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Equity, justice and the crime drop: the case of burglary in England and Wales

James Hunter[*] and Andromachi Tseloni

Abstract

Burglary in England and Wales fell by 67 % between 1993 and 2008/09. This study examines whether this fall was equitable across different population segments (with respect to their socio-economic characteristics) and area types. In particular, it estimates the extent of burglary falls and any changes in the victimisation divide across socio-economic (population) groups taking into account group composition. To this end, it compares their burglary incidence rates based on burglary count models of the 1994 and 2008/09 Crime Survey for England and Wales data. The results show that some socio-economic groups experienced inequitable burglary falls, and relative to others continue to experience burglaries at higher rates after the crime drop than before.

Keywords: Equity, justice, burglary incidence, Crime drop, Victimisation divide

Background

Over the past 20 years sharp, and unexpected, falls in crime have occurred in many countries (Tseloni et al. 2010; Dijk et al. 2012). According to the latest figures at the time of writing, crimes measured by the Crime Survey for England and Wales (CSEW)[1] fell by 62 % between 1995 and 2013/14—and are currently at their lowest levels since 1981 when victimisation rates were first recorded (Office of National Statistics 2014: 3).

The extent of this decline in crime has varied both in relation to different offence types (Office for National Statistics 2014), and different socio-economic groups (Grove et al. 2012). The earliest falls in crime in England and Wales have occurred in relation to domestic burglary: since 1993 burglaries per 1000 households have fallen by 67 % (Office for National Statistics 2014: 59, 67). In general, crime is also concentrated on a small minority of the population (Tseloni and Pease 2005). For example, the prevalence of burglary per 1000 households is between four and eight times higher in the 10 % highest crime risk areas when compared to the 10 % safest areas of England and Wales (Kershaw and Tseloni 2005).

Particular socio-economic (population) groups, such as single adult households or those who are most economically disadvantaged, suffer a disproportional number of household crimes (Wiles and Pease 2001; Nilsson and Estrada 2003; Tseloni 2006).

Within the relevant literature, the unequal distribution of the crime burden across individuals, households or areas is referred to as the *victimisation divide* or *crime inequalities* (e.g. Thacher 2004; Knepper 2012). It is measured by (the ratio of) the victimisation rate of a particular socio-economic group relative to (over) that of another. The greater the difference of this metric from a value of one the larger the victimisation divide. Victimisation divides to date have only been examined for victimisation prevalence or risk (the likelihood of becoming a crime victim), and in relation to income or other indicators of affluence via the relative victimisation risk of the poor compared to the rich (Nilsson and Estrada 2006; Tilley et al. 2011).

Although the recent crime drop literature has started to address aspects of inequality (e.g. Ignatans and Pease 2015) and social welfare (Knepper 2012), no empirical

*Correspondence: james.hunter@ntu.ac.uk
School of Social Sciences, Nottingham Trent University, Burton Street, Nottingham NG1 4BU, UK

[1] Formerly the British Crime Survey.

analyses have evaluated the extent to which the crime drop distribution across different groups within society is equitable, just or fair. This situation mirrors a more widespread absence within the criminology literature regarding the presence of an explicit conceptual and empirical focus on equity and justice in relation to crime levels experienced by different citizens or neighbourhoods. To our knowledge, the issue of distributive justice and crime has been predominantly considered in a conceptual form (e.g. Wiles and Pease 2001)—and the limited number of empirical studies on distributive justice focus on police resource allocation rather than policy outputs or outcomes (e.g. Ross and Pease 2008; Thacher 2011). In marked contrast, empirical evaluations of the distribution of resources and public service outputs have been a significant feature within geographical studies of public service provision since the 1970s (Bramley et al. 2012). Even here, however, the predominant focus has been on healthcare (e.g. Powell 1986; Powell 1990), social care (e.g. Davies 1968; Pinch 1979; Chaney 2013), housing (e.g. Boyne and Powell 1993), or more generically local government finance and service provision (e.g. Boyne et al. 2001; Morgan 2006) rather than crime.

The aim of this paper therefore is to start to address this identified gap within the crime drop literature by examining the extent to which reductions in burglaries in England and Wales between 1993, their peak year, and 2008/09 were equitably distributed between different socio-economic groups and areas. The focus here is on burglary because it is a volume crime with consistent definition and reporting over time, that may affect any household and, among the crime types with generalised population exposure, has exhibited the largest drop in England and Wales (ONS 2014). The most dramatic burglary falls occurred from 1993 until 2004/05, but after that year burglary rates (the number of offences per 1000 households) have not altered significantly. By 2008/09, the end year of the current analysis, rates had not altered significantly for 4 years and therefore any potential burglary burden re-distribution might also have stabilized.

This study examines whether the burglary falls were felt equally by all sections of society, or entailed some positive or negative changes in the victimisation divide (i.e. a respective narrowing or widening of the existing pre-crime drop crime inequalities). In particular, the empirical analysis addresses the following research questions:

- Which socio-economic groups gained most from the fall in domestic burglary rates in England and Wales in absolute terms (*expected number of crimes*) and in relation to others (*victimisation divide*).

- Has the level of equity with respect to the fall in domestic burglary increased or decreased between 1993 and 2008/09?

The paper commences with a review of the limited empirical evidence on the victimisation divide in relation to the crime drop. The discussion then moves on to consider the concepts of equity, justice and fairness as an evaluative framework for assessing the distribution of the crime drop. This is followed by a consideration of the data and methodology used in the evaluation of the equity of the domestic burglary drop. Empirical results are then presented for changes in the incidents of burglaries experienced by different socio-economic groups and areas in England and Wales. A discussion concerning both the level of equity operating in relation to the burglary drop, followed by conclusions including an overview and suggestions for future research are then provided.

