Crime and Insurance

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1. Introduction

Crime and insurance interact. Insurers are not only affected by crime; they affect crime patterns. Insurers often try to guide their policyholders to take crime preventive measures although such guidance is typically not based upon research as to the measures, if any, which may be effective.

It is only in recent years that criminological thinking has begun to move towards an area which may become useful to insurers in giving an understanding of how crime prevention can be effected by opportunity-reduction and risk-reduction measures. This paper describes the results of some research undertaken within this situational framework to suggest how, in the context of domestic burglary in England and Wales, insurers can better inform themselves about risk factors and the types of information relevant to such an understanding.

The paper also addresses the question of whether - in the context of grave concern over the rising tide of reported burglary - the risk of being burgled in the U.K. has actually increased or whether we are currently experiencing a rise in the proportion of burglaries being reported, coupled with a rise in the value of insurance losses from those burglaries. If the risk of burglary is not increasing - or is increasing at a slower rate than the figures suggest - then the crime prevention implications change.

If the actual risk of burglary is not, in fact, increasing then one possible explanation for the rise in burglary loss figures is insurance fraud. The concepts of insurance fraud and moral hazard are explored in the paper.

2. Crime Control by Opportunity Reduction

The "situational" approach to crime prevention is concerned with the manipulation of the physical factors surrounding the commission of crime to reduce opportunities rather than trying to change the internal motivations - dispositions - of the offender (Clarke, 1980). Whilst insurers have, for many years, been adopting such a target-hardening approach as the basis for their advice to policyholders, criminological theory is now beginning to provide a theoretical framework within which such measures can be assessed (see e.g. Clarke [1980]; Litton [1985]; Pease and Litton [1984]).

Perhaps the best known opportunity-reduction enterprise is the West German finding that since 1963, when certain security requirements came into effect for all cars (old and new), car thefts reduced by 62% relative to 1960, a trend maintained subsequently (Mayhew, Clarke, Sturman and Hough, 1976). In the U.K., too, the fitting of steering column locks to new cars reduced the percentage of new cars stolen (Mayhew et al., 1976). Van Straelen (1978) reports a reduction in thefts of gramophone records after a reorganization which resulted in customers having no direct access to the records (no listening booths, empty record sleeves). He also reports data from a French supermarket indicating a reduction of 33% in losses following the installation of closed-circuit television cameras. The literature of the Association for the Prevention of Theft in Shops (1979) produces congruent information. Van Straelen (1978) describes Dutch data which show that the legislation in 1975 requiring drivers of motorized bicycles to wear helmets cut the incidence of theft of such cycles to one-third of their previous level, presumably by making helmetless thieves conspicuous. Sturman (1976) shows clearly how patterns of bus vandalism were linked to the lack of surveillance by bus company employees in certain parts of buses. Aircraft hijackings have declined as airport security has improved (Wilkinson, 1977). Theft of tobacco and wines and spirits in transit in the U.K. have plummeted after central organizations concerned with security were established by these industries. In the case of the tobacco industry, the losses in 1978 were reduced to one sixth of the value stolen in 1969, adjusted to 1969 prices (Tobacco Advisory Council Security Liaison Office, personal communication). In the case of wines and spirits the change is, if anything, even more spectacular, from £1 million in 1971 to £48000 in 1978, prices not adjusted. Hauber (1978) showed that the frequency of public transport fraud was highest where a self-service system existed with tickets being sold away from the vehicle, where charges were high, where inspection was infrequent, and where fines were low. Strengthening coin-boxes in telephone kiosks reduces thefts from such kiosks (Mayhew et al., 1976). It was also found that the installation of closed-circuit television in selected stations of the London Underground reduced theft in those stations to one-quarter of its former level (Mayhew, Clarke, Burrows, Hough and Winchester, 1979).

In Sweden the number of cheque frauds dropped as a result of the tightening of cheque guarantee regulations in 1971 (Kuhlhorn, 1980). Not all the examples cited above are of the highest methodological rigour. Nevertheless, taken together, they provide impressive evidence that opportunity is relevant to incidence of a variety of offences and that manipulation of opportunity will yield lower rates of crime against targets whose vulnerability is reduced.

3. Insurance as an Instrument of Crime Prevention ?

The provision of insurance can constitute a powerful means by which financial incentives (or disincentives) can be offered for the adoption of crime prevention measures. If insurers choose to enforce such measures then it is surely vital that they are properly informed as to which measures are likely to be effective.

Whilst, at one time, household insurance was profitable, the recent large increase in burglary claims has meant that such policies are now the focus of insurers' attention to attempt to reduce such losses. In London and other European inner-city areas, burglary claims now outweigh all other sources of household insurance claims taken together (e.g. Table 1).

Table 1: Average Claim Amounts - An Insurer's Data (1982)

Rating Factor of House	Average claim amount		All types
	Burglary type	Other type	
	£	£	£
London	665	152	353
Other Inner Cities	563	72	213
Other	266	71	98
2 bed	294	66	102
3 bed	288	76	104
4 bed	529	69	148
5 bed	678	245	280
6 bed	—	81	81
Detached	559	36	160
Semi	247	23	89
Terraced	300	75	111

Insurers are in a particularly strong position to insist on the installation of security measures (Litton, 1982) and have three main opportunities for doing so - when the insurance is first arranged, at any renewal date and after a claim. Surveys of insured properties are conducted by insurers to check levels of security; it is axiomatic within the insurance industry that surveys are an effective way - perhaps the only effective way - of ensuring that security precautions are brought to, or maintained at, an "acceptable" level. If this assumption is correct (and if the underlying belief in the efficacy of physical crime prevention devices is well founded) then, *ceteris paribus*, risks which are surveyed should suffer fewer theft claims subsequent to survey than do equivalent risks which are not surveyed. As Carter (1974) complains, research on the efficacy of the insurance burglary survey appears to be non-existent so a small study was undertaken to test this hypothesis.

