The Howard Journal Vol 28 No 1. Feb 89
ISSN 0265-5527

Motorcycle Theft, Helmet Legislation and Displacement

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Abstract: Most current theory, which treats crime as an expression of psychological or social malaise, would hold that displacement of offending undermines the value of measures to reduce opportunities for crime. However, a drop of more than 60% in motorcycle thefts in the Federal Republic of Germany, brought about by the introduction in 1980 of fines for failing to wear a crash helmet, was not followed by increases in thefts of cars or bicycles. This may have been because bike or car thefts do not offer a similar combination of costs and benefits for the offender as opportunistic thefts of motorcycles. More generally, it appears that a 'rational choice' perspective on crime is likely to result in more fruitful analysis of displacement.

Advocates of 'situational prevention' (Clarke 1983; Heal and Laycock 1986) encounter particular difficulties in dealing with the criticism that the effectiveness of opportunity-reducing measures is undermined by displacing offenders' activities to other times, places, targets, or types of crime (Reppetto 1976; Gabor 1981; Trasler 1986). Indeed, displacement has often been shown: for instance by the rise in thefts of older unprotected vehicles following the introduction of steering column locks for new vehicles in the United Kingdom in 1971 (Mayhew *etal.* 1976), and by an increase in street robberies after successful action against muggings in the New York subway system (Chaiken, Lawless and Stevenson 1974). These studies, together with a larger number of less conclusive pieces of research, have made it easy for critics to argue that displacement is the inevitable result of opportunity-reducing measures. This is difficult to disprove as the offences targetted by situational measures frequently comprise only a small proportion of the total volume of crime, and, to date, evidence which suggests that displacement is not inevitable is provided by only a few studies: on the introduction of slug-proof parking meters in New York (Decker 1972); of action against prostitution in North London (Matthews 1986); and of detoxification of the British domestic gas supply which led to a substantial decline in suicide (Kreitman 1976; Clarke **and** Mayhew 1988).

A further difficulty for supporters of situational prevention is that most

contemporary criminological theorising favours displacement by treating crime as the expression of deep-seated psychological or social malaise which will result in one type of offending or another irrespective of the impediments. Displacement becomes much less certain, however, if crime is treated - as in recent 'rational choice' accounts (Clarke and Cornish 1985; Cornish and Clarke 1986) - as largely purposive behaviour. Whether or not offending continues to occur in the face of constraints depends on whether the same purposes are served by some other offence without incurring incommensurate risk or effort. This suggests that if displacement is to be predicted, a clear understanding is needed of the constellation of opportunities, costs and benefits attaching to the targetted crimes; displacement is only likely to involve crimes with similar profiles of 'choice structuring properties' (Coqiish and Clarke 1987). To provide a crude example, it is unlikely that brokers no longer able to profit from insider trading would turn their energies instead to mugging or shoplifting which entail different risks and rewards and demand different skills. They might possibly engage in some other form of fraud, but this would depend on the degree of effort and risk involved and, under the 'rational choice' perspective, the former fraudsters might just as likely become model citizens.

The concept of choice structuring properties is employed below in a study arising out of the observation that the introduction of crash helmet legislation, both in England and the Netherlands, led to an unexpected, but marked reduction in thefts of motorcyles. In London, motorcycle thefts fell by 24% on the introduction of helmet laws on 1 June 1973, from 5,280 in the twelve month period prior to the legislation to 3,997 in the subsequent twelve months (Mayhew *et al.* 1976). In Holland, a drop in motorcycle thefts following the introduction of helmet laws in February 1975 was noted in national victimisation survey results: the percentage of people who had experienced a theft fell from 10.0% in 1974 to 6.4% in 1975, with even lower levels in subsequent years (van Straelen 1978). These declines were presumably the result of opportunistic thefts being made more difficult by the need for the thief to have a crash helmet in his possession; otherwise, he would quickly be noticed and be suspected of stealing the motorbike.