Previous studies on victimisation divide trends

There is scarce evidence on the victimisation divide in relation to the crime drop, and where empirical evidence does exist this relates only to trends within England and Wales, Sweden and the US. The majority of these studies primarily examine over-time victimisation divides with regards to affluence—but other characteristics have also gained attention. With regards to regional differences, the rise in property crime incidence rates that occurred during the 1980s in England and Wales reflected changes in crime concentration (number of crimes per victim) rather than prevalence (proportion of victims), and was unequally distributed across parliamentary constituencies. During this period the North and West Midlands experienced massive increases, while in East Anglia and Greater London property crime incidence rates and crime concentration reduced (Trickett et al. 1995). Property crime concentration continued to increase during the period of crime falls (Ignatans and Pease 2015). Since the burglary peak in 1993, owner occupiers, upper/middle income households, and those consisting of up to two adults without children gained most from the burglary drop in England and Wales (1995–2009/10) while burglary victimisation divides increased during this period. Private and social renters, households on less than £20,000 (especially those with incomes under £10,000), and three or more adults households or those with children experienced lower than average burglary drops between 1995 and 2009/10 (Grove et al. 2012). Overall the profile of the 10 % of households most affected by property crime, such as households in rented accommodation or with children, has by and large remained the same over time while their share in property crime incidence rates has increased (Ignatans and Pease 2016).

The picture from the US, where the crime drop occurred earlier than the rest of the world (Dijk and Tseloni 2012), is quite similar. Burglary victimisation fell by roughly 60 % from 1993 to 2010 (Tonry 2014), but the distribution of burglary across income groups became more polarised (Thacher 2004). Burglary inequality between the poorest and the richest quintiles increased up to 120 % from the mid-1970s to 2000 (Thacher 2004). From a socio-demographic perspective, Black American affluent households gained the most: their victimisation divide in relation to same income White households more than halved in the mid-1990s compared to mid-1970s (authors' calculations based on Levitt 1999: 90). By contrast, White poor households experienced the lowest burglary reductions (23.9 %) followed by Black poor households (34.3 %—authors' calculations based on Levitt 1999: 90).

A different story comes from Sweden which experienced a period of relatively stable theft from dwelling and vandalism rates between 1984 and 2001. The victimisation divide between poor and rich with regards to these crimes appeared to have widened based on bivariate analyses. After incorporating additional characteristics in the analysis, thus considering the group composition with regards to gender, age, immigrant background and family type within each income segment, income on its own was not a significant predictor of theft from/vandalism of dwelling in any year examined (Nilsson and Estrada 2003: 669). A tendency towards more equitable crime distribution was in fact evidenced: lone parents, single adult households and immigrants were relatively less victimised by crime against the dwelling in 2001 than in 1984 (Nilsson and Estrada 2006).[2]

To our knowledge (Nilsson and Estrada 2003; Nilsson and Estrada 2006) and (Thacher 2004) are the only studies that examine the victimisation divide controlling for group composition. These studies consider in addition to income up to four other characteristics: gender, age, immigrant status, marital status or household composition, employment, and area type. As evidenced in the formers' work, ignoring group composition may lead to false inferences and spurious associations. In addition to the focus on the crime drop in relation to equity, justice and fairness, this is a further aspect that the current work expands upon.

Equity, justice and the crime drop
Should citizens and neighbourhoods equally benefit from a crime drop, or is it more important for those individuals/areas blighted by crime to enjoy a greater reduction in victimisation levels? The answer to this question essentially lies in our conception of distributive justice i.e. what constitutes a fair allocation of resources, policy outputs and/or policy outcomes across, and within, different socio-economic groups (or areas)? In considering the nature of distributive justice, Rawls (1999: 13) argues that "social and economic inequalities, for example inequalities of wealth and authority, are just only if they result in compensating benefits for everyone, and in particular for the least advantaged members of society". For Rawls, therefore, inequalities in the crime drop experienced by different groups in society (or areas) might be argued to be justified if those individuals or areas experiencing the greatest level of crime enjoyed disproportionately larger decreases in levels of victimisation.

What is meant by (distributive) justice, and the related concepts of equality and fairness, is however open to significant conjecture—and is not helped by the use of these concepts in an interchangeable fashion despite constituting in turn specific conceptions of fairness, justice and equality. In response to varying patterns of victimisation (Osborn et al. 1992; Tseloni 2006), scarce resources are normally targeted at high risk individuals and neighbourhoods. Whilst this approach contains an inherent policy logic, it is also endorsed by politicians, policy-makers and citizens alike because it adheres to societal expectations concerning the 'fairness' of responses to crime. More specifically, this match-up between resources and crime levels is deemed to be fair because it conforms to expectations concerning the extent to which social need (i.e. level of risk, victimisation or fear of crime) drives the allocation and distribution of crime reduction resources and initiatives. Need however is merely one of many allocative criteria including inherent equality, valuation of services in terms of demand and supply, inherited rights, merit, contribution to the common good, actual productive contribution, and efforts and sacrifices that may be employed in distributing public resources and services (Harvey 1973: 100). Furthermore, need has become so embedded as the dominant allocative criterion, that any distribution of resources or service outputs that does not match the distribution of need across individuals or areas is identified as constituting a de facto 'unfair' outcome.