The records of a provincial branch office of a major U.K. insurer were analysed to determine the action taken by the insurers at the renewal following a burglary claim; 253 such claims were identified. Policies where a survey was undertaken were contrasted with non-surveyed risks to determine the time from the last burglary claim to the next "event" (either a burglary claim or the end of the data collection period). The specific hypothesis was that a survey would reduce the average number of subsequent burglary claims and would thus be positively correlated with a longer period to the next event. The hypothesis was not supported (for a detailed report of the study see Litton [1985; forthcoming]). This result would in fact suggest that surveys cause subsequent burglary claims. Rejecting that explanation as untenable, leads to the conclusion that surveys are initiated, and burglaries occur, in response to another factor or factors which have the effect of selecting out for survey those houses with a higher probability of further burglary victimisation. Not all the likely variables were available. Various alternatives are explored in Litton (1985; forthcoming) including values at risk, the presence of non-burglary claims (leading towards the insurance industry concept of "accident-proneness") and areal factors.

It is a pity that firm conclusions are not available as the question addressed is a vitally important one. Because of confidentiality constraints, not all relevant information could be extracted from the insurer's records. The availability of information on size, type and location of the house, the value of contents and proportion of valuables (rather than just level of premium which is a poor surrogate) would all have enabled at least some important factors to be controlled for. After the study commenced it became apparent that many of the data did not exist in an accessible form or were kept in such a form as to render them useless for this purpose. If the self-interest of insurers could be awakened so that they became sensitive to the issues involved it might be possible for future data to be held in a form which would better facilitate such investigations. Their appropriate analysis is strongly urged.

Many man-hours are expended by insurers and by the police (and, to a degree, businesses and their advisers) on security surveys. Whilst some research (e.g. Bennett and Wright [1984]; Maguire [1982]; Winchester and Jackson [1982]) suggests that physical security devices may not deter burglars (although other interpretations of their research are possible - Litton [1985]) other studies (Allatt [1984]; Mayhew [1984]) say that they do. The crime prevention activities of insurers are premised on the assumption that such surveys (and the assumptions about the efficacy of security measures which underpin them) are effective (and, for insurers, cost-effective). Given that insurers' records constitute probably the largest untapped continuing database on burglary in the U.K., research on such records (and Litton [1985] merely scratches the surface whilst pointing up some of the potential pitfalls) could advance crime prevention knowledge in the field of physical security as few other approaches could.

4. The British Crime Survey

Other sources of data which can be used to inform insurers' thinking do exist and are underutilised by them. For example the 1982 British Crime Survey (B.C.S.) - a victim survey of some 11,000 households which captured some 500 burglaries and attempted burglaries - contains a wealth of data which can be used to inform crime prevention practice by identifying areal and family characteristics associated with increased risk of burglary. When making recommendations for security improvements, insurers have traditionally either adopted a "broad brush" approach (put locks, bolts and bars on every possible means of access) or have been content to rely on "rules of thumb" tempered by the experience of the individual surveyor. Neither of these approaches is grounded in empirical research, even though it is apparent that insurers lack even basic information about household burglaries. One illustration of such information deficiency, or at least of behaviour as if such information was lacking, may be given. Winchester and Jackson (1982), Walsh (1980) and Maguire (1982) all found that between 60 and 70 per cent of all entries occur through windows and around 50 per cent of all entries are made through a rear window. (Allatt [1974] also found, on the council estate she studied, that windows remained approximately twice as vulnerable as doors.) In Boston, Massachusetts, albeit 14 years ago, Reppetto (1974) found a pattern (door entries 36%; window entries 64%; n=602) almost identical to the pattern illustrated by both Maguire and Winchester & Jackson.

Data from these latter two studies and from B.C.S. are presented in Table 2:

Table 2
How Burglary Occurs - Point of Entry

Point of Entry	B.C.S.	Winchester & Jackson	Maguire
	%	%	%
Door	62	31	38
Window	36	69	62
	n=497	n=382	n=902

Note: B.C.S. data are weighted; n = unweighted n

For comparability with the other studies B.C.S. data in Table 2 are restricted to burglaries (with and without loss) in a dwelling - attempted burglaries are omitted.

The differences between the B.C.S., on the one hand, and Maguire and Winchester & Jackson on the other are both large and potentially significant. According to the B.C.S., the majority of entries take place through a door; according to the other two studies, the majority of entries occur through a window. Litton (forthcoming) presents further analysis of the B.C.S. data which demonstrates that the discrepancy is consistent across burglaries both reported and unreported to the police, attempted burglaries, houses and flats separately and when height of flats above ground level is controlled.

5. Security Levels

General standards of security among households are generally acknowledged as being low (Table 3). The research studies cited, including the B.C.S., are in agreement in finding that, in a depressingly high proportion of burglaries, even where security devices exist they are not used. Table 4 presents the data which show, for example, that 20-25% of both door and window entries are made through open or unlocked doors or windows. Crime prevention would surely take a major step forward if some means could be found of encouraging the use of security devices which are already in place. Given that the police are limited to exhortation could not insurers, with a ready means of motivation (the provision or continuation of insurance) available, play a leading role in such a campaign ?

Table 3
Overall Security Levels

Security Level	Households
	%
<i>Good Security:</i>	
Burglar alarm	3
Mortice deadlock / doublelock on all doors and window locks on all windows	2
Mortice deadlock / doublelock on all doors and window locks on all downstairs windows	2
<i>Partial Security:</i>	
Some doors without mortice deadlock / doublelock and / or some downstairs windows without window locks	66
<i>Poor Security:</i>	
No mortice deadlock / doublelocks and no window locks	28

Source: Winchester and Jackson (1982).

6. Housing Type as a Predictor of Burglary Risk

Maguire (1982) suggests that, despite the lower rewards, publicly-owned housing is proportionately more likely to be burgled than is privately-owned housing. Allatt (1984) assumes this to be so. By contrast the evidence gathered by Bennett and Wright (1984) from interviews with convicted burglars is that public housing is less attractive to burglars. None of these studies provides persuasive empirical evidence on this question. Insurers do not usually enquire about the ownership of the houses they insure nor (with the single exception of the insurer which provided the data in Table 1) do they discriminate between types of houses. If either ownership or type of housing is predictive of different burglary rates then this is information potentially of great use to the insurance industry both for the setting of premium rates and, of more importance for present purposes, for their guidance, and the guidance of the policyholders, about the importance of security. The information should also be of interest in the field of crime prevention generally.