The effect of helmet legislation on motorcycle theft in England and the Netherlands was noted almost in passing in the context of broader studies and no attempt was made to see whether any displacement occurred. However a further opportunity to examine the question of displacement is provided by the introduction of helmet laws in some other countries, in particular the Federal Republic of Germany for which highly detailed vehicle theft statistics are available.

Introduction of Helmet Legislation in the Federal Republic of Germany

Helmet legislation was introduced in the Federal Republic of Germany in four stages:

(i) January 1976, covering higher-powered motorcycles (with speeds over 40 m.p.h.); no penalties for non-use;
(ii) July 1978, extended to lower-powered cycles (with speeds over 25 m.p.h.); still no penalties for non-use;
(iii) August 1980, on-the-spot fines introduced;
(iv) October 1985, helmets required for riders of *all* motor-assisted cycles, including those with speeds of under 25 m.p.h.

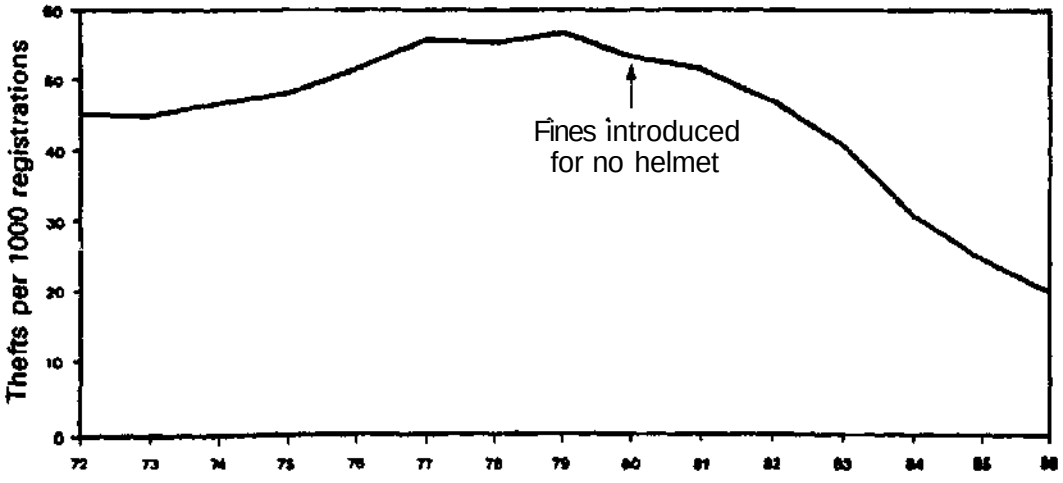
The effect of helmet legislation was examined using police records of motorcycle thefts for the period 1972-1986 (from relevant volumes of *Polizeiliche Kriminalstatistik*, Bundeskriminalamt). Thefts of vehicles of all kinds are generally thought to be well reported — because the owner will value police help with recovery and will want to make an insurance claim in the event of the vehicle not being found. While no comparable data exist for the Federal Republic of Germany, the 1982 and 1984 British Crime Surveys, for instance, show that over 90% of victims of motorcycle theft reported to the police, while in the Dutch victims surveys conducted annually between 1974 and 1978, 94% of victims reported (authors' calculations).

Figure 1 shows number of thefts per 1,000 motorcycle registrations for the period before and after helmet legislation. It is apparent that the requirement to wear helmets had no effect on theft levels until after the introduction of *fines* for non-compliance in mid-1980. Thereafter, thefts began to decrease, with the rate in 1986 being less than 40% of the level in 1980. The drop was a gradual one, presumably reflecting progressively stronger enforcement and/or increasing knowledge of the legislation.

It is unlikely that other factors explain the drop in motorcycle thefts over the relatively short period 1980-1986. There was some decline in the juvenile population in the Federal Republic of Germany (as in other countries), but any effect of this would be registered in a drop of other types of theft, to which juveniles contribute heavily: in fact, all other forms of theft rose by 21% over the period 1980-1986, from 1.86m to 2.26m.