Fairness is often equated as being synonymous with ideas of equality and justice (Hay 1995). Equality, however, is a specific conception of justice concerned with the distribution of resources, service outputs and outcomes. If politics is concerned with "who gets what, when and how" (Lasswell 1936), then equality in the guise of distributive justice can be defined as "who gets what, where

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[2] During the same period however violent victimisation inequalities aggravated in Sweden (Nilsson and Estrada 2006).

and how" (Smith 1974: 289). Furthermore, equality can relate to:

- Equality of opportunity or access (i.e. all individuals have the same opportunity to access the resources, information and public services required to respond to their circumstances);
- Equality of processes (procedural fairness) (i.e. all individuals are treated equally in determining their entitlement, or otherwise, to public resources and services);
- Equality of outputs (i.e. all individuals in the same circumstances receive a level of resources and services which is in proportion to the scale and intensity of their need, merit or rights);
- Equality of outcomes [i.e. the consumption of resources and public services results in all individuals or areas being completely equal (formal equality), or reduces the gap that exists between rich and poor individuals/areas (substantive equality)] (Le Grand 1983: 14–15; Hay 1995: 501–503).

These different conceptions of equality imply different types of policy goals, and require different combinations of policy instruments if they are to be realised. It is also important to recognise that in linking equality to notions of justice, the means by which this is achieved are as important as the outcome: "a just distribution, justly arrived at" (Harvey 1973: 98). Social justice can be understood as the mechanism by which these alternative claims on resources, or opportunities, by competing sections of society or areas are resolved—and the outcomes arising from this allocative process can be justified to members of society.

In relation to distributive justice and the analysis of the domestic burglary crime drop presented here, we are interested in equality of outcomes. Formal equality would require the attainment of a situation in which the rate of burglary incidence (measured as number of crimes per 1000 households) was equal across all individuals or areas as a result of crime reduction measures. However, given that the causal factors in relation to both demand/opportunity and protection of property are not evenly distributed across individuals or areas, this is an outcome that is unlikely to be attainable in practice. More importantly, we are concerned here with the *extent* of change rather than the actual level of domestic burglary. To this end, our attention will focus upon substantive equality i.e. reducing the gap between individuals and areas experiencing high and low levels of victimisation. This outcome requires a crime drop distribution whereby high crime individuals/areas witness a greater level of reduction in victimisation than those experiencing lower incidents

of burglary. The majority of empirical studies concerned with distributive justice focus upon *horizontal equity* which specifically refers to a form of distributive justice in which resources and/or policy outputs are distributed proportionally across social groups or neighbourhoods on the basis of an agreed criterion (Lucy et al. 1977). Conventionally this criterion is social need, but it may equally be one concerned with notions of desert, rights or entitlement. Horizontal equity is thus concerned with equality of *outputs* not outcomes. In the context of evaluating the crime drop, we are concerned with the concept of *vertical equity*: "the unequal, but equitable, treatment of unequals" (Mooney and Jan 1997: 80) as an evaluative criterion i.e. different levels of reduction in victimisation (the unequal) amongst those individuals or areas experiencing different levels of crime (the unequals).

Methods

The equitable nature of burglary falls in England and Wales is investigated here via a comparison of (relative) burglary incidence across population groups with respect to a large set of household/area socio-economic attributes between 1993 and 2008/09. These are based on statistical models of burglary incidents (counts) from the respective 1994 and 2008/09 CSEW sweeps.

Data

The CSEW is a national survey representing the adult population (aged 16 or over) living in private accommodation in England and Wales. It assembles a wealth of factual information on crime and related experiences of respondents, their households, area of residence, and routine activities which may all affect their crime exposure, and generate inequalities in crime distribution. The survey, which employs cross-sectional stratified random sampling, has been running since 1982 intermittently in the 1980s and 1990s and since 2001/02 with annual continuous sampling of double the sample size of the earlier sweeps (see Table 1 later). Despite these changes the CSEW enjoys consistent high response rates of roughly 78 % (Jansson 2007).[3]

The 1994 and 2008/09 CSEW sweeps used here refer to burglaries that occurred during the calendar year 1993 and the financial year 2008/09, respectively. A considerable number of burglaries within each year occurred at the same households with respective repeat burglaries rates of 41 and 45 %. This slight increase in the already high rate of repeat burglaries during the crime drop comes

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[3] For detailed information about the CSEW data, please, see the relevant ONS publications as well as archived Home Office publications. A short but complete history of the survey, its scope and uses to date is provided by (Flatley 2014). For a comparison of the CSEW with other national crime surveys please see (Tseloni et al. 2004) and (Hough and Maxfield 2007).

as a surprise and dictates analysing the entire distribution of burglary counts rather than the victim/non-victim dichotomy. The current study examines the relative drop and victimisation divide changes through the lenses of crime counts per 1000 households or incidence rates. This crime measurement is made up by the number of victims and the number of crimes per victim, and therefore entails repeat victimisation.

Analytical strategy and variables

The research questions of this study are addressed by comparing the estimated number of burglaries between 1993 and 2008/09 across a large number of comparable socio-economic population characteristics drawn from the routine activities theory (Felson 2002). For each year examined the *number of burglaries* or *burglary count* per household, also termed *burglary incidence*, is the dependent variable (DV) with values ranging from 0 to 11 per sampled household. This has been modelled via the negative binomial regression model which generally is the most appropriate model for counts with overdispersed values.[4] From a substantive viewpoint the negative binomial distribution reflects the theoretical explanations of repeat victimisation which, as seen earlier, is extensive in both years (Hilbe 2011; Tseloni 1995; Tseloni and Pease 2010).