Table 4
How Burglary occurs - Method of Entry

B.C.S. Category	B.C.S. Burglary without loss	B.C.S. Burglary with loss	B.C.S. Attempted Burglary	B.C.S. Total	Winchester & Jackson	Maguire
	%	%	%	%	%	%
<i>Window Entry:</i>						
Insecure	54	18	8	19	22	25
Forced lock/catch	25	33	46	37	32	36
Broke/cut glass	17	45	39	39	46	36
Other	4	4	7	5	—	3
	100(n=28)	100(n=101)	100(n=79)	100(n=208)	100(n=258)	100(n=663)
<i>Door Entry:</i>						
Pushed past	23	2	0.5	4	—	—
Insecure	8	33	1	18	29	34
Key	—	8	0.5	4	6	—
Forced/broke lock	29	27	71	44	29	31
Broke/cut/removed panel	29	25	13	20	36	23
Other	11	5	14	10	—	12
	100(n=37)	100(n=143)	100(n=130)	100(n=300)	100(n=118)	100(n=356)

Notes: (1) B.C.S. data are weighted; unweighted n in parentheses.

(2) Rounding errors may have occurred in recalculation of non B.C.S. data.

Tables 5 and 6 present the results of an analysis of B.C.S. data to establish the risk of burglary for different types of dwelling and different types of house ownership. Rates are shown as percentages. Each figure represents the percentage of houses in each category as a proportion of all houses in that category covered by the survey. The figures include both burglaries and attempted burglaries both reported and unreported to the police. As the data include 67 burglaries without loss, 264 burglaries with loss and 210 attempted burglaries, the number of cases in some cells of Tables 5 and 6 is small. However, information in this detail, and in this form, is not currently available elsewhere so, despite the reservations engendered by the occasional low numbers, the presentation of this data appears important both for the purposes of crime prevention generally and for the information of the insurance industry. As has been argued already, such data could be of value to insurers and its possession might better inform their crime preventive activities. If insurers accept the usefulness of such data, it is hoped that they will, themselves, begin to collect information in this form and perhaps make it generally available for crime prevention use. Even with a total household sample of almost 11,000, the B.C.S. produces only a small number of burglary cases for each sweep. (So far there have been two, in 1982 and 1984; data in this paper are taken from the 1982 Survey.) Insurers (especially if acting collectively) have available a much larger data base in this field than could reasonably be expected from even the most ambitious victim survey and, therefore, subject perhaps to a different set of difficulties in interpretation, could produce statistics based on more adequate samples, especially for some of the rarer cases represented in the Tables. In the meantime, it is hoped that the data in Tables 5 and 6 are useful both in themselves and, more reliably, as indications of the usefulness of gathering information in this form. The useful convention adopted by Winchester and Jackson (1982) of expressing the risk of burglary as an annual risk rate has also been adopted in Tables 5 and 6. The risk rate in Table 5 is the ratio between the number of burglaries and attempted burglaries and the total number of houses in each category. Table 6 provides data in the same categories as Table 5 but restricted to burglaries with loss only (burglaries without loss are omitted as it is unclear whether such offences were included by Winchester and Jackson); the risk rates in Table 6, whilst lower, still show the same relative risk as in Table 5.

The data in Tables 5 and 6 show that the risk of suffering either a burglary or an attempted burglary is twice as high for publicly-owned as for privately-owned dwellings (1 in 16 against 1 in 32: all risk rates are taken from Table 5 for burglaries plus attempts). Burbridge (1984) suggests that, on some public housing estates, risk of burglary has been found to be three, four or even ten times more than B.C.S. national rate for public housing. The differing risk rates for types of housing are also interesting. Bennett and Wright (1984) found from the burglars they interviewed:

“the detached house was preferred most often, followed by the semi-detached house and then by the terraced house.”

By contrast, the B.C.S. produces counter-intuitive data which show that, of these categories, terraced houses are most vulnerable (end-terrace 1 in 21, terrace 1 in 24), semi-detached next (1 in 24) with detached a long way third with risk rates of approximately half (1 in 43) those for the other two types of dwelling.

Table 5
Risk of Burglary (Including Attempted Burglary) Showing Percentage Risk and Annual Risk Rate
by Type of Dwelling and Ownership - B. C. S. Data

Accommodation Type	Owned	Rented From Council	Housing Association	Private Landlord	Other	Total	Risk Rate
Detached	% 2.19	% 2.91*	% —	% 6.94*	% 0.39*	% 2.31	% 1 in 43
Semi-Detached	2.91	5.84	77.59*	7.88	5.43*	4.15	1 in 24
Terrace	3.96	4.84	3.05*	3.38	8.27*	4.25	1 in 24
End-terrace	4.01	5.11	16.86*	10.14*	—	4.78	1 in 21
Maisonette	1.30*	12.96	16.86*	—	42.14*	10.46	1 in 10
Flat	5.36*	8.01	0.84*	7.00	6.15*	6.93	1 in 14
Flat-converted	10.36	15.44*	9.08*	14.31	—	12.14	1 in 8
Flat, not self-contained	1.96*	—	—	1.29*	—	1.30*	1 in 77
Bedsit	—	16.05*	—	15.80*	—	12.32*	1 in 8
Other	4.85*	—	—	—	—	2.76*	1 in 36
Total	3.11	6.35	7.67	7.50	4.15	4.40	—
Risk Rate	1 in 32	1 in 16	1 in 13	1 in 13	1 in 24	—	1 in 23

Notes: (1) Weighted data : unweighted n = dwellings, 10,905; burglaries (including attempted burglaries), 540.

(2) Categories marked * are based on 6 or less cases (unweighted).

