43	0.8	3.9	1.2	0.9	35.6	3.0
Thames Valley	11	73	35	29	158	58	0.4	1.3	0.5	.	.	.
Warwickshire	8	44	13	23	103	29	0.8	2.6	0.6	0.7	8.7	1.4
West Mercia	9	67	28	24	113	61	0.7	1.7	1.0	.	.	.
West Midlands	8	49	23	24	85	29	0.8	2.4	0.9	1.6	7.9	2.5
West Yorkshire	23	78	36	37	164	49	0.8	3.1	0.8	.	.	.

Wiltshire	7	46	13	13	97	23	0.4	1.5	0.6	.	.	.
Dyfed Powys	15	37	15	27	66	33	0.9	1.6	1.5	0.9	5.1	2.1
Gwent	14	65	30	26	108	49	0.8	2.0	1.3	.	.	.
North Wales	19	88	17	37	104	52	0.3	0.9	0.6	1.3	6.4	1.2
South Wales	14	70	24	29	126	35	0.5	1.5	0.5	.	.	.
England and Wales	17	129	40	28	104	35	0.7	1.7	0.7	1.1	6.0	1.9

Source: *Statistics on Race and the Criminal Justice System 2007/8*, Home Office, April 2009.

Table 2: Shares in Population, Stops, Arrests, Cautions, and Crown Court Sentencing: by Ethnic Group and Police Area, 2007/08