The relative distribution of burglaries across socio-economic groups in 1993 is given in (Tseloni et al. 2004). In order to address the research aims of this work the 2008/09 CSEW burglary count model is comparable with the earlier published results (given data limitations). This analysis allows an investigation of the burglary falls across 37 different socio-economic groups (including region) with respect to the following comparable household and area characteristics which constitute the independent variables (IV) of this study:

- *Ethnicity* of household representative person (HRP, formerly 'head of household'), contrasting non-white to white HPR (demography);
- *Lone parent* status, defined as a household consisting of one adult living with children 16 years old or younger; and *number of adults* in the household identifying households with one, two, or more that two adults (household composition);
- *Tenure* or *occupancy*, defined as living in owned, private rented, or public housing (termed social rented in the UK) accommodation;
- *Household annual income*, indicating households with less than £5000, £5000–£9999, £10,000–£29,999,

£30,000–£49,999, or at least £50,000; and *number of cars* in the household ranging from 0 up to 3 or more (economic status);
- The number of hours a household leaves their *house empty* during a typical weekday is given by never, less than 3, 3–5h, or more than 5 h; and whether the area operates a *neighbourhood watch* scheme (guardianship); and.
- Whether the household lives in an inner city (down town in the US), or non-inner city *area type*; controlling across the nine *regions* of England (with Greater London being separate from the rest of South East) and Wales.

All the above independent variables are categorical or binary and are therefore represented in regression analyses via sets of dummy variables with one category being the base, as will be further discussed in the "Results" section (Maddala 1983: 13–15). In the negative binomial regression model they are examined concurrently in order to avoid false inferences, such as those identified by (Nilsson and Estrada 2003). This point is further explained in the next sub-section. The percentage of the sample with each socio-economic population characteristic across the two data sets, 1994 and 2008/09 CSEW, is given in the first four columns of Table 1 in the "Results" section.[5]

Previous research on victimisation divides trends has examined victimisation risks whilst overlooking repeat victimisation. Repeat burglaries account for a sizeable portion of overall crime rates (Pease 1998) while the crime drop in England and Wales reflects declines in repeats, especially with regards to violence and car crime but less so for burglary (Thorpe 2007). For the above reasons it is important to consider repeat burglaries. This is achieved here from analysing crime counts which encompass, and distinguish between, crime risk (victim/non-victim) and crime repetition (frequency of victimisation).

With the exception of (Nilsson and Estrada 2003; Nilsson and Estrada 2006) for Sweden, and (Thacher 2004) for the US, previous research has examined crime drop inequalities with respect to a single household attribute, most notably affluence. The empirical analysis here controls for group composition via examining socio-economic population group-specific burglary victimisation for households that are identical with respect to any other characteristic. This offers a clearer picture of the

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[4] Indeed the variance exceeds the mean of both burglary counts: The 1993 and 2008/09 mean burglaries of 0.114 and 0.03 are greater than their respective variance of 0.162 and 0.046 (Tseloni et al. 2004: 72).

[5] The remainder from 100 refers to the base attribute of each variable. The sample representativeness is discussed in the respective CSEW Technical reports.

kinds of households in need of crime prevention initiatives.[6]

This study expands on the existing empirical literature on victimisation divide trends during the crime falls (Grove et al. 2012; Ignatans and Pease 2016) via (a) focussing on the expected *number* of such incidents rather than burglary risks across socio-economic groups; and (b) using a methodology that controls for group composition. As a result it identifies the socio-economic groups in need of crime prevention interventions in order to deliver a more equitable distribution of harm.

Results

How much did burglary levels fall for different socio-economic groups—and did the victimisation divide, or group-specific burglary rate in relation to others, fall or rise during the same period? To address these questions the estimated socio-economic group-specific *burglary incidence falls,* and any *victimisation divide* changes from 1993 to 2008/09 with respect to household composition, ethnicity, tenure, affluence, guardianship, and area type controlling for region, are examined relative to a base household in order to measure the extent of a victimisation divide.[7]

Base household

The base household is a single adult without children, of White ethnic origin, without a car, living on an average income (£10,000–£29,999), and residing in the same owner occupied detached or semi-detached house for 11 or more years. This house, which is (almost) never left unoccupied, is located in a non-inner city area of the South East excluding Greater London. The area in which the house is located, however, does not formally operate a neighbourhood watch scheme. The 2008/09 base household has been constructed for comparability with the earlier published work of 1993 burglaries (Tseloni et al. 2004). Most base characteristics in theory should reduce exposure to burglary. The burglary rate suffered by the base household is reflected in the intercept for the statistical models (Johnston 1986: 228–233), and serves as a benchmark for measuring equity and the victimisation divide within each year. The ensuing analysis of burglary incidence divides and changes with respect to a particular characteristic controls for all the other factors in the 'base household'.

Burglary incidence changes with respect to comparable socio-economic groups

The issue of which socio-economic groups gained most from the fall in burglary rates in England and Wales is addressed here via an examination of the estimated population group-specific *burglary incidence falls* from 1993 to 2008/09. Table 1 presents the number of burglaries per 1000 households (with an indication of their statistical significance) and over-time change of burglary incidence rates across socio-economic groups from 1993 to 2008/09. The first row of figures in Table 1 gives the estimated number of burglaries experienced by the base household—which fell by 55 % from 1993 to 2008/09. This decline is lower than the national average fall in domestic burglaries from a dwelling (67 %) because the base household, whilst exhibiting a number of generally crime protective characteristics, does not account for age.[8] The second row of figures in Table 1 indicates that 4.4 and 6.4 % of the CSEW data in 1993 and 2008/09 sweeps, respectively, included ethnic minority households. In 1993 an estimated 76 burglaries occurred in every 1000 such households. By 2008/09 their burglary incidence rate went down to 46 per 1000 non-white HRP households, that is a nearly 40 % fall.