Table 6
Risk of Burglary Showing Percentage Risk and Annual Risk Rate
by Type of Dwelling and Ownership - B. C. S. Data

Accommodation Type	Owned	Rented From Council	Housing Association	Private Landlord	Other	Total	Risk Rate
	%	%	%	%	%	%	%
Detached	1.10	—	—	2.22*	—	1.09	1 in 92
Semi-Detached	1.25	2.25	72.44*	2.42*	1.79*	1.80	1 in 56
Terrace	2.05	2.71	1.04*	1.86	2.20*	2.23	1 in 45
End-terrace	1.15	3.18	—	7.29*	—	2.20	1 in 45
Maisonette	—	5.63	5.25*	—	7.15*	4.19	1 in 24
Flat	1.25*	3.39	—	4.44*	4.92*	2.94	1 in 34
Flat-converted	2.53*	2.40*	7.26*	8.05	—	5.40	1 in 19
Flat, not self-contained	—	—	—	1.20*	—	0.81*	1 in 123
Bedsit	—	14.99*	—	6.70*	—	5.91*	1 in 17
Other	2.59*	—	—	—	—	1.48*	1 in 68
Total	1.40	2.85	5.49*	3.61	1.47*	2.02	—
Risk Rate	1 in 71	1 in 35	1 in 18	1 in 28	1 in 68	—	1 in 50

Notes: (1) Weighted data : unweighted n = dwellings, 10,905; burglaries, 264.

(2) Categories marked * are based on 6 or less cases (unweighted).

(3) Burglaries without loss are omitted.

Table 7
Risk of Burglary (Including Attempted Burglary) Showing Percentage Annual Risk
by Type of Dwelling and Area - B. C. S. Data

Dwelling Type	A R E A				Total
	Inner City	Metropolitan Counties	Small Cities	Rural Area	
	%	%	%	%	%
Detached	18.73	4.08	2.51	1.77	2.30
Semi-Detached	15.01	6.13	4.14	2.29	4.14
Terrace	9.92	4.60	3.58	2.84	4.24
End-terrace	21.54	6.00	3.41*	2.13*	4.77
Maisonette	11.19	10.73	14.05*	3.75*	10.46
Flat	9.29	9.81	5.76	1.96*	6.91
Flat-converted	14.81	16.69	23.56*	—	12.14
Flat, not self-contained	1.71*	—	—	—	1.30*
Bedsit	3.51*	15.41*	9.91*	32.62*	12.28*
Other	12.49*	—	—	3.25*	2.77*
Total	10.92 n=102/4499	6.33 n=64/1654	4.35 n=151/2777	2.22 n=223/1940	4.39 n=540/10,870

Notes: (1) Weighted data: n = unweighted n = burglaries / dwellings.

(2) Categories marked * are based on 6 or less cases (unweighted).

Table 8
Burglaries (including attempted burglaries) by Area - B.C.S. Data

Area	Dwellings	Burglaries	Attempted Burglaries
	%	%	%
Inner City	7.8	18.3	15.6
Metropolitan Counties	28.9	37.5	48.2
Other Areas	64.2	44.2	36.2
	100.0	100.0	100.0
	(n=10,905)	(n=331)	(n=210)

Note: (1) Weighted data; n = unweighted n.

(2) Inner cities are defined according to PRAG classification (Webber, 1978).

7. Areal Factors

Areal factors are obviously important determinants of the risk of burglary. Table 7 presents B.C.S. data in the form of percentage annual risk of burglary for each type of dwelling by type of area. The percentage is obtained by dividing the number of burglaries by the number of dwellings in each category. Apart from the smaller categories, the figures show a consistent tendency for risk to increase with degree of urbanisation, for each type of dwelling. A similar story emerges from Table 8 which demonstrates that whilst approximately two-thirds of all dwellings are located outside the large cities, only around two-fifths of all burglaries occur there (see also Hough, 1984). By contrast, the 8% of dwellings in inner cities account for 18% of all burglaries and 16% of attempted burglaries. The metropolitan counties show a similar, but less pronounced, trend. The same tendency is evident from one insurer's national statistics (Table 9).

Table 9
Burglary Claims by Area - An Insurer's 1982 Data

Area	Policies	Burglary Claims
	%	%
London	2.2	4.9
Other Inner Cities	3.6	6.3
Other	94.2	88.8
	n=63,231	n=1,214

The inner city areas, and London, each account for twice the number of burglary claims that would be expected from their proportion of dwellings.

These results are far from unexpected given that the level of crime in the inner cities has been a major source of concern in the U.K. for several years. This appears to be one of the few areas in which the B.C.S. (or other research) data coincides with what insurers consider to be happening in the world; areal data seems to be one of the few types of data either gathered or used by insurers. Inner city areas present their own problems for crime prevention - e.g. a more transitory population, more poor and elderly people - and insurance is both more expensive and less widespread in such areas. However, the figures point the way for a large potential impact on levels of crime if insurers were to develop the incentives for crime prevention which they have available.

8. Values Stolen

To an insurer, it is presumably as important to know the expected monetary loss if a burglary should occur as to know the risk of a particular dwelling's sustaining a burglary (although most insurers appear to lack even this information). If house type and ownership - coupled with the traditional geographical rating factors - are good predictors of burglary risk, then knowledge of such factors should influence the way in which they view their crime preventive efforts. If such a change concentrated the attention and influence of insurers on those dwellings most at risk of burglary then it might secure improvements in crime prevention action where it is most needed.

In an endeavour to provide suitable pointers, the B.C.S. data were analysed to produce the mean loss from burglary (mean loss being the gross value - ignoring insurance recovery and property recovered - of property and cash stolen and damage caused). Table 10 details the figures. Each such mean loss was then multiplied by the percentage annual risk (from Table 6) of burglary for each dwelling type to produce the expected annual average loss, in pounds sterling, for each category of dwelling and ownership type (Table 11).