FIGURE 1

Motorcycle Thefts Per 1000 Registrations Federal Republic of Germany, 1972-1986



Improved security behaviour on the part of motorcycle owners is unlikely to explain the drop in thefts (car owners, for instance, were not apparently more security conscious to judge from the constant increase in car thefts). Nor is it plausible that between 1980 and 1986 the Federal Republic of Germany became 'saturated' with motorcycles such that the need to steal decreased: the figures show no increase in motorcycle registrations after 1980.

Displacement and Choice Structuring Properties of Motorcycle Theft

Following Cornish and Clarke (1987), an understanding of the 'choice structuring properties' of motorcycle theft should help to narrow down the search for displacement following helmet legislation to the most likely alternative crimes. Relevant properties to consider, both for motorcycle theft and other theft offences would be: the number of targets, their accessibility to the offender, his possession of necessary skills, planning and resources needed, time required to commit, physical risk, need for violence, likely cash yield per item, need for resale, risks of punishment etc.

For motorcycle theft, these and other properties may be difficult to specify in any detail because of lack of information about offenders' purposes and about their perceptions of costs. Nevertheless, it may be reasonably safe to assume that the perpetrators, most usually young males in their late teens and early twenties, are likely to be stealing motorcycles for four main purposes:[1]

(a) Financial gain (resale, stripping);
(b) Acquisition of a vehicle for extended personal use;
(c) Joyriding (stealing for 'kicks', to show off);
(d) Temporary transportation (for example, late at night when public transport has closed down).

The requirement to wear helmets is unlikely to have a great deal of impact on thefts which are carried out for financial gain or because the thief wants a vehicle for his own long-term use: one would suppose that these involve more planning, and that the thief would have the wit to equip himself with a helmet - a new tool of his trade. Rather, helmet legislation might be expected to have its greatest effect on the more opportunistic offences of joyriding and theft for temporary transportation.

This being the case, what direction is likely to be taken by displacement? For joyriding, the most apparently obvious alternative target would be *cars,* though for youths in particular these may not offer quite the same kind of excitement and, while more plentiful than motorcycles, they may also be better secured and may require more knowledge and skill to operate. Nonetheless, it would clearly be important to examine statistics of car theft for possible displacement.

Cars are also likely to provide the best alternative for those who want a

vehicle for temporary transportation, but for some proportion of cases it cannot be ruled out that stealing a *bicycle* may also be an alternative to stealing a motorcycle. This is especially the case in the Federal Republic of Germany where a large proportion of'motorcycle' thefts are in actuality 'moped' thefts - at least insofar as there were nearly five times more mopeds than motorcycles registered prior to the introduction of fines for not wearing a helmet in 1980.

Arguably, displacement may involve targets other than just vehicles; for example, someone prevented from stealing a motor-bike to get home late at night might mug someone for the taxi-fare instead or might hire a taxi and run off without paying. For most offenders, however, the choice-structuring properties of these offences may be too dissimilar from motorcycle theft to provide realistic alternatives. For instance, they involve direct confrontation with the victim and a greater risk of apprehension. Mugging also entails a willingness to engage in violence and correspondingly more severe penalties. Given that displacement to offences of these kinds is likely to be minimal, it seems reasonable to confine the search for displacement to thefts of cars and bicycles.

Findings on Displacement

In examining the effect of helmet legislation upon motorcycle theft, it was necessary to use *rates* of theft (on the basis of vehicles registered) in order to control for any change in the numbers of motorcycles potentially available to thieves. In looking for evidence of displacement, however, it seems more appropriate to deal in *numbers* of offences rather than rates since the notion behind displacement is that an individual crime suppressed in one way will find its way out in another. In other words, there is an equivalency in displacement which should be unaffected by the number of targets available, or changes in these numbers.