The socio-economic groups with above or below (a) national average burglary falls and (b) those of the base household are now identified from the figures in the last column of Table 1. The only socio-economic group with above national average burglary falls is two adult households, while the following groups experienced steeper falls than the base household: those with £30,000–£49,999 annual income, owning one car, more than two adult households, living in an area which operates a neighbourhood watch scheme and in private rented accommodation. It should be noted here however that the above base burglary drop for private renters is an artefact of private renting being confounded with social renting in the 1994 CSEW.[9]

By contrast, households with weaker burglary falls during the same period are (in ascending order): those leaving their home unoccupied 3–5 h on a typical weekday; living in inner cities; households with non-white

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[6] For instance, when income is the sole predictor of burglary there is a clear victimisation divide between the poorest households and those in middle and high incomes (Nilsson and Estrada 2006; Tilley et al. 2011). However income becomes irrelevant to burglary in models that include a wide range of socio-demographic and economic attributes (Nilsson and Estrada 2006; Tseloni et al. 2004).

[7] Interaction effects among the independent variables included in this analysis were not statistically significant.

[8] For a 48 year old household representative person the fall in burglaries is estimated at 91 % from 0.095 in 1993 to 0.008 in 2008/09. The effect of age does not influence the results on the equity of the crime drop with regards to the other characteristics and therefore it is not discussed further.

[9] In general private renters experience significantly less household crimes than social renters (Tseloni 2006: 216) and therefore the individual reduction in 2008/09 from the 'Renters' collapsed starting point in 1993 is likely to be over-estimated. Indeed the burglary incidence drop from 1993 to 2008/09 for non-owner-occupiers (gauged from re-estimating the 2008/09 model with social and private renters collapsed into a single renting category) is 48.4 %, much lower than that for owner-occupiers or the national average.

household representative person; in council (public) housing; leaving their home unoccupied for over 5 h or less than 3 h; or owning two cars. The results in the last three columns of Table 1 and the previous discussion conjugate that all groups examined here experienced considerably fewer burglaries in 2008/09 than at the time of burglary peaks albeit to a varying degree.

Victimisation divides and their changes

The previous section confirmed that burglary rates fell for all household types of England and Wales from 1993 to 2008/09 without exception. The rate of these falls however varied across socio-economic groups with some households potentially benefitting more than others. This section addresses the issue of how socio-economic groups fared in burglary drops in relation to others. Table 2 gives the victimisation divides (with an indication of their statistical significance) across different socio-economic groups. The third and fourth columns of Table 2 contrast their relative number of burglaries to that of the base household in 1993 and 2008/09, respectively, while the last column gives the change in the burglary incidence gap during this period. Positive (or negative) changes of relative burglary incidence in the last column of Table 2 indicate increases (or reductions) in victimisation divides.

Victimisation divide within each year

The *victimisation divide* or *relative burglary rate* between each socio-economic group and its respective base category is interpreted as follows using the first row of figures in Table 2 as an example. In 1993 non-white HRP households seem to have experienced 9.9 % more burglaries than whites but this difference was not statistically significant. In 2008/09, these households suffered 48.6 % more burglaries than whites denoting a (statistically) significant victimisation divide with regards to ethnicity. Number of adults, which distinguishes single adult households, the base, two-, and more than two-adult households, is a further example of how to interpret Table 2 figures (see 5th and 6th rows). In 1993, two and two or more adult households seemed to experience fewer burglaries (2.7 and 14.5 %, respectively) than single adult ones, but the lack of statistical significance of both relative rates implies that adult household size did not relate to burglary divides in that year. In 2008/09, however, two and two or more adult households experienced significantly fewer (by 32 and 33 %, respectively) burglaries than single adult ones.

Overall lone parents, households in (social or private) rented accommodation, and those living in inner cities suffered most burglaries in 1993. The picture in 2008/09 is quite similar. In fact the socio-economic groups

experiencing disproportionally high number of burglaries expanded slightly from those in 1993 to also include households with non-white HRP and those leaving their home unoccupied 3–5 h on a typical weekday.

Victimisation divide change over time

Victimisation divides remained during the crime drop, but did these widen or narrow between 1993 and 2008/09? The direction and extent of the victimisation divide changes for each socio-economic group is given in the last column of Table 2, with positive (or negative) values denoting widening (or narrowing) of victimisation divides from 1993 to 2008/09, and illustrated in Fig. 1. In particular, Fig. 1 presents victimisation divide changes of each socio-economic group in Table 2 compared to the base household (horizontal axis) from 1993 to 2008/09. To facilitate comparisons and a visual illustration of the information contained in Table 2, the base household is denoted via the horizontal solid thick line (at value 1 on the vertical axis). The distance between each bar and the solid base line indicates the victimisation divide between the respective socio-economic group and the base. The main question here is whether such divides narrowed down or disappeared during the crime drop. In Fig. 1, a greater height of the 2008/09 bar compared to the respective 1993 one indicates widening burglary victimisation gaps—whilst the difference in height illustrates the magnitude of this gap.

The victimisation divide between the base household and almost all socio-economic groups examined here widened between 1993 and 2008/09. For example, non-white HRP households experienced almost a fourfold (3.91, calculated as $[(1.486-1)-(1.099-1)]/(1.099-1)$ from Table 2) increase in the number of burglaries suffered compared to white HRP households. Therefore, as illustrated in Fig. 1, the burglary victimisation divide between households of non-white HRP and the base (white HRP) household widened substantially. Similar calculations reveal the changes in victimisation divides for any other group.

As illustrated in Fig. 1 the burglary victimisation divides widened between single adult households, including lone parents, and others; social renters and owner occupiers[10]; households without a car and those with one car; households leaving their home unoccupied any amount of time on a typical weekday and those

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[10] This also holds for private renters albeit not shown in the Table 2 results as this category was subsumed with social renting in the 1993 model. Preliminary analysis not presented here shows that the burglary victimisation divide between (social and private) renters and owner occupiers widened by 38.8 %, from 1.500 in 1993 to 1.694 in 2008/09 as estimated after collapsing social and private renting categories for tenure.