Some interesting results emerge from examination of the data in Tables 10 and 11. Whilst publicly-owned dwellings have a risk rate (Tables 5 and 6) which is twice as high as that for privately-owned properties, the mean loss (Table 10) and expected annual loss per household at risk (Table 11) figures show the reverse position in that the mean loss is three times, and the expected average loss twice, as high for private housing as for public housing. This reversal might be partly a reflection of the fact that many privately-owned properties will contain more valuable goods than many publicly-owned properties (Bennett and Wright, 1984) and partly a reflection of different styles of burglary - with burglars of public housing, for example, concentrating more on cash - and of different approaches by different types of burglar (see Maguire, 1982).

Semi-detached dwellings have a mean loss figure of twice that for detached dwellings, with an expected average annual loss figure of almost three times as much. This result cannot be an artefact of the inclusion of public housing as the figures for owned properties also demonstrate the same relationships. The finding is counter-intuitive as it would be expected that, other things being equal, a detached house, which would usually tend to be a more expensive property than the equivalent semi-detached house, should stand to lose a greater amount in the average burglary.

Table 10

Mean Loss from Burglary by Type of Dwelling and Ownership - B.C.S. Data

Accommodation Type	Owned	Rented From Council	Housing Association	Private Landlord	Other	Row Mean
	£	£	£	£	£	£
Detached	153	—	—	210	—	157
Semi-Detached	277	59	845	73	—	270
Terrace	182	76	—	83	25	130
End-terrace	569	118	—	595	—	315
Maisonette	—	84	35	—	—	79
Flat	304	56	—	27	—	62
Flat-converted	144	—	—	178	—	152
Flat, not self-contained	—	—	—	—	—	—
Bedsit	—	—	—	36	—	29
Other	—	—	—	—	—	—
Column Mean	220	69	713	149	6	173

Notes: (1) Weighted data: unweighted n = dwellings, 10,905; burglaries, 264.

(2) Figures rounded to nearest pound.

(3) Burglaries without loss omitted.

Table 11
Expected Annual Average loss by Burglary by Type of Dwelling and Ownership - B.C.S. Data

Accommodation Type	Owled	Rented From Council	Housing Association	Private Landlord	Other	Total
	£	£	£	£	£	£
Detached	1.53	—	—	4.67*	—	1.71
Semi-Detached	3.47	1.32	612.12*	1.76*	—	4.87
Terrace	3.72	2.06	—	1.53	0.55*	2.90
End-terrace	6.54	3.75	—	43.36*	—	6.94
Maisonette	—	4.72	1.84*	—	—	3.33
Flat	3.81*	1.91	—	1.22*	—	1.83
Flat-converted	3.64*	—	—	14.35	—	8.23
Flat, not self-contained	—	—	—	—	—	—
Bedsit	—	—	—	2.41*	—	1.71
Other	—	—	—	—	—	—
Total	3.08	1.97	39.14*	5.38	0.08*	3.50

Notes: (1) Weighted data : unweighted n = dwellings, 10,905; burglaries, 264.

(2) Burglaries without loss omitted.

(3) Categories marked * are based on 6 or less cases (unweighted).

It is interesting to note that end-terrace dwellings yield the highest mean loss figure of any type of property (Table 10), and the second highest expected average annual loss figure (Table 11), for both privately and publicly owned properties. Again, the reason for this large difference is unclear.

Nothing in this section should be taken to suggest that higher value burglaries are intrinsically more worth preventing than low-value burglaries (especially when the full range of social costs is taken into account). This is a stance which insurers would unequivocally adopt - although victims, police and policy makers would not necessarily do so.

9. The “Environmental Risk Index”

Winchester & Jackson (1982) identified characteristics of the environment which influence the likelihood of burglary victimisation. They compiled an “environmental risk index” and ascertained how many of the listed factors were possessed by burgled houses compared with non-burgled houses; the burgled houses scored higher (i.e. more risk factors were present) on the index. The index (reproduced as Table 12) contains much risk information of potential interest to insurers and to crime prevention generally and deserves to be better known. The factors in the index are the ones which *in fact* emerged (from a large number of possibilities) as discriminating burgled from non-burgled properties.

Table 12
Variables used to construct the index of environmental risk

1. Situation - located in the country.
2. Isolated.
3. In a location with few (less than 5) other houses in sight.
4. Road type: major town road or village lane.
5. Set at a distance from road in which the house stands.
6. Located on the nearest major road.
7. Housing plot not adjacent to gardens of other houses.
8. Housing plot adjacent to private open space.
9. Access at both sides of the house from front to back on the plot.
10. Not overlooked at the front by other houses.
11. Not overlooked on either side by other houses.
12. Majority of sides of house not visible from public areas.
13. Set at a distance from the nearest house.
14. Road frontage obscured from roadside view.

Source: Winchester & Jackson (1982), p. 39.

Litton (1983) suggested that, if the factors are meaningful - and the broad conclusions of Winchester & Jackson’s study are supported by both Maguire (1982) and Bennett & Wright (1984) - then perhaps both police and insurers should rethink some of their approaches. Even given the modern tendency within the insurance industry towards shorter proposal forms - or even towards dispensing with them altogether - there might be advantages in insurers’ including some environmental-risk orientated questions on such forms. Similarly, there might be merit, both from the insurers’ point of view and from the point of view of

crime prevention generally, in insurers' revising their underwriting guides along similar lines, to draw these factors to the attention of those charged with fixing the rate and terms for the individual risk (the advantages, to the insurer, of obtaining a sharper discrimination are obvious; to the client the end result could be a manipulation of incentives in such a way as to induce him to take action which might prevent a burglary). It also seems important for both police and insurers to make their surveyors aware of these (and other) research findings so that any protection advice offered can be tailored more closely to actual risk in the light of as many factors as can be identified as being relevant.

Litton (1985) used B.C.S. data to establish whether support could be drawn for Winchester and Jackson's environmental risk factors - particularly occupancy, accessibility and the presence of burglar alarms and dogs. (The security behaviour of householders - which is not one of the index factors - was also explored.)

10. Occupancy

Winchester and Jackson (1982) concluded that the most striking characteristic of household burglary is that it usually takes place in dwellings which are unoccupied at the time. Maguire (1982) states that three-quarters of the dwellings he investigated were unoccupied at the time of the burglary; in Boston, Mass., Repetto found that 92% of the dwellings were unoccupied at the time. Bennett and Wright (1984) report that over 90% of the convicted burglars they interviewed said that they would be either conditionally (26%) or unconditionally (66%) deterred by the presence of occupants.