Police Area	Population share			Share in Stops			Share in Arrests			Share in Cautions			Shares in CC Sentencing		
	W	B	A	W	B	A	W	B	A	W	B	A	W	B	A
Avon & Somerset	97.4	1.3	1.3	90.1	8.0	1.9	92.6	5.8	1.6	93.4	4.6	2.0	.	.	.
Bedfordshire	87.2	3.9	8.9	71.9	15.4	12.7	72.5	15.4	12.1	86.8	1.2	12.0	62.9	16.4	20.7
Cambridgeshire	95.8	1.2	3.0	90.2	5.5	4.3	89.2	5.9	4.8	95.0	2.4	2.6	85.9	6.8	7.3
Cheshire	98.9	0.4	0.7	97.9	1.3	0.8	97.9	1.3	0.8	100.0	0.0	0.0	98.0	1.2	0.8
Cleveland	97.5	0.4	2.2	98.3	0.7	1.1	97.1	1.0	2.0	96.9	1.2	1.9	93.6	2.5	3.9
Cumbria	99.5	0.2	0.3	98.8	0.2	1.0	99.5	0.2	0.3	99.7	0.2	0.1	99.7	0.2	0.2
Derbyshire	96.4	1.0	2.6	91.5	4.3	4.2	92.1	4.1	3.7	95.9	2.5	1.6	91.6	3.5	4.9
Devon & Cornwall	99.3	0.3	0.4	98.2	1.4	0.4	97.6	1.6	0.8	98.7	0.9	0.4	.	.	.
Dorset	98.9	0.5	0.7	93.1	5.6	1.3	95.2	3.8	1.0	97.0	1.6	1.5	93.9	3.0	3.0
Durham	99.2	0.3	0.6	99.7	0.1	0.2	98.6	0.5	0.9	99.2	0.5	0.3	98.4	0.8	0.8
Essex	97.6	0.9	1.5	89.6	8.2	2.3	90.6	7.1	2.4	94.8	0.7	4.5	.	.	.
Gloucestershire	97.7	1.0	1.2	93.6	4.7	1.7	92.3	6.0	1.6	94.1	4.7	1.1	91.4	7.2	1.4
Greater Manchester	92.0	1.9	6.0	83.2	8.3	8.4	87.0	6.8	6.3	88.1	5.9	6.0	.	.	.
Hampshire	97.7	0.7	1.6	89.4	7.5	3.1	93.5	3.9	2.6	96.4	1.1	2.5	.	.	.
Hertfordshire	94.8	1.7	3.5	83.1	10.1	6.8	86.2	9.3	4.5	89.7	6.5	3.8	78.7	14.3	7.0
Humberside	98.7	0.4	0.9	98.3	1.1	0.7	97.3	1.5	1.2	99.0	0.5	0.5	.	.	.
Kent	97.3	0.7	2.0	93.1	4.7	2.2	90.1	4.7	5.1	96.8	1.5	1.7	.	.	.
Lancashire	93.9	0.5	5.6	91.6	0.9	7.6	92.6	2.4	5.0	94.3	1.2	4.4	91.9	0.9	7.2
Leicestershire	86.2	1.8	12.0	73.1	10.8	16.1	79.3	9.4	11.3	92.0	1.2	6.8	82.0	0.3	17.7
Lincolnshire	99.1	0.4	0.5	99.1	0.6	0.3	97.3	1.8	0.9	98.6	1.1	0.4	.	.	.
Merseyside	98.1	1.0	0.8	96.8	2.5	0.6	95.9	3.1	0.9	97.3	2.0	0.7	.	.	.
Metropolitan	73.8	12.8	13.4	50.2	35.9	14.0	55.3	33.3	11.4	61.4	27.0	11.6	47.1	40.8	12.0
Norfolk	99.0	0.4	0.5	95.4	3.7	0.8	95.9	3.0	1.1	98.9	0.6	0.6	.	.	.
North Yorkshire	99.1	0.3	0.6	97.7	0.6	1.7	97.6	1.2	1.2	98.6	0.5	0.9	98.4	0.4	1.2
Northamptonshire	95.9	1.8	2.3	87.7	8.5	3.8	87.7	8.8	3.5	91.4	6.4	2.2	.	.	.
Northumbria	97.9	0.4	1.7	97.6	0.7	1.6	97.4	0.8	1.8	96.7	1.1	2.2	.	.	.
Nottinghamshire	94.9	2.3	2.8	81.8	13.6	4.6	86.5	9.9	3.6	85.2	11.5	3.3	82.2	13.8	4.0
South Yorkshire	95.8	1.4	2.9	85.6	7.5	7.0	89.9	6.0	4.2	93.7	3.6	2.7	88.1	7.6	4.3
Staffordshire	97.4	0.7	1.9	93.6	2.4	3.9	92.0	3.9	4.1	96.6	1.2	2.2	88.9	3.7	7.4
Suffolk	98.0	1.2	0.8	90.8	8.1	1.1	90.5	8.0	1.5	95.1	3.7	1.2	.	.	.
Surrey	96.4	0.9	2.7	91.2	4.8	4.0	90.9	5.1	4.0	93.2	3.2	3.6	.	.	.
Sussex	97.5	0.8	1.7	92.2	4.8	3.0	91.6	5.9	2.5	93.6	3.8	2.6	73.3	22.6	4.1
Thames Valley	92.8	2.2	5.0	76.0	11.5	12.5	81.1	10.3	8.7	88.1	6.2	5.6	.	.	.
Warwickshire	96.1	0.8	3.1	91.0	4.2	4.8	92.9	3.4	3.7	95.4	2.5	2.1	85.3	9.1	5.7
West Mercia	98.2	0.6	1.2	92.7	4.0	3.4	94.3	2.7	3.0	96.8	1.4	1.8	.	.	.
West Midlands	80.9	5.1	14.0	53.6	20.4	26.1	70.1	15.5	14.4	73.0	13.3	13.7	63.2	19.7	17.1
West Yorkshire	89.2	1.6	9.1	81.5	5.2	13.3	82.3	6.6	11.1	85.1	6.1	8.8	.	.	.

Wiltshire	98.1	0.8	1.1	93.3	4.7	2.0	92.7	5.4	1.9	95.6	2.8	1.6	.	.	.
Dyfed Powys	99.4	0.2	0.4	99.1	0.5	0.4	98.9	0.5	0.5	99.0	0.4	0.7	97.9	1.2	0.9
Gwent	98.5	0.5	1.0	95.5	2.3	2.2	96.1	2.0	1.9	97.0	1.2	1.7	.	.	.
North Wales	99.4	0.2	0.4	98.5	1.1	0.4	98.8	0.7	0.6	98.7	0.6	0.8	98.5	1.2	0.4
South Wales	97.5	0.9	1.7	93.1	4.1	2.8	94.4	3.6	2.0	95.6	2.6	1.8	.	.	.
England and Wales	92.4	2.8	4.8	73.8	17.2	9.0	84.7	9.7	5.6	88.2	6.9	4.9	79.1	13.6	7.4

Source: *Statistics on Race and the Criminal Justice System 2007/8*, Home Office, April 2009.