Table 1 Burglary incidence change across socio-economic groups in England and Wales from 1993 to 2008/09

	Estimated number of burglaries per 1000 households		Percentage change, 1993–2008/09		
	1993	2008/09			
Base household: White household representative person (HRP); non-lone parent; one adult household; owner occupier; no car; annual income of £10,000-29,999; house almost never/never occupied; without neighbourhood watch; South East rural area	69	31	−55.32		

Non-base household and area characteristics with regards to	Sample size (%)[c]				
	1993	2008/09			
Non-white ethnicity of HRP	4.4	6.4	76	46*	−39.59
Lone parents	5.1	4.6	108*	52*	−51.21
Number of adults					
Two adults	54.2	52.2	67	21*	−68.75
More than two adults	16.3	15.4	59	21*	−64.94
Tenure					
Rented[a]/social rented (public housing)	29.5	16.2	104*	59*	−42.77
Rented[a]/private rented		10.1	104*	44*	−57.31
Number of cars					
One car	45.4	42.0	68	24*	−65.13
Two cars	21.6	29.1	54+	27	−49.90
Three + cars	4.6	8.4	61	29	−52.24
Annual income					
Less than £5000	20.0	5.2	71	29	−58.69
£5000–£9999		11.2	71	29	−59.88
£30,000–£49,999[b]	12.3	18.5	87+	30	−65.23
At least £50,000[b]		12.7	87+	40+	−54.41
House empty					
Sometimes[a]/less than 3 h	40.7	33.2	84	42*	−49.37
Often[a]/3–5 h	51.8	19.0	78	55*	−30.20
Often[a]/more than 5 h		36.2	78	40+	−48.65
Neighbourhood watch	24.2	15.7	60	24+	−59.66
Inner city area type	23.0	7.8	100*	63*	−37.24
Region					
North[a]/Northeast	7.3	6.9	113	36	−67.79
Yorkshire/Humberside	10.6	9.0	154*	50*	−67.57
Northwest	13.0	11.4	139*	42+	−70.07
East Midlands	8.1	11.4	86	43+	−49.91
West Midlands	10.0	9.6	114	31	−73.26
East Anglia	4.0	12.7	56	38	−31.54
Southwest	8.7	10.6	85	38	−55.20
Wales	5.3	9.3	91	25	−72.25
Greater London	12.6	8.0	127*	42	−67.03
Number of observations	12,845	39,841			

* p ≤ 0.05; + 0.05 < p ≤ 0.10

[a] In the 1993 model

[b] In the 1993 model 'at least £30,000'

[c] The percentage sample sizes from each socio-economic group for the 1993 data are based on (Tseloni et al. 2004) pp. 77–78

Table 2 Burglary incidence victimisation divides in England and Wales from 1993 to 2008/09

Non-base household and area characteristics with regards to:	Burglaries relative to base household (base household = 1)		Changes in burglary incidence gap relative to base household, 1993–2008/09
	1993	**2008/09**	
Non-white ethnicity of HRP	1.099	1.486*	+3.91
Lone parents	1.556*	1.699*	+0.26
Number of adults			
Two adults	0.973	0.680*	+10.84
More than two adults	0.855	0.671*	+1.27
Tenure			
Rented[a]/social rented (public housing)	1.500*	1.921*	+0.84
Rented[a]/private rented	1.500*	1.433*	−0.13
Number of cars			
One car	0.979	0.764*	+10.23
Two cars	0.780+	0.875	−0.43
Three + cars	0.882	0.943	−0.51
Annual income			
Less than £5000	1.030	0.952	−2.59
£5000–£9999	1.030	0.925	−3.50
£30,000–£49,999[b]	1.266+	0.985	−1.06
At least £50,000[b]	1.266+	1.292+	+0.10
House empty			
Sometimes[a]/less than 3 h	1.213	1.374*	+0.76
Often[a]/3–5 h	1.133	1.770*	+4.79
Often[a]/more than 5 h	1.133	1.302+	+1.27
Neighbourhood watch	0.873	0.788+	+0.67
Inner city area type	1.448*	2.034*	+1.31
Region			
North[a]/Northeast	1.638	1.181	−0.72
Yorkshire/Humberside	2.222*	1.613*	−0.50
Northwest	2.009*	1.346+	−0.66
East Midlands	1.241	1.391+	+0.62
West Midlands	1.654	0.990	−1.02
East Anglia	0.805	1.234	−2.20
Southwest	1.228	1.231	+0.01
Wales	1.314	0.816	−1.58
Greater London	1.838*	1.357	−0.57

The base household and area characteristics refer to a household with: white household representative person (HRP); non-lone parent; one adult; owner occupier; no car; annual income of £10,000–29,999; house almost never/never occupied; without neighbourhood watch; in a South East rural area