Table 13 presents the results of an analysis of B.C.S. data to show the percentage of households suffering a burglary by length of unoccupancy together with, for comparison, Winchester and Jackson's data.

In respect of day (8.00 a.m. to 6.00 p.m.) and evening (6.00 p.m. to midnight) occupancy, the B.C.S. data agree with the Winchester and Jackson data in demonstrating a clear association between risk of burglary and unoccupancy - the longer a dwelling is left unoccupied the greater its risk of burglary.

Winchester and Jackson report that 80% of the burglaries (reported to the police and probably excluding attempted burglaries) in their survey took place when the dwelling was unoccupied, including 81% of all daytime burglaries and 94% of all evening burglaries. They found that most night-time burglaries tend to occur when the dwelling is occupied; the B.C.S. data similarly show no tendency for night-time burglaries to increase with unoccupancy (it is possible that signs of unoccupancy are less reliable during the night and thus burglars operating at this time are prepared to burgle houses irrespective of whether or not they are occupied).

11. Accessibility

One of the major components of the "environmental risk index", and therefore a factor which distinguished between the houses of victims and non-victims, was the availability and ease of access to the back of the dwellings. The B.C.S. asked respondents how easy or difficult it would be for an intruder to obtain such access; an analysis of the answers to this question is presented in Table 14. For the first three access categories (very easy, fairly easy and a bit difficult) the tendency is in the expected direction with risk of burglary decreasing

Table 13
Risk of Burglary (Including Attempted Burglary) Showing Percentage Risk and Annual Risk Rate by Occupancy:
Day, Evening & Night - B.C.S. Data and Winchester & Jackson Data

Occupancy	Category	D A Y		E V E N I N G		N I G H T		W & J Data
		%	Risk Rate	%	Risk Rate	%	Risk Rate	
Always Occupied	0	3.95	1 in 25	4.57	1 in 22	4.85	1 in 21	—
High Occupancy	1	3.91	1 in 26	3.80	1 in 26	4.75	1 in 21	1 in 191
	2	4.99	1 in 20	3.91	1 in 26	5.17	1 in 19	1 in 193
	3	5.18	1 in 19	7.71	1 in 13	4.75	1 in 21	1 in 115
	4	5.42	1 in 18	9.80	1 in 10	3.37	1 in 30	1 in 78
	5	6.08	1 in 16	23.86	1 in 4	4.76	1 in 21	1 in 43
High Unoccupancy	6	3.88	1 in 26	13.30	1 in 8	—	—	1 in 32
		p < .01*		N.S.**		N.S.***		

Notes: (1) B.C.S. data are weighted; n = unweighted
n = victims, 532, total respondents, 8023.

- (2) * Chi Square = 436.25 dF = 6
** Chi Square = 6.75 dF = 6
*** Chi Square = 2.53 dF = 5

Table 14
Risk of Burglary (including attempted burglary) by Ease of Access to Rear of Dwelling
B.C.S. Data

Access	All Dwellings		Houses (ex. flats)	
	Risk	Risk Rate	Risk	Risk Rate
	%		%	
Very Easy	5.02	1 in 20	4.46	1 in 22
Fairly Easy	4.06	1 in 25	3.91	1 in 26
A Bit Difficult	2.73	1 in 37	2.43	1 in 41
Very Difficult	4.94	1 in 20	4.32	1 in 23
	n = victims, 450; total respondents 6974 * p < .05		n = victims, 381; total respondents 6447 ** p < .05	

Notes: (1) Weighted data, n = unweighted n.

* Chi Square = 8.48, df = 3, p < .05

** Chi Square = 6.48, df = 3, p < .05

as ease of access decreases. The fourth category (very difficult access) presents something of a problem for interpretation as it is as high as the risk demonstrated for very easy access whereas it would be expected that very difficult access would be associated with a lower risk of burglary.

No immediate explanation for this discrepancy is apparent as it is difficult to envisage a combination of circumstances which would produce a set of targets attractive to burglars which, at the same time, had very difficult access to the rear. The possibility was considered whether flats might fall into this category either because, in the case of ground floor flats, they might be deemed by the occupants not to have a back (and, therefore, by definition access to the back could not be anything else but very difficult) or, in the case of flats on upper floors, if the side or sides of the flat away from the common entrance lobby (which, in the absence of a fire escape - which will only usually be found on older flats - will probably be the only door entrance) are inaccessible, access may be viewed as only being possible with climbing equipment of some description. Table 14 therefore incorporates the results of a separate analysis of the B.C.S. data for houses only (excluding flats). Exactly the same pattern of results emerges so, whatever the reason for the discrepancy, it appears to be associated either with houses rather than flats or at least more with houses than with flats.

Despite the inexplicable result for the "very difficult access" category the data are important in that they provide independent verification, on a national basis, that the ease of access to the rear of the premises is a feature which can contribute to the prediction of the burglary risk rate. The range of factors, first propounded by Winchester and Jackson, including the concept of accessibility, have important implications for crime prevention - not least for insurers. Much of the information which comprises the "environmental risk index" is factual and, if it is indeed relevant for predicting the risk of burglary, is the type of information with which insurance surveyors could be briefed so that they could take such factors into account. Such a practice should hopefully lead to better crime prevention measures being taken - in the sense that recommendations should be better tailored to the risk factors associated with the particular dwelling. Such a change in practice is equally applicable to police crime prevention advice; advice (or requirements) from insurers has the advantage that it can be backed with incentives for its implementation (although police advice can potentially reach a larger public). From whatever source the advice comes, better and more relevant crime prevention measures should, in turn, lead to fewer burglaries.