The relevant statistics are presented in *Table 1*. It is apparent that the fall in the number of motorcycle thefts - of which there were about 100,000 fewer in 1986 than in 1980 - is by no means matched by an equivalent increase in either car or bike thefts. Car thefts increased by only 6,000 over the seven year period, which in any case was not dissimilar to the increase in the seven year period before the introduction of fines. As for bike thefts, while there was a marked increase in 1981 and 1982, this was much greater than would have resulted from displacement. (It may reflect wider ownership of bikes as a result of health and environmental concerns). Between 1982 and 1986 recorded bike thefts actually declined so that by the end of the period there were well over 50,000 fewer than in 1980. The fact that around 1983/84 bicycles could no longer be covered by household insurance policies may have contributed to some of the decrease in recorded thefts, though it could also have reflected improved bike security resulting, for instance, from the introduction of 'Citadel'-type locks from the United States; these have registered keys, are made of hardened steel, and permit a bicycle to be locked to railings or other secure street furniture).

TABLE 1

Thefts of motorcycles, cars and bicycles: Federal Republic of Germany, 1980-1986

	THEFTS		
	Motorcycles	Cars	Bicycles
1980	153,153	64,131	358,865
1981	143,317	71,916	410,223
1982	134,735	78,543	453,850
1983	118,550	82,211	415,398
1984	90,008	72,170	376,946
1985	73,442	69,659	337,337
1986	54,208	70,245	301,890

Source: Polizeiliche Kriminalstatistik, Bundesrepublik Deutschland, Bundeskriminalamt (various).

Conclusion

As was predicted, the introduction of penalties for riding a motorcycle without protective headgear had the same unintended result in the Federal Republic of Germany as in England and the Netherlands of producing a substantial drop in the theft of motorcycles. More importantly, there was little evidence of much displacement to the offences which a consideration of the choice-structuring properties of motorcycle theft had suggested were most likely to show compensatory increases: the numbers of car thefts increased only slightly, and bike theft declined markedly (though interpretation of this is somewhat complicated by changes in insurance requirements and possible improvements in bike security). This study therefore constitutes a valuable addition to the other few which show that opportunity-reducing measures are not inevitably undermined by displacement. As such, it helps to shift the burden of proof concerning the value of situational prevention from its advocates to its critics.

However, this and the gas suicide example (Clarke and Mayhew 1988) relate to unintended consequences of actions taken for other purposes (to reduce road deaths and to provide cheaper fuel) and, if situational prevention is to achieve wider acceptance, these examples will need to be multiplied for a greater variety of crimes and preventive measures. A clearer understanding will also be required of the circumstances under which displacement is more or less likely to occur. It would appear that displacement is most likely when some other offence, serving a purpose similar to that of the targetted offence, can be committed by the offender without greatly increased risk or effort: to the extent that these conditions do not apply, displacement is less likely. From the experience of the present study, further testing of this may be facilitated by detailed analysis of the choice structuring properties of targetted crimes.[2]

Notes

[1] It is unknown how much each of these different forms of offending contribute to the figures of motorcycle thefts recorded by the police. However, the fact that the helmet legislation led to more than a 60% decline in motorcycle thefts suggests that perhaps the majority of such thefts fall into the joyriding and temporary transportation categories.

[2] *Acknowledgements:* The search for a suitable data set for use in this study involved enquiries in a number of countries. We needed not only detailed statistics of vehicle thefts, but also of vehicle registrations for the period covering the introduction of helmet legislation. We should like to thank the following for their help and advice: Glenn Pierce (Northeastern University), Alan Williams and Brian O'Neill (Insurance Institute for Highway Safety, Washington), David Clark (Motorcycle Safety Foundation, California), David Nemecek (Federal Bureau of Investigation), Marianne Junger and Jan van Dijk (Ministry of Justice, Netherlands), and Gernot Steinhilper (Ministry of Justice, Hannover). We are particularly grateful to Edwin Kube for supplying the Bundes-kriminalamt statistics from the Federal Republic of Germany and to Derek Cornish (London School of Economics) for his comments on the draft.

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