
**AN ANALYSIS OF THE
DECISION-MAKING PRACTICES OF
ARMED ROBBERS**

by

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Abstract: This paper is based on a study of commercial armed robbery in London, UK, involving the analysis of over 1,000 police reports and interviews with 88 incarcerated armed robbers. While official criminal statistics document that over three-quarters of armed robberies in Britain involve real firearms, findings suggested that only around one-third actually do. Robbers rarely reported the availability of guns to be an important factor in their choice of weapon. Together, this implies that simply reducing the availability of real firearms may not be the most effective preventive strategy. Offenders made reasonably accurate predictions with regard to the financial benefits of the crime. Also, their analyses of the potential costs involved in committing armed robbery were found to be neither irrational nor grounded in ignorance of the likely outcome. Furthermore, robbers appeared to tailor their modus operandi with a view to both maximizing the potential financial rewards and reducing the likely risks involved in the crime. Target hardening and other situational

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crime prevention strategies have uses beyond their primary prevention capabilities. For instance, they may aid in the subsequent detection of offenders. This, in addition to further study on the dynamics of robbers' motivations, may lead to an effective broad based approach to the prevention of commercial armed robbery.

INTRODUCTION

Armed robbery can cause physical injury or even death, fear in the community, emotional trauma and, of course, financial loss. Thus, one of the main priorities for researchers who investigate this activity is to provide knowledge that may help in the advance of effective crime prevention strategies. Although commercial armed robbery has received some research attention over the years, progress in preventing this crime has been slow, as evidenced by an escalation in rates of armed robbery around the world. Seemingly, every technological or strategic advance made in the preventive arsenal is matched by sophistication (in a small number of cases) or sheer determination (in a much larger number of cases) on the parts of robbers.

Related to this is the problem that armed robbery is not a specialist crime (Gabor et al., 1987). Generally, it does not require great physical strength (the presence of a weapon replaces this need), intellectual power, technical know-how or even "street wisdom," such as contacts with "middle men." Thus, other than in the most sophisticated robberies, the effort involved would appear to be little while the payout is (relatively speaking) large.

The Robber as Decision Maker

That the actual behavior involved in armed robbery is, in most cases, uncomplicated is not in dispute. However, it is not necessarily the case that the cognitive, social and psychological processes underlying these crimes are equally elementary. For instance, robbers must first decide whether they are prepared to attempt to obtain goods—or, more commonly, money—illegally. They then have to consider robbery to be an "acceptable" and achievable crime. The sorts of learning processes that are necessary for this decision to be reached are not examined here. This

should not suggest that these processes are unimportant; on the contrary, they are crucial to our understanding of robbery. The circumstances and decisions immediately surrounding the robbery *event*, however, are equally significant. Furthermore, an understanding of event-related issues may assist in the development and evaluation of practical preventive measures.

Once the resolution has been made to commit a robbery, a number of important decisions follow, such as how much money is "required" and what kind of target would have to be attacked in order to realize the financial expectations. Crucial factors at this juncture would be the offender's opinions about the kind of weaponry required for the offense—whether a real, replica or "simulated" firearm would be most appropriate—and his preparedness to fire a gun should his threats need to be reinforced at any stage during the robbery. Depending on the target, his ability to organize others to cooperate in such a risky venture may also be significant. These choices would be influenced, in turn, by the offender's access to firearms, his previous experience of armed robbery and his psychological makeup.

The modus operandi may embody a simple structure such as a lone robber with an imitation pistol who walks into a petrol station late at night and demands cash before escaping on foot. Or it may be a more complex scheme involving several robbers, "scanners" to listen into police radio waves, an array of lethal weaponry and two or more getaway cars, with a cash-in-transit van as the target. Whether relatively straightforward or organized and sophisticated, these schemes and the decisions underlying them may provide important indicators of potential preventive techniques (e.g., Feeney, 1986; Harding and Blake, 1989; Kapardis, 1988).

The study of criminal decision making evolved from the rational choice, or economic model of crime (for concise reviews, see Akers [1990], Cornish and Clarke [1986], and Walters [1994]). This perspective, and the preventive strategies that follow from it, is founded on the assumption that offenders are more or less rational in their decision making and seek to benefit themselves by their criminal activity (Gabor et al., 1987). Thus, a better understanding of the cognitive transactions behind their plans of action, and the potential costs and benefits of committing a particular offence, may lead to the cultivation of useful crime prevention strategies. As this approach is based upon a model of the offender as responding to net incentives, it is hypothesized that if the cost-benefit ratio associated with a particular action is changed so that the likely benefits are out-

weighed by the likely costs, then the potential offenders' choices will change accordingly and fewer such crimes will be committed. If the model of the rational offender is not valid, this has important implications for general deterrence. A useful discussion of the theoretical perspective on the deterrence process is contained in Cook (1980).

It is, however, difficult to assess either the extent to which offenders behave rationally, or the circumstances under which an appropriate *modus operandi* is devised, without interviewing them. Such inquiries would focus on how they modify their behavior to take account of their perceptions of the opportunities afforded by different physical environments, and their subjective evaluations of different schedules of reward and punishment.