12. The Rising Tide of Burglary ?

It is generally asserted that the risk of being burgled in the U.K. has increased. Certainly the number of domestic burglaries recorded in Criminal Statistics (England and Wales) has increased, from 204,560 in 1972 to 349,692 in 1981; given that the number of households did not increase in a similar proportion, the number of recorded burglaries per household has increased. Insurers are also concerned about the increasing number and cost of household burglary claims. However, it may not be overly cynical to suggest that the real cause of concern to insurers is the rise in burglary *losses*, not the number of burglaries. It is the total of losses which determines the profitability of an insurance class, although number of incidents is also relevant insofar as each claim costs the insurer money to handle. The increase in crime losses on insurers' household accounts has been much more dramatic than the increase in the number of recorded burglaries, even when the loss figure is corrected for inflation.

The assertion that the risk of burglary for the individual household has increased will be assessed. According to one insurance commentator (Companyman, 1977) theft insurers came to an unofficial agreement in the 1960s to try to improve theft protection on commercial properties and not to compete with each other on levels of security.

This consensus lasted for five or six years and, according to Companyman, worked to such an extent that burglaries were displaced from commercial to household insured risks. If this statement is correct then it is important, suggesting, as it does, that insurers can, by concerted action, prevent crime. Figure 1 (with figures adjusted for inflation to a base year of 1980) shows that losses from household crime did overtake those from commercial burglaries in 1969 and that since then the gap between the two types of loss has progressively widened, so that domestic crime losses are currently running at around three times the rate of those for commercial risks. Commercial losses have thus, for the past 15 years, formed an ever-decreasing proportion of total burglary losses.

The very limited data on burglary *losses* available from recent criminal statistics suggest that the same trends are evident. However, when the *number* of burglaries known to the

police between 1970 and 1980 is examined, the same pattern is not evident. The increase in the number of dwelling-house burglaries has not been noticeably faster than that for other burglaries (Figure 2).

Companyman would presumably take the view (as does Maguire [1982:14]) that the increasing gap between domestic crime losses and commercial losses is a continuation of the process he describes: maintaining protection levels on commercial risks yields a situation where new crime sensibly goes to the most unprotected point - the private house.

This view would certainly account for the trend shown in Figure 1. But what about the second graph (Figure 2) ? This shows that both types of crime have increased by roughly the same extent. So burglars are not being frightened away from commercial premises. They still get in. Yet losses from domestic burglaries have increased faster than losses from commercial burglaries. This can only mean that the amount lost in the average household burglary has increased faster than the amount lost in the average commercial burglary. It is very difficult to use criminal statistics to test this proposition over any length of time but it can be said from that source that the average amount lost per household burglary has been higher than the average amount lost per commercial burglary as far back as it is possible to make comparisons (i.e. to 1973) and the size of that difference doubled between 1973 and 1980. It is suggested that this in itself is a surprising finding and certainly goes against the widely-held insurance view that, whilst there may be more household burglaries, an average household burglary yields far less than the average commercial burglary (Litton, 1985).

It seems that the insurance industry is faced with a problem. The average amount lost per household burglary is increasing *even when the figures are corrected for inflation* and there is no obvious explanation for this. One explanation might lie down the insurance fraud route. It is generally asserted that moral standards are falling and therefore claimants might be more tempted to try to make a profit on their claim.

An alternative explanation for the apparent rise in burglaries is provided by the U.K. Government's General Household Survey which, in 1972, 1973, 1979 and 1980, asked a sample of households whether they had suffered a burglary during the preceding 12 months. According to the survey, there was effectively no increase in the risk of being burgled between 1972 and 1980. Hough and Mayhew (1983:14) commenting on these figures say "... the number of burglaries as measured by the B.C.S. [British Crime Survey] was no higher than G.H.S. [General Household Survey] figures for the previous year". Even allowing for the fact that these are two distinct surveys, based on different samples with different sampling error and not asking the same questions, this trend does suggest that there has not, in fact, been an increase in burglaries during those years although it is undeniable that burglary losses have risen (even when the figures are corrected for inflation); what may have happened is that victims have reported to the police a higher proportion of a similar number of burglaries.

Part of the explanation for the rise in household losses also lies with insurers themselves. During the last decade an increasing number of household policies have been issued on a reinstatement-as-new basis. This period of change has coincided with the period during which household claims have escalated. On most claims now, insurers will be faced with paying the cost of a new item whereas, perhaps 10 years ago, the usual settlement would

Figure 1 : British Insurance Association Household and Commercial Crime Losses and Burglary Losses Recorded In Criminal Statistics 1965-1981

Figure 2: Number of Burglaries Known to Police (England and Wales)
1969-1981 (Criminal Statistics)

have been on an indemnity basis. Therefore, even disregarding inflation, claims will now cost more. Most commercial policies, by contrast, will have enjoyed the benefit of the reinstatement basis for many years. It would therefore be expected that household claims payments would catch up with the payments in the commercial market.

Given the figures, what should be done? If it is concluded that total losses have increased because of the size of the average loss rather than an increase in the actual number of losses, the implications are rather different than if one merely assumes that the number of household losses has increased. For example, schemes to make valuables more identifiable become attractive relative to initiatives stressing the making of the house into an impregnable fortress. Thus, if insurers' deteriorating claims experience is a product of a change in the value of each claim rather than in the number of entries into houses, the key to improving claims experience may be to limit the amount stolen once entry has been gained.

Although the comparison of insurance and crime statistics strongly suggests that a loss-limiting approach to domestic burglary has much to recommend it, it should not be advocated at the expense of attempts to reduce opportunities for entry. After all, the absolute number of burglaries is still increasing and to prevent access is to prevent burglary.

Litton (1985) suggests that an additional explanation for the rise in the number of reported burglaries lies in a change in the reporting and recording procedures adopted by the police. The arguments will not be rehearsed here except to note that the U.K. General Household Survey showed no change between 1972 and 1980 in the proportion of victims of burglary reporting the crime to the police. If a similar proportion of a similar number of burglaries is reported, and yet the number of recorded burglaries increases by 50%, it is reasonable to think in terms of a change in recording practice.

It is thus suggested that there has not, in fact, been a dramatic increase in the actual number of burglaries over recent years in England and Wales and that the rise in officially recorded burglaries is to be explained in terms of recording (and perhaps reporting) practices. The most dramatic change has been the increase in losses - which is, it is suggested, the aspect which is central to the insurance industry's current concern about burglary.