* p ≤ 0.05; +0.05 < p ≤ 0.10
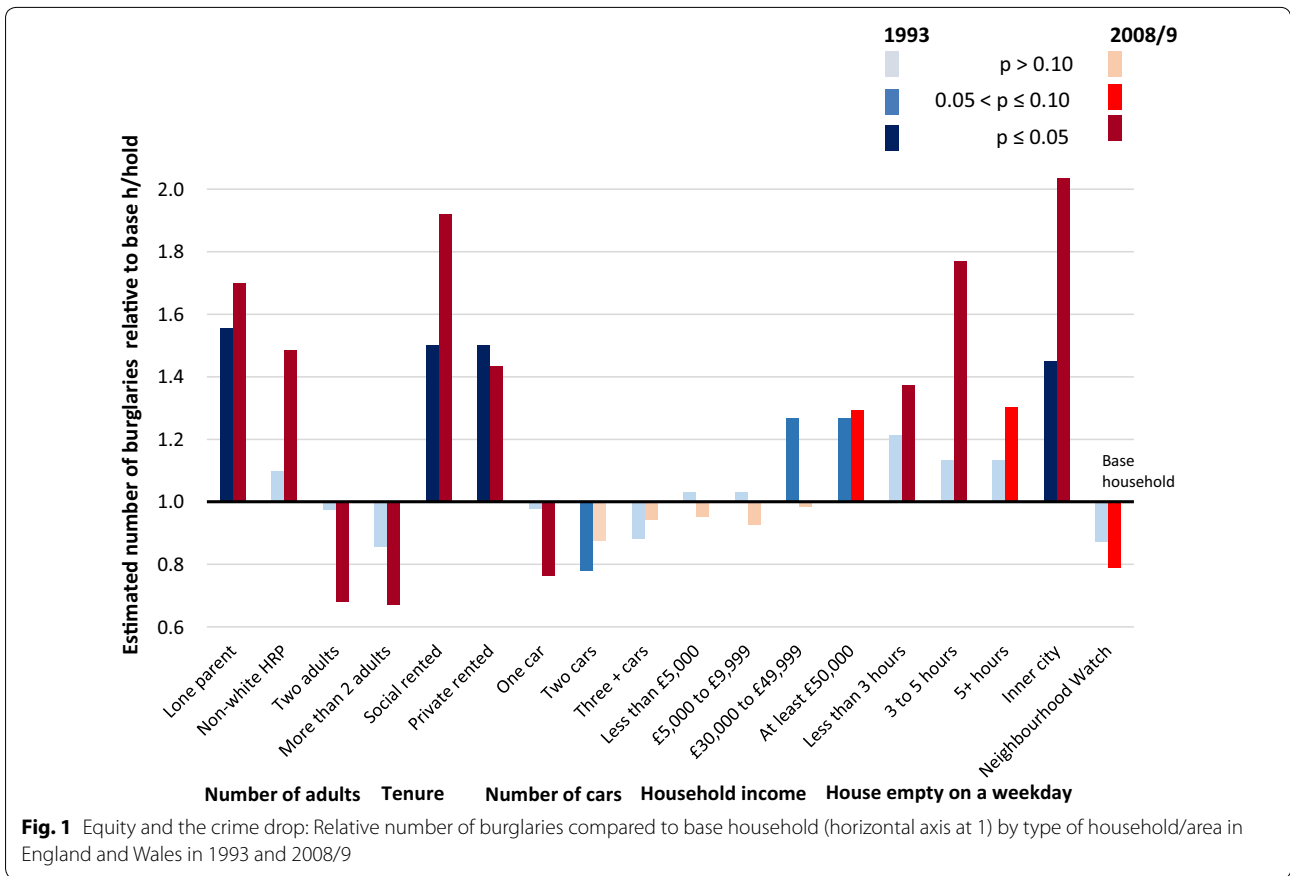
[a] In the 1993 model

[b] In the 1993 model 'at least £30,000'

never leaving the home; households in areas without neighbourhood watch and those with the scheme; households earning at least £50,000 per annum and those on a £10,000–£29,999 annual income to a small extent; and inner city residents and households in rural areas. By contrast, the burglary victimisation divide narrowed down between households without a car and those with two cars; as well as for households earning £30,000–£49,999 per annum and those on a £10,000–£29,999 annual income.[11]

In sum, of the 18 socio-economic groups examined here relative to others, burglary divides widened for twelve, narrowed down for three (effectively one however

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[11] Three or more cars and both low income categories did not significantly differ from the base in either year.

Fig. 1 Equity and the crime drop: Relative number of burglaries compared to base household (horizontal axis at 1) by type of household/area in England and Wales in 1993 and 2008/9

considering data 'health warnings' for private rented and £30,000–£49,999 socio-economic groups, see footnotes 9 and 10 and the "Discussion" section) and remained stable for three between 1993 and 2008/09. Unlike the general picture of widening burglary divides with respect to population socio-economic classifications, burglary incidence rates became more comparable across regions in England and Wales during the crime drop, resulting in a more equal regional distribution.[12]

Discussion

What do the findings of this study mean for equity with regards to the domestic burglary drop in England and Wales? We identified above that in relation to the crime drop and the pursuit of distributive justice, vertical equity requires the achievement of unequal levels of reduction in victimisation amongst socio-economic groups/areas experiencing unequal levels of victimisation. Drawing on the evidence in Tables 1 and 2; and Fig. 1, the achievement of vertical equity therefore requires that the percentage

decline in burglaries between 1993 and 2008/09 should be greatest for those households and areas enduring more burglaries in 1993 relative to the base household.

In 1993, the socio-economic groups with significantly more burglaries relative to the base household were lone parents, those in public (social) or private rented accommodation, households earning at least £30,000 and inner city residents (see third column of Table 2). Vertical equity in terms of burglary falls seems to have been attained for only two household types relative to the base household: those in private rented accommodation and those earning £30,000–£49,000 (see last column of Tables 1 and 2) and Fig. 1. Both findings however may be an artefact of these groups being collapsed with public (social) housing and earning at least £50,000, respectively, in the 1993 CSEW. Furthermore, in 1993 two car households had significantly less burglaries than the base (no car) household (third column, Table 2). Between 1993 and 2008/09 the latter enjoyed a greater burglary drop in comparison to the decline experienced by two car households (last column, Table 1). Therefore households without car (base) experienced vertical equity in burglary falls relative to households with two cars, as illustrated in the narrowing of the respective burglary incidence gap

[12] The current analysis does not formally test the statistical significance of the burglary falls or the changes in burglary incidence gaps (last column of Tables 1 and 2) but the large values strongly indicate statistically significant falls across socio-economic groups.

between 1993 and 2008/09 in Fig. 1 (see also last column, Table 2)[13].