Some researchers have typified the robber as a carefully calculating rational actor. In Western Australia, for instance, Harding and Blake (1989) interviewed violent offenders, including a number of armed robbers, whom they portrayed as careful decision makers. They found that robbers who had used firearms put some effort into planning their crime and were likely to have investigated in advance the security arrangements of their chosen target. These offenders also claimed to have given some thought to the possibility of being caught and the likely sentence if convicted. Indeed, these researchers portrayed the gun robber as a "top-of-the-range" criminal.

However, other research sheds a different light upon the perpetrators of armed robbery. From the 100 armed robbers he interviewed in Melbourne, AUS, Kapardis (1988) learned that almost two-thirds of the robberies that they committed were carried out within 24 hours of the idea being conceived, with just under one-half being committed within six hours. Almost half had been drinking alcohol prior to the commission of the offence. Similarly, Haran and Martin (1984) found that the majority of the 500 American bank robbers in their sample did little pre-planning.

Feeney (1986) also reported that most of his sample of 113 California robbers, just over half of whom used guns, took a highly casual approach to their crimes. Most claimed to have done no planning at all, and only one in 20 planned in any detail. Generally, the amount of planning increased with the number of robberies committed, although over 60% of the offenders said that they had not even thought about getting caught before they carried out the robbery. Gabor et al. (1987) interviewed 39 convicted armed robbers in Montreal. They discovered that no disguises were worn in three-quarters of the incidents studied, the typical amount

of money stolen was modest, and the most frequent mode of escape was on foot.

Very little research relating to armed crime has been produced by British researchers, with the notable exception of Greenwood (1972), McClintock and Gibson (1961), and Weatherhead and Robinson (1970). Nonetheless, even this work devoted little space to the analysis of robbery. This is understandable, however, because at the time this work was carried out armed robbery was not a significant problem.

Preventing Armed Robbery

Application of the economic model of, or decision-making approach to, armed robbery has led to the development of a number of mainly situational crime prevention strategies. A comprehensive discussion of crime prevention is beyond the scope of this paper, but for recent debate, refer to Pease (1994), and Sutton (1994), and for a good overview of successful preventive techniques, see Clarke (1992). The development of target-hardening devices, training regimes to inform employees of the best course of action in the event of a robbery, and sophisticated surveillance equipment make up an impressive defensive arsenal. Of course, some caution must always be exercised in evaluating the merits, or potential merits, of crime prevention strategies. It has been documented, for instance, that these strategies may incur unintended consequences (see Grabosky chapter in this volume), the most omnipresent of which is "displacement" (e.g., Barr and Pease, 1990). In other words, preventive strategies that appear to have been successful in preventing one crime may simply have led to the perpetration of another one elsewhere, with the result that there is no overall beneficial effect. The different forms that displacement may take have been described by Reppetto (1976) and by Clarke (1983). Pease (1994) presents a more optimistic view of this phenomenon.

Other unintended consequences may stem from the robber's response to the deterrent hardware put in place by his chosen target. For instance, in an attempt to prevent the activation of "pop-up" screens or alarms, hostage taking may be employed. Also, surveillance equipment may increase the robber's use of disguises, thereby increasing the level of intimidation and decreasing victims' subsequent powers of identification. Furthermore, knowledge of practices designed to protect employees, such as advising them to hand over cash without objection (Health and Safety

Executive, 1993), may have served to convince a number of otherwise reticent robbers that it is an easy crime or a "safe bet." Thus, it is not surprising to find that suggestions for robbery prevention often attract considerable criticism (Barr and Pease, 1990).

It may be indicative of the difficulties inherent in promoting straightforward strategies for crime prevention that what efforts have been made have been made largely at reducing the robber's access to his most favored weapon, the firearm. Evidence for this may be found in the vast quantity of literature devoted to discussion about the link between guns and crime. In general, it is believed that should firearms be made less accessible to potential lawbreakers, then all armed crime, including armed robbery, would be dramatically reduced (e.g., Cook, 1983; Gabor et al., 1987; Greenwood, 1972; Wright et al., 1983; Zimring and Hawkins, 1973). The assumption that the availability of firearms is the crux of robbery prevention deserves further attention.

The "Firearms Debate"

A substantial proportion of the publications about firearms and crime focus on the issue of firearms availability and legislation—commonly referred to as the "firearms debate." The U.S. captures the most attention because of its particular problem of violence, use of firearms and widespread availability of lethal weapons (e.g., Berry, 1991; Cook, 1983). While an intense discussion of the various arguments proposed on either side of the firearms debate is beyond the scope of this paper (but see Cook, 1983 and Kleck, 1991), the principal thrust of debate deserves some analysis. Leaving aside the issue of replica weapons use for the moment, the proposition that widespread availability of firearms profoundly influences levels of armed crime entails two quite distinct questions. First, what is the relationship between the availability of *legitimate* firearms and armed crime? Second, what is the relationship between the *illegal* firearms market and armed crime?

The relationship between firearms legislation and the use of legally held guns is an exceptionally complicated one. Overall, there is little conclusive evidence to show that the availability of *legitimate* firearms directly influences their use in crime, or that more restrictive firearms legislation helps to reduce the number of guns falling into the wrong hands (Berry, 1991; Maybanks, 1992; Newton and Zimring, 1969; Polsby, 1994; Robin,

1993; Wright and Rossi, 1986; Wright et al., 1986). Instead, there would appear to be a stronger suggestion that an abundance of *illegal* firearms (an unknown proportion of which will once have been legally held) has helped feed the increasing levels of armed crime in Britain today. However, this assumption begs four fundamental questions. First, is there in fact a large and growing black market in illegal weapons (official statistics fail to accurately identify how many armed robberies actually involve real firearms rather than imitation or simulated guns)? Second, are criminals aware of this illegal pool? Third, do they have the means to access it? And fourth, are criminals *prepared* to use firearms in the execution of their crimes? The link between the availability of illegal firearms and crime appears more tenuous when viewed in this way (Harding, 1993).