13. Insurance Fraud

Anecdotal evidence for the deliberate inflation of insurance claims is readily available and there is some evidence to support the view that burglary claims are invented purely to enable an insurance claim to be made (Litton, 1985; Pease and Litton, 1984). Much of the evidence is unsupported and is doubtless subject to exaggeration and bias but does provide pointers to the behaviour of at least some insurance policyholders. It is thus possible that claim exaggeration and claim invention may be candidates as explanations of the rise in burglary losses in recent years. Such a scenario provides an alternative, but equally plausible, way of conceptualising a major social problem which would require less emphasis on burglary and more emphasis on insurance fraud. If insurance claim exaggeration is prevalent then, whilst the current burglary figures may be reasonably representative of at least part of the problem, there is a separate series of crimes - insurance frauds - which are at present largely missing from official figures. If claim invention is prevalent then part of the current burglary "epidemic" may be non-existent and instead of concentration on burglary,

attention should be focussed on the insurance fraud - a significant incidence of which would mean that the current emphasis on target-hardening is misplaced (or less important than otherwise) given that such precautions will constitute little or no deterrent to the provision of evidence for an insurance claim.

The insurance industry is aware of the potential for fraud (Litton, 1982) and one manifestation of its awareness is its apparent readiness to attribute moral hazard. Whether the industry is sufficiently aware of the actual or possible extent of insurance fraud is less certain.

14. A Study of Insurance Fraud

As a starting point for the investigation of these issues a study was conducted, using questionnaires, of 69 subjects in 5 groups, in an endeavour to obtain an indication of how widespread insurance fraud might be. The study is fully reported in Litton (1985); this paper concentrates on the findings related to claim exaggeration/invention. The following questions were asked:

- (i) "People have been said to invent losses (e.g. burglaries, fires, breakages, car thefts etc.) so as to improve their home (or finances) at the expense of insurance companies. Has anyone you know done this, to your knowledge? If you would care to do so, please amplify".
- (ii) "People have been said to exaggerate losses they suffer in genuine misfortune so as to recover from insurance companies more than they were entitled to. Do you know of any cases of this? If you would care to do so, please amplify".

The responses are summarised in Table 15 which records only those subjects who responded to either question. (Figures for each of the 5 groups are recorded separately; it may be of interest to note that Group C were prison officers and police officers.)

Table 15
Knowledge of Fraud

Group	Losses Invented				Losses Exaggerated			
	Yes	(%)	No	Total	Yes	(%)	No	Total
A	1	(6%)	16	17	4	(24%)	13	17
B	4	(29%)	10	14	5	(36%)	9	14
C	10	(91%)	1	11	10	(91%)	1	11
D	5	(25%)	7	12	9	(63%)	3	12
E	4	(44%)	5	9	6	(67%)	3	9
	24		39	63	34		29	63
Percentage	38%		62%	100%	54%		46%	100%

The differences in responses between the 5 Groups reach statistical significance:

“Invented”: Chi Sq. = 21.25, dF = 4, $p < .01$

“Exaggerated”: Chi Sq = 16.98, dF = 4, $p < .01$

38% of the subjects stated that they knew someone who had invented a loss and as many as 54% admitted to knowing someone who had exaggerated a loss which, even making allowances for the imprecise nature of the study and the small number of subjects, is an important indicator to the possible prevalence of insurance fraud (and certainly for a weakening of personal inhibitions, since others are “known” to do it).

15. Moral Hazard and Insurance Fraud

Moral hazard is a subject about which little formal discussion takes place within the insurance industry although it is, within the industry, a well-known concept. The concept appears to be little known, if at all, outside insurance (and some academic) circles - although the type of attribution to which it refers is probably universal. Received wisdom within insurance holds that, whilst exaggerated claims may be common, invented losses are rare:

“It is my experience that most people are honest in the submission of insurance claims for damage to their property, but they often have inflated ideas of the values”. (Duncan, 1982, p 27)

Insurers have devised a whole range of measures to guard against both dangers although the measures are usually, in fact, directed mainly towards the perceived danger area of exaggerated losses.

The concept of moral hazard imputes to the client:

“a subjective characteristic of the insured that increases the probability of loss”. (Mehr and Cammack, 1976, p 23)

The concept is interesting not only in the context of a psychological view of the ascription process but also because of the linked but separate concept of insurance fraud. Moral hazard is about insurers making judgements; insurance fraud is about the behaviour of policyholders. All people make judgements about other people but the attribution of moral hazard by an insurer is a judgement of potentially great personal consequence for the person judged.

An understanding of both concepts is important. A better knowledge of the nature and prevalence of insurance fraud would aid moral hazard judgements; the knowledge would also aid an understanding of crime figures and the relevance of crime prevention measures.

This section of the paper has suggested different ways of viewing the rise in reported burglaries by arguing that at least part of the rise may be attributable to insurance fraud. Insurance may thus be criminogenic in that, in its absence, at least some of the current total of burglary losses would not exist. Such a conclusion does not militate against the adoption of target-hardening measures to reduce burglaries but does suggest that that approach cannot provide the entire answer. The problem - even as a potential problem - is not currently recognised. Its recognition - coupled with public acceptance of the fact - would be a first step to tackling it.

Insurance fraud is not solely a matter for insurers - it is also a crime - but a substantial part of the burden of tackling it must rest with them.

16. In Conclusion

It is clear, from the diverse, albeit preliminary, data available, that insurers concerned with household burglary losses have a great deal to learn from criminological approaches to burglary. It is evident that the real nature of the problem is not that which it is commonly supposed to be and that patterns of access and loss are not predictable along common-sense lines.

It also seems possible that incentives to invent and/or inflate claims, and the prevalence of such behaviour, may represent a serious threat to insurers' profitability.

The final plea must, therefore, be for insurers to remain abreast of developments in this field and to reflect the data thereby made available in their practice, rather than continue to rely on the hunch and intuition which so often seem to serve in lieu of information.

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