Table 3: Values of Inter-Group Inequality Indices, by Police Area

Police Area	Values of the Disparity Coefficient: *I* and *J*				Values of the Excess Disparity coefficient: θ		
	Stops	Arrests	Cautions	Sentences	Stops less Arrests	Stops less Cautions	Stops less Sentencing
Avon & Somerset	4.7	2.7	1.9	.	2.0	2.8	.
Bedfordshire	8.3	7.9	2.4	15.4	0.4	5.9	-7.1
Cambridgeshire	2.9	3.5	0.4	5.8	-0.6	2.5	-2.9
Cheshire	0.4	0.4	-	0.4	0.0	-	0.1
Cleveland	0.5	0.2	0.4	1.9	0.3	0.1	-1.4
Cumbria	0.4	0.0	0.1	0.0	0.4	0.3	0.3
Derbyshire	2.3	2.0	0.8	2.0	0.3	1.5	0.3
Devon & Cornwall	0.6	0.9	0.2	.	-0.3	0.4	.
Dorset	4.3	2.4	0.8	3.2	1.9	3.5	1.2
Durham	0.3	0.1	0.2	0.3	0.2	0.1	0.0
Essex	5.7	4.7	1.5	.	1.0	4.2	.
Gloucestershire	2.3	3.4	2.2	4.3	-1.1	0.1	-2.1
Greater Manchester	4.4	2.6	1.9	.	1.8	2.5	.
Hampshire	6.0	2.3	0.3	.	3.7	5.7	.
Hertfordshire	7.1	5.2	2.6	11.5	1.9	4.5	-4.4
Humberside	0.3	0.6	0.2	.	-0.3	0.2	.
Kent	2.7	4.1	0.3	.	-1.4	2.4	.
Lancashire	0.4	1.1	0.4	0.3	-0.7	0.0	0.1
Leicestershire	7.6	5.0	1.9	2.7	2.6	5.6	4.9
Lincolnshire	0.1	0.9	0.3	.	-0.8	-0.2	.
Merseyside	0.6	1.0	0.3	.	-0.4	0.3	.
Metropolitan	14.7	11.2	5.9	19.6	3.5	8.8	-4.9
Norfolk	2.5	1.9	0.0	.	0.6	2.5	.
North Yorkshire	0.6	0.7	0.1	0.2	-0.1	0.5	0.4
Northamptonshire	4.6	4.7	2.3	.	-0.1	2.2	.
Northumbria	0.1	0.2	0.4	.	0.0	-0.3	.
Nottinghamshire	8.5	4.7	6.0	8.5	3.9	2.5	0.1
South Yorkshire	6.0	3.0	1.0	4.5	2.9	5.0	1.4
Staffordshire	1.5	2.9	0.1	5.1	-1.3	1.4	-3.5
Suffolk	5.0	5.0	1.3	.	0.0	3.7	.
Surrey	2.8	3.1	1.3	.	-0.3	1.5	.
Sussex	3.0	3.8	2.0	23.6	-0.8	1.0	-20.6
Thames Valley	10.3	6.4	1.9	.	3.9	8.4	.
Warwickshire	2.6	1.6	1.0	7.7	1.0	1.6	-5.1
West Mercia	3.3	2.0	0.4	.	1.3	2.9	.
West Midlands	17.6	5.5	3.7	10.2	12.0	13.8	7.3

West Yorkshire	2.7	3.2	2.4	.	-0.4	0.3	.
Wiltshire	2.9	3.5	1.2	.	-0.6	1.7	.
Dyfed Powys	0.1	0.1	0.1	0.8	0.0	0.0	-0.7
Gwent	1.5	1.1	0.5	.	0.4	1.0	.
North Wales	0.5	0.2	0.2	0.6	0.3	0.3	0.0
South Wales	2.3	1.6	0.8	.	0.7	1.5	.
England and Wales	12.6	3.8	1.7	7.9	8.8	11.0	4.8

Source: Own calculations from *Statistics on Race and the Criminal Justice System 2007/8*, Home Office, April 2009.