Background to the Research

The U.K. Home Office Research and Planning Unit, at the request of F8 Division of the Metropolitan Police Department, commissioned the present research to examine the increasing use of firearms in robbery, together with the apparently widespread and easy availability of guns to those who wish to use them for criminal purposes and the dearth of information about the circumstances in which armed robberies take place. Particular emphasis was placed on the decisions made by robbers.

The research evolved from the analytical realm of rational choice theories of crime. The rational choice models developed by criminologists have not been based upon the assumption that offenders take account of all relevant factors on every occasion when an offence is contemplated (Clarke, 1983). Rather than assuming perfect utility maximization, they have tended to work with the concept of "bounded," or "limited," rationality (Simon, 1955). Thus, a number of factors that are unrelated to the decision to commit an offence can influence an offender's behavior. Such factors may include alcohol intoxication or the desire to stave off the unpleasant withdrawal symptoms associated with certain drug addictions. According to Akers (1990), rationality may also be limited by lack of information (for example, not having an accurate appreciation of the probability of arrest, or underestimating the likely sentence), by values and by other "non-rational" influences.

While examining the factors that robbers *did* take into account in their decision making, it is equally interesting to note the factors that they *failed*

to accommodate. Discounted factors are, after all, as much a component of rational decision making as are positive factors (Harding, 1993). Furthermore, deterrence is based on the assumption that the costs of committing a crime will be weighed with as much zeal as the benefits to be gained. So, it is important to determine whether present attempts at crime prevention are being appreciated by those they are aimed at (and if so, why, in the case of these convicted robbers at least, they have clearly failed to have the desired deterrent effect). Walsh's (1986) discovery of "free-range negative thinking" is interesting in that it suggests that economic criminals do assess the reasons for *not* committing an offence. However, the bulk of the analysis reported by Walsh appears to rest on the practical considerations of the crime rather than on the decision to commit a crime.

The study reported here examined an abundance of factors that may or may not have influenced the robber's decisions for instance, weapon choice and weapon availability, preparedness to employ violence, acquaintance with potential accomplices, perceptions of the degree of difficulty involved in robbing different targets, and, of course, the motivations behind the crime. Perhaps more importantly, the study also explored the interactions among different factors.

This paper summarizes some of these results in the context of two main foci. First, the priority given to the firearms debate and the topic of availability of firearms is critically examined in the light of evidence of rates of firearms use. Using existing sources of data, it is not possible to estimate the frequency with which the firearms described by witnesses were real or imitation, loaded or unloaded. One of the main aims of this study was to investigate the frequency with which guns used in robbery were capable of discharging lethal shots and to find out what factors motivated robbers to choose different types of weapons. Second, the study examined those factors that are relevant to the immediate calculation of whether to commit robbery. How does the robber's assessment of the benefits to be gained from committing the crime (i.e., the financial gain) compare with the costs associated with the crime (such as the risk of arrest, the risk of facing a long prison term and the risk of being shot by police—a risk that, for the British robber, is a relatively new consideration). Factors relating to the decision to commit robbery have received very little research attention, despite the fact that primary preventive efforts are likely to impact most upon this equation.

METHOD

The focus of the study was commercial armed robbery, as opposed to personal or "street" robbery. Initially, information was drawn from police records of all armed robberies and attempted robberies dealt with by the Central Robbery Squad, the specialist robbery team, of the Metropolitan Police in the London area during 1990. All incidents of robbery (including attempts) that take place in the Metropolitan Police District (MPD) and are known, or believed, to have involved a firearm or imitation firearm are subject to special recording procedures. When such offences are reported to the police, a document called a "specrim" (a report of a specially interesting *crime*), that gives a brief outline of where and when the offence took place and the details of any suspects, should be sent within 24 hours from the police division where the offence occurred to the General Registry. This registry is the Metropolitan Police repository for files concerning serious crimes. If the incident involved an attack on a security company, bank, building society, post office, betting shop or jewelry store, then a specrim should also be sent to the Central Robbery Squad (commonly known as the "Flying Squad") at New Scotland Yard.

Using the registry files relating to every recorded armed robbery in 1990, we noted: (1) the date, time, and place where the offence occurred; (2) the type of target attacked and the amount of money and other property stolen; (3) how the offence was brought to the attention of the police and the nature of the police response; (4) whether any injuries were reported and the circumstances under which they were sustained; and (5) the modus operandi of the robbers, including the number of offenders, their gender and ethnic group, whether disguises were worn, the number and type of guns and other weapons employed, how demands were made, if the offence involved a team, the roles played by different team members, the context in which firearms were discharged, and anything known about the provenance of a recovered firearm. Details about the offender were accessed through the National Identification Bureau using each offender's criminal record number. From these files we learned the name, date of birth, occupation, employment status, educational achievements, and marital status of anyone convicted of the offence, along with the dates of all previous court appearances, the nature of the charges brought and the sentences received, and the details of the present robbery charge and sentence.

The purpose of this initial data collection was to provide a cross-sectional picture, or snapshot, of the characteristics and circumstances of the phenomenon of recorded armed robbery as experienced during a single calendar year in London—the police area in Britain where the greatest number of robberies with firearms has traditionally been recorded. Because of its reliance upon data derived from files deposited with the General Registry, most of which had been dealt with by the Central Robbery Squad, the study is undoubtedly biased toward those offences considered by police to be the more serious. In total, data were collected for 1,134 incidents of robbery where a firearm, or what appeared to be a firearm, had been produced by the offender, or where the offender had given the impression through his actions and the contents of written or verbal demands that he possessed a gun, even though one had not actually been seen by witnesses.

With regard to the decisions and calculations of armed robbers, the most valuable information was gleaned directly from the perpetrators of these crimes themselves. Thus, a substantial part of this 18-month study was dedicated to interviewing convicted armed robbers in prison about the decisions they made regarding their crimes and, more importantly, their explanations and evaluations of those decisions.

The analysis of police records yielded 146 potential interviewees who had all, so far as we could tell, been involved in discrete robberies. To avoid the collection of duplicate information in relation to robberies involving "teams," we only approached one member of each "robbery unit" who was still in custody when the fieldwork was being carried out. However, a further 46 of these individuals (including the only female robber in the sample) had been discharged from prison by the time we tried to make contact with them, could not be traced at the prison in which we were told he was located, were unavailable due to medical or administrative reasons or, in two cases, had absconded. Thus, we managed to speak to 100 prisoners, although nine of these interviews were later discarded and five individuals refused to be interviewed. However, in two of these cases it was possible to substitute an alternative team member who consented to be interviewed, resulting in a final sample of 88 completed interviews.

The final interview sample constituted 41% of the total sample of robbers (N=214) recorded as having been convicted of armed robberies in 1990 and for whom records were available. It thus became important to examine the representativeness of the interview sample by comparing the characteristics of this group to the complete sample of convicted robbers.

We found that the two samples varied very little with regard to gender, ethnicity, place of birth, age at which full-time education had been completed and formal educational qualifications. Nor were there any significant differences between the general and interview samples in relation to age at the time of the robbery, employment status, marital status and previous experience with the criminal justice system. Therefore, the robbers we interviewed appeared representative of all known armed robbers with respect to a variety of important sociodemographic and criminological features. Also, when the details of the offences for which the interviewed robbers had been convicted were compared with the overall pattern of incidents of serious armed robberies contained in the total sample of recorded incidents, it appeared that the offences discussed with the interviewed robbers were broadly representative of all those carried out in the MPD in 1990. However, it seems reasonable to postulate that this group of robbers, all of whom were still serving prison sentences some three years after the commission of the crime, contained those who had been involved in the most serious armed robberies.

The interviews, involving one interviewer and one inmate, took place out of the sight and hearing of prison staff. The aims of the study were explained in detail, and prospective participants were assured of total confidentiality. They were told that if there were any questions they did not wish to answer they should simply say so, and that particular line of inquiry would be pursued no further. They were offered no inducements to participate. This strategy proved extremely successful in that 95% of those inmates who were approached in person agreed to be interviewed.

The in-depth, semi-structured interviews were designed to elicit descriptions of the offender's decision making throughout the planning and commission of the robbery. Interviews, of course, do have some general drawbacks. In particular, it is difficult to estimate how closely self-reported data accurately reflect actual "on-the-spot" cognitions, perceptions, decisions or even behavior. This can occur because the interviewee: actively attempts to mislead the interviewer by providing inaccurate details; fails to report aspects of the incident that he has simply forgotten; or inadvertently provides a description of the incident that has been contaminated over time by post hoc rationalizations and justifications.

The potential for inaccuracy generated by the first two problems—misleading the interviewer and forgetting details of the incident—can be substantially reduced by careful wording and validating interview data, wherever possible, against information collected from other sources (Can-

nell and Kahn, 1968; Hessing and Elffers, 1995). For instance, we were able to compare the information obtained from offenders regarding the type of target attacked, the number of accomplices, the amount of money stolen, and previous criminal histories, with the information that had already been collected from police files. A high degree of concordance emerged. Also, the likelihood of being intentionally misled was reduced due to the emphasis placed on the interviewee's privilege to refuse to answer any questions with which he felt uncomfortable.

The third potential source of inaccuracy in self-reported data—being provided with rationalized versions of an event rather than data that truly reflects the offender's perceptions and attitudes at the time—is more difficult to overcome. The tendency of human beings to retrieve information from memory that has been unconsciously altered has been well-documented in textbooks on cognitive psychology, in articles on courtroom testimony, and, more recently, in several sociological, psychological, and criminological studies that have involved the use of interviews as the main research tool (e.g., Abelson and Levi, 1985; Berger and Luckmann, 1971; Cannell and Kahn, 1968; Gabor et al., 1987; Indermaur, 1994; Scott and Lyman, 1968; Sykes and Matza, 1957). On the whole, researchers acknowledge this limitation of the interview as a research method but still regard it as a valuable and sometimes indispensable method of obtaining retrospective information. Moreover, depending upon the purpose of the study, the problem of hindsight rationalization may not be as serious as it first appears. To examine this proposition, it is important to understand something about the way in which human information processing and decision making operates.

First, the study of heuristics in cognitive psychology has revealed that short cuts, including some degree of rationalization, are present *at the time* when decisions are made (Abelson and Levi, 1985; Priest and McGrath, 1970). Distortion may play a role in convincing not only others but the individuals themselves that their behavior is justified (Agnew, 1990). Thus, descriptions of the way in which decisions were reached may be more accurate reflections of the cognitive processes at the time than researchers generally suppose. Related to this is the fact that decisions are regularly based on what has been termed "standing" decisions, or "templates." In other words, the mental labor involved in formulating the answer to the decision problems are carried out the first time the situation is encountered. Thereafter, rules or standing decisions exist that govern and greatly simplify subsequent dilemmas of a similar nature. For in-

stance, the smoker does not go through the process of deciding whether or not to smoke cigarettes each time he or she goes to light one up. In reality, the decision to smoke has been made and each cigarette is smoked on the basis of this predetermined conclusion. Similarly, the robber, unless it is the first time he or she has considered this crime, is likely to be acting in a manner that invokes little contemplation, as the resolution to obtain money in this way has already been made. Of course, it is of interest also to understand why individuals choose to commit robbery in the first place, but it is equally important to appreciate the processes and justifications that allow them to persist in committing this crime.

Second, psychological studies of information retrieval have refuted the proposition that individuals cannot provide reasonably accurate, retrospective protocols to describe their thought processes. Encouraging though this may be, it is necessary to note that the purpose of many of these studies was to examine information retrieval from short-term, or episodic, memory (e.g., Larcker and Lessig, 1983). The type of memories criminologists are interested in are stored in long-term memory. Although long-term memory studies do exist, they have generally been designed to investigate accounts of cognitions during structured problems or neutral tasks, such as solving anagram problems or walking to work (e.g., Ericsson and Simon, 1984). Of course, it is known that events that are themselves pertinent or significant, such as getting married, are generally remembered more clearly than mundane ones, such as walking the dog (Price et al., 1982). Thus, we might expect that the decisions associated with significant incidents, such as getting married or committing an armed robbery, and the factors that prompted them might also be remembered more distinctly. Clearly, this is an area that requires further psychological investigation. In the meantime, many social scientists agree with Agnew (1990), who proposed that "... accounts may be the only way of obtaining accurate information on the individual's internal states and those aspects of their external situation that the individual is attending to" (p.271).

Third, with regard to robbery prevention, the perceptual "inaccuracies" inherent in retrospective interviews are not only useful but might even be imperative. If the purpose of obtaining descriptions of a robber's decision-making operation is to aid in the development of prospective preventive strategies, then it is far more important to understand the rationalizations and justifications that are likely to guide an offender's behavior in the future, rather than those that led to his behavior in the past. Clearly, a robber's current reasoning in relation to committing armed robbery is far

more likely to influence his future attitudes toward this crime, and his future behavior, than the attitude he may have held in the past. For this reason, the use of retrospective self-reports to examine the decision making of armed robbers is an essential methodological tool.

Each interview commenced with a discussion of the way in which armed robberies tend to be reported by the media. After this introduction, the first important issue that needed to be resolved was the number of robberies for which the interviewee had been imprisoned. If he had been convicted of more than one robbery, whichever one had taken place earliest in 1990 (the "index offence") formed the basis of discussion.

The interview was designed to elicit descriptions of the offender's decision making throughout the planning and commission of the offence. For instance, each robber was asked to describe the factors associated with the type of crime he had committed and his choice of target. Subjects were asked to discuss why they had become involved in the commission of an armed robbery in 1990, and what modus operandi they had employed and the reasons behind it. They were questioned closely about their attitudes toward violence and their preparedness to use force, as well as the role of risk factors such as the possibility of coming into contact with armed police officers and the likelihood of arrest. Other topics included the source and factors influencing choice of firearm, a retrospective account of the offender's career, including robberies for which they had never been convicted, and their future intentions, in particular with regard to crime.

RESULTS AND DISCUSSION

Use of Firearms

One of the most important objectives of this study was to establish the degree to which real firearms, capable of discharging live shots that can cause serious injury or death, are actually employed in armed robberies. The official criminal statistics published by the British Home Office suggest that the majority (at least 78%) of armed robberies in England and Wales are conducted with real firearms. The information collected from police files provided a similar picture: 55% of these weapons were seen by witnesses and believed to be real handguns; 12% were seen by witnesses and believed to be real shotguns (all had been "sawn-off"); a further 6%

were known to be real guns (2.4% sawn-off shotguns and 3.6% handguns) as they were recovered afterwards by the police; 11% were known to be imitation guns (ranging from blank-firing replica pistols to rolled-up newspaper in a plastic bag) because they were recovered afterward by the police and found to be incapable of discharging any shot; and 16% were not seen at all by witnesses but the robber's demeanor (such as a protrusion from his pocket or an object in a bag), together with either a demand note (10%) or a verbal demand (6%), gave the victims the impression that he possessed a firearm. Thus, according to police records, 73% of the guns used in robberies in the MPD in 1990 were either known or *believed* to be real.

It is likely that a proportion of the guns reported to be real were in fact imitations. This could be true particularly in the case of handguns because some replica pistols are so realistic that it is difficult, even for firearms experts, to distinguish them from the genuine article on the basis of appearance alone. Thus, it would not be surprising if lay persons assumed them to be real, especially when one considers that they were seen—probably for a matter of seconds—in the highly charged context of an armed robbery.

Because we could tell so little from police records about what proportion of firearms used in robberies had been genuine and loaded, all of the 88 interviewed robbers were questioned closely about the type of gun they had used in the commission of the crime. In four cases the interviewee neither carried anything resembling a gun nor intimated to victims that he possessed a gun, the weapon being carried by an accomplice. In two of these robberies the accomplice carried a real gun, while the other two involved a replica gun. Of the remaining 84 "gun"-carrying robbers, 17% (N=14) said that they had used a real pistol for the commission of the offence, all of which were loaded with live ammunition; 24% (N=20) said that they had used a real sawn-off shotgun for the commission of the offence, of which 14 were loaded and six were unloaded; 37 per cent (N=31) produced a weapon during the offence that bore a close physical resemblance to a real firearm but was, in fact, incapable of discharging live rounds (in all but one of these occasions when a toy shotgun was produced, replica handguns were used); 23% (N=19) produced nothing but intimated from their demeanor, verbal demands, or the contents of a demand note, that they possessed a gun ("simulated" firearms).

Thus, in the light of our findings from interviews with convicted robbers, it appeared that the proportion of real guns used (41%) was just

over half of the estimate (73%) based upon our study of police records. Furthermore, 30% of the shotguns had not been loaded. So, the proportion of interviewees who carried guns capable of discharging a lethal shot was just 33%.

Furthermore, of the 44 interviewed robbers who carried "handguns," which must have appeared real to witnesses, just under one-third possessed a genuine and potentially life-threatening firearm. The same was true for two-thirds of shotgun carriers. While the Home Office Research and Statistics Department report that 68% of robberies in the MPD during 1990 involved pistols, our study revealed that only 17% of the robbers we interviewed carried a genuine loaded pistol. It would appear that the official statistics greatly overestimate the number of real firearms used in robbery.

It is also important to note that in all cases where robbers operated a subterfuge, and intimated to witnesses that they possessed a firearm without in fact producing anything resembling a gun, they claimed that they had been in fact unarmed. In all cases where the robber was truly armed the gun was displayed to victims. Of course, it is possible that robbers who did not use real firearms were more likely to be caught and incarcerated, thereby inflating our estimate of the proportionate use of imitation firearms. However, this is unlikely to have been a major factor as the robberies committed by the sample of interviewees appeared to have been representative of serious armed robberies committed in the MPD in 1990.

When asked why they chose the type of firearm they did, it became apparent that those who chose to use real loaded guns did not do so simply because they were easily available. Many robbers believed a real firearm was an essential tool for the kind of target they planned to raid. They believed that in certain circumstances it might be necessary to fire their guns and, therefore, anything other than a genuine loaded weapon would not be adequate. Almost three-quarters of those who used a replica firearm or who adopted a simulated gun claimed that they could have obtained a real gun but decided not to. The usual reasons why a real gun was not taken was because interviewees felt that if they possessed one, then in certain circumstances they might fire it (a risk they were not prepared to take), or they simply felt that a real gun was not necessary for the type of robbery they were planning to commit. Also, almost all of these offenders said that if given a free choice between a replica and a real gun, they would still have opted for the replica.

With regard to crime prevention strategies that may be employed to reduce the incidence of armed robbery, it is difficult to determine what effect this last finding should have. It would be, of course, neither ethical nor humane to suggest that the victims of armed robbers should presume that the firearm with which they are being threatened (even when no gun is visible) is anything other than real and capable of firing a live shot. It is easy to see that if victims believed otherwise they might be tempted to behave in a manner that could put their lives, and the lives of others, in jeopardy. However, this finding is directly relevant to the firearms debate discussed earlier. It suggests that the emphasis upon the availability of firearms, and the effort to curb the rate of armed robbery through attempting to restrict access to these weapons, should be questioned. This is not to say, of course, that legislation against the sale and possession of firearms should be retracted. Firearm scarcity has other advantages. For instance, it has been shown that the type of weapon, even firearms of a lower calibre, has the potential to prevent fatal injuries and accidental shootings in the home (Cook, 1983; Zimring, 1972).

Satisfactory outcomes could be achieved, however, if effort was also spent upon developing other forms of crime prevention techniques. As Grabosky (this volume) points out, "... crime prevention planners should make an effort to understand the systems in which they propose to intervene, and the processes which they propose to disrupt. They should look beyond the superficial, mechanistic doctrines of opportunity and deterrence, and understand the psychological processes, social organization and economic systems in which target behavior is embedded" (p.). The purpose of the remainder of this paper is to examine one such "psychological process" that relatively few researchers have so far cared to exploit. The first decision that all offenders must undertake, regardless of whether they are contemplating robbery for the first time, is a seasoned offender, is whether to commit the crime at all. To examine the factors that influence this decision may prompt numerous preventive opportunities.

The Rewards of Armed Robbery

The financial benefits of carrying out an armed robbery are not purely dependent upon the absolute amount of cash gained, but are relative to the needs and expectations of the individual robber. The rewards of robbery were, therefore, expected to be dependent upon satisfactory rather

than optimal outcomes. For example, while the sum of £500 may be sufficient to satisfy the immediate needs of a drug addict, it is unlikely to fulfil the requirements of an aspiring jet setter.

To investigate these issues, the robbers were asked to provide three figures: the minimum price (MP)—the minimum amount of money for which they would have been prepared to commit the index robbery); the expected gain (EG)—the amount they personally expected to obtain from the robbery); and the actual profit (AP).

It was hypothesized that the important factors influencing the offender's evaluation would not be the amounts themselves but the difference between the anticipated sum and reality. Thus, the following hypotheses were developed to test the notion that robbers are rational calculators:

- EG would have to be greater than MP for crime to occur.
- If AP was less than EG, the outcome would be viewed as financially unsatisfactory.
- If AP was greater than EG, the outcome would be viewed as financially satisfactory.

In concordance with our first hypothesis, all offenders who had decided upon an MP for which they would have been prepared to commit the robbery expected the index robbery to equal or exceed this value. Had they expected to gain less money than they were prepared to "work for," then as rational decision makers they would not have committed that particular crime at all. Their minimum amounts were, however, quite modest. Twenty-two per cent stated that they would have considered the offence to have been worth carrying out even if they had thought that it would yield less than £500, 19% set between £500 and 1,000 as their minimum. 28% decided on £1,000 to 5,000, while 32% said they required a personal share of at least £5,000 before they would consider becoming involved in such an offence. Furthermore, it was not surprising to find that they generally chose targets that reflected the gains they hoped to achieve. Those with the greatest financial expectations attacked targets likely to yield the highest amounts (such as cash-in-transit vans), while those with less expensive requirements attacked less lucrative targets (such as banks, building societies or stores). But what was, perhaps, more surprising was the accuracy with which they appeared to have "estimated" the *actual amounts* of money *taken* from the different institutions robbed. Analysis of the police files covering the period throughout which these

robbers were active in the London area revealed that their financial - expectations of the targets they attacked were broadly in line with the median annual losses sustained by those different categories of targets. Thus, their expectations appeared to have been based upon a realistic appraisal of the odds.

It was also hypothesised that if the amount of money obtained by the offender exceeded the amount he had expected to receive, then the offence would be regarded as financially worthwhile. Indeed, having exceeded his expectations, the offender would have received a "bonus," or an extra sum of money that he had not known he would obtain. On the other hand, if the amount of money obtained by the offender was below his expected amount, then the offence would not likely be viewed as having been worthwhile.

Indeed, three-quarters of the interviewed robbers claimed to have obtained more money from the robberies than the minimum for which they would have been prepared to commit the crime, and 54% said that their expectations had been equalled or exceeded. So, in over half of the cases studied, the profit obtained from the robbery more than satisfied the offender's needs. Not surprisingly, then, almost all of these robbers evaluated the offence as having been financially worthwhile (aside from the fact that they were eventually caught and punished for their crime). On the other hand, two out of three offenders whose expectations had not been realized claimed that, had they known how small a profit they would make, they would not have carried out the crime at all. It is unfortunate, in retrospect, that those who obtained less profit than they had anticipated but still claimed to be satisfied with the outcome were not questioned further about the source of their satisfaction.

Therefore, although *we* might expect the financial yield of a robbery to be unpredictable, most robbers appeared to be able to make fairly precise appraisals of the likely outcome. Furthermore, they appeared to plan their raids in order to increase the probability that the gain would closely reflect their expectations. In addition to choosing particular types of targets, as discussed above, careful timing was also employed to increase the probability of as large a yield as possible. For instance, almost a quarter of all raids on jewelry stores took place in the month of December, which may be related to the stockpiling of jewelry in anticipation of increased Christmas sales. Some robbers claimed to have timed their crimes to correspond with certain periods, e.g., when financial institutions increased the

amount of money held at each counter in anticipation of the "weekend rush," or on "pension day," before pensioners arrived at post offices.

The Costs of Armed Robbery

Despite the rational consideration the robbers appeared to dedicate to maximizing the potential rewards of the offence, they appeared to put less effort into examining the possible costs incurred in committing an armed robbery. This disregard, furthermore, was not due to any lack of awareness of the potential costs involved. The majority of those interviewed claimed to have been well aware of the sentence likely to be imposed for this type of crime, and almost all were aware of the presence of armed response vehicles in London and of armed police. Further, over 90% claimed to have believed that had armed police chanced upon them during the robbery, there would have been a very high probability that they would have been shot—an event that is, in fact, still an extremely rare occurrence in Britain. Awareness of the risks inherent in the commission of crime is often presented as evidence of the apparent *irrationality* of those acts. On the contrary, such conclusions may merely be indicative of what Walsh (1986) refers to as "differing conceptions of rationality," whereby criminal acts may be regarded as within the realm of rational behavior provided the realization prevails that by its very nature, crime incurs risks and errors thus are an inevitable feature. Even fully "knowledgeable" decisions may come unstuck as a result of the risky and unpredictable nature of many human activities, not least of all criminal ones. Walsh (1986) further points out that rationality does not invariably "work" in the non-criminal world either, where failure tends to result in an acknowledgment of the role of risk as opposed to a denial of rationality prior to the event.

Despite this knowledge of the potential pitfalls of their crime, most offenders claimed to have given little thought to the sentence they could have been facing when planning the crime. Furthermore, most claimed that even if the term of imprisonment they had been likely to receive was twice current levels, it would have made no difference to either their intentions or their modus operandi. Many robbers also claimed that if all British police were armed, their decision would not have been altered. Is this really the behavior of rational decision makers?

It must be remembered, however, that these men were assessing the probabilities of risks, not certainties. If the probability of arrest, a long

sentence or being shot is perceived to be very high, then the costs of committing robbery may well be seen to outweigh the benefits and the crime will not occur. On the other hand, if the probability attached to the risks is perceived to be very low, they may well fail to outweigh the benefits of the crime, making it more likely that the crime would occur. Several studies have shown that while certainty of legal punishment is an effective deterrent, severity of legal punishment is not (e.g., Tunnell, 1992).

Indeed, few of the interviewed robbers believed that there was a high, or even a 50-50, chance of armed police arriving at the scene of the crime in time to either arrest or shoot them. Thus, although the presence of armed police was recognized as a risk, it was regarded to be such an unlikely eventuality that the threat was effectively "neutralised." Also, two-thirds of the robbers felt that the probability of being arrested for the offence had been low, as the speed at which these offences take place made it unlikely that the police would arrive on the scene quickly enough to arrest them. Moreover, believed that after they had left the scene of the crime, their chances of being apprehended diminished sharply. Although 84% of these robbers were, in fact, arrested after they had left the scene of the crime, almost half of the interviewees attested to having committed at least a further five armed robberies for which they had never been convicted. Thus, in spite of their current predicament, this judgment was not, in some cases at least, ill-founded.

Correspondingly, the risk of a long sentence was no deterrent as it was believed to be highly unlikely that things would come to that. Even capital punishment is no deterrent to those who believe "it will never happen to me." The lack of weight given to the risks associated with their crimes weakens the case for deterrent sentences as a strategy for controlling robbery, as steep penalties are unlikely to deter those who do not believe they will be caught (Feeney, 1986). Correspondingly, the interviewed robbers were pessimistic about the deterrent effect of target hardening and tougher penalties. Indeed, Gabor et al. (1987) also found that North American robbers were not as responsive to target security measures as advocates of opportunity-reduction strategies might like to suppose. In addition, several writers—though few as poignantly as Sherman (1993)—have addressed the difficulty of making deterrence work. Of course, even if the interviewed offenders were not deterred, it is not known how many other *would-be* robbers have been dissuaded by such crime prevention strategies. Furthermore, even if opportunity reduction measures have little effect upon the robber's decision to attempt a robbery, they may

result in the attempt being unsuccessful and/or the robber later being caught and convicted (Morrison and O'Donnell, 1994). Indeed, situational crime prevention methods, such as geographical layout of premises, surveillance and other prevention hardware, achieve to some degree all of these objectives. Thus, their installation may lead to an important deterrent effect in the longer term.

Once again we compared the robbers' predictions with the picture provided by the police reports and we discovered that, although subjective, the assumptions made by these robbers were not unrealistic. Given that the police very rarely arrive while a robbery is in progress (2% of robberies or attempted armed robberies in London in 1990), and that clear-up rates for robberies are well below 50% (and for some categories of target, particularly those without photographic security, it is much lower), it would appear that the offenders were making well-founded and rational inferences with regard to the costs associated with armed robbery.

It is of interest to note also that many of the practical aspects of the robbers' modus operandi were not employed merely as a way of maximizing the financial takings (although this certainly appears to have been a secondary consideration, as mentioned earlier), but also served as "risk reduction strategies." The timing of the robberies was often chosen to coincide with the quietest time of the day; targets were approached specifically when empty in order to reduce the number of possible witnesses or "have-a-go heroes" who might attempt to intervene. Some robbers even claimed to have chosen a time when rush-hour traffic would be likely to interfere with the speedy arrival of police. Walsh (1986) recognized a process that is undoubtedly related to the risk-reduction strategies employed here. He described the way in which economic criminals attempt to locate the "window of vulnerability"—the flaws in the "impregnable" security that protects the target. Both processes are not only rational attempts to control the likely outcome but will shape the modus operandi and determine the choices made.

Walsh (1986) also recognised, during his analysis of the victim selection procedures of robbers and burglars, that offenders place a great deal of emphasis on the role of intuition and hunches that may or may not be based on past experience. He found that, even when faced with failure, economic criminals will attribute an unprecedented outcome to bad luck and fatalism. Most of the offenders interviewed for the purposes of this study also blamed their arrest and conviction on bad luck or informants rather than on good investigative policing or their own mistakes. The most

important point about this, however, is that they would have found no reason to alter their perceptions of police effectiveness (which was, anyway, quite negative) in the light of their arrest and subsequent conviction. What this means is that, if there was a "next time," they would be unlikely to perceive the potential costs of the offence to be any greater. Harding and Blake (1989) referred to a similar demonstration of "fuzzy logic" during their analysis of weapon choice by Western Australian robbers—a phenomenon Harding later described as a "'deterrence hiatus'—a rationality gap between the expectations and the consequences of chosen behaviours and between past experience and future intentions," so that, "despite what one would have thought would be the shattering of their illusions, [the robbers] overwhelmingly asserted that they would continue to use firearms as the crime weapon when committing their next robbery offence" (Harding, 1993:97). It would appear that if an offender's original rationale for committing the crime, or for adopting a particular *modus operandi*, remains intact (due to external attribution of blame for the unexpected and undesirable outcome on this occasion), there is little reason for him to alter his perceptions or, indeed, his future behavior.

CONCLUSION

The findings of this study do not bode well for preventing armed robbery. Exclusive focus upon the issue of firearms and their availability, at the expense