With the above exceptions, all socio-economic groups heavily burdened by burglaries in 1993 (lone parents, those in public (social) housing, households earning at least £50,000 and inner city residents) experienced inequitable burglary falls compared to the base household, which enjoyed a higher burglary decline than them (last column, Table 1). As a result of these inequitable falls in burglary incidence rates, the level of relative need of these socio-economic groups (measured by the changes in burglary incidence victimisation divide relative to the based household from 1993 to 2008/09, Table 2) increased as follows: for lone parents (+0.26), public (social) housing tenants (+0.84), inner city residents (+1.31) and households earning at least £50,000 (+0.10). This widening of the respective burglary gaps is clearly illustrated in Fig. 1.

Conclusion

A discussion on equity and the crime drop requires examining the changes in *crime incidence* and *victimisation divides* in tandem. Our results on vertical equity and the crime drop illustrate that examining either the change in burglary rates over time or the relative number of burglaries experienced by some households/areas when compared to others in isolation can potentially lead to erroneous assumptions concerning the levels of justice in relation to declining crime rates. Simply focusing upon the increased number of burglaries for some household types compared to others during the crime drop masks the fact that the majority, if not all, experience fewer burglaries than in the past.

All socio-economic population subgroups experienced burglaries considerably fewer times in 2008/09 than in 1993 when the burglary rate in England and Wales peaked. The victimisation divides have however widened during that period. Public or social (or private according to results not presented here, see footnotes 9 and 10) housing tenants, lone parents and single adult households, ethnic minority households, households without a car, inner city residents and those leaving the house empty for any amount of time on a typical day were by comparison to others worse off in 2008/09 than in 1993. These findings corroborate with recent descriptive evidence (Ignatans and Pease 2016). By contrast, in disagreement with previous descriptive evidence the present study shows that more than two adult households

experienced a larger decline in burglaries relatively to single adult households whereas low income itself was not related to burglaries. Indeed, when accounting for group composition, households earning less than £10,000 did not experience a significantly different number of burglaries than middle income (£10,000–£29,999) households in either year, 1993 or 2008/09, and therefore the current study agrees with evidence from Sweden (Nilsson and Estrada 2003).

The present study sought to examine the trends in burglary victimisation divide between 1993 and 2008/09 in terms of vertical equity. To this end, amongst the above socio-economic groups households with significantly higher burglary rates to the base household in 1993—lone parents, those in public/social (or privately rented) housing, inner city residents, and very marginally households on an annual income of £50,000 or more—experienced a drop in burglary levels that is unjust relative to others. By contrast, two car households with significantly less burglaries than the base (no car) household in 1993 experienced a lower burglary drop than the latter. Therefore households without a car enjoyed vertical equity relative to those with two cars.

This is the first empirical study that (a) addresses equity and justice in relation to the crime drop (using burglary as a case study); (b) examines relative victimisation incidence rates; and (c) controls for group composition. As such it warrants improvements for expanding and fine-tuning such over-time comparisons for informing theory and crime prevention policies. Future research should investigate equity and justice during the fall of other crime types, such as violence or theft from person, both nationally and internationally. Findings should ideally be drawn from series of empirical models of annual crime counts over individual and area characteristics in order to map year-on-year equity and justice changes (along with crime prevention provision given such data availability) over annual crime rates changes. This study is a first step, and its innovative approach has a direct bearing on practical policy interventions.

Past preventive efforts that targeted repeat burglary victims succeeded in reducing burglary rates overall without evidence of displacement to other or neighbouring targets (Forrester et al. 1990; Guerette and Bowers 2009). The drop in crime rates has followed closely the falls in repeat crimes rather that single victimisation trajectories in England and Wales but the evidence for repeat burglary trends is inconclusive (Tseloni et al. 2010: 385). The current finding that despite such generalised burglary falls some household types were relatively more burdened by burglaries in 2008/09 than 15 years prior to 2008 offers new insights of theoretical and practical significance.

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[13] Similar relative burglary falls can be observed between households with three or more cars relative to the base (no car) households. Since this finding however is based on non-statistically significant burglary incidence differences between the two socio-economic groups (see Table 2, 3rd and 4th columns) it cannot be reliably interpreted as achievement of vertical equity.

Our results show that the distribution of the crime drop across different socio-economic groups and area types is uneven, but in relation to the issue of justice is inequitable with the exception of households without a car. Those most affected by frequent burglaries are relative to others worse off in 2008/09 than in the early 1990s, before the crime drop. Governments and criminal justice agencies therefore need to take steps to facilitate both a more equal and equitable enjoyment of further reductions in crime levels across different social groups and areas.

How might this be achieved? Research evidence shows that access to security is a crucial factor in explaining the uneven distribution of the crime drop across social groups. The property crime drops which have occurred worldwide are arguably the result of widespread increases in security (Tilley et al. 2011; Dijk and Vollaard 2012; Farrell et al. 2014). Since security is expensive not everybody can afford it and this may explain why the benefit of falling crimes is not felt equally. Therefore mechanisms need to be put in place to provide greater access to effective security measures amongst certain socio-economic groups.

From a policy perspective it offers a great opportunity to transform burglary from a volume crime to a rare (or almost obsolete) crime type via further fine-tuned targeting of those who are particularly vulnerable. In tandem with attention to repeat victims, the focus of current or near future preventive efforts should also fall onto just this handful of increasingly vulnerable socio-economic groups (as described above) since the rest of the population is now minimally affected. Investing resources in the protection of these groups alone via, for instance, technical upgrades of security devices in public (social) housing (Tseloni et al. 2014) and/or creating a network of social guardianship in inner cities presents a plausible and cost-effective route to successful conversion of burglary from volume crime to rare event and finally to a topic of criminological history studies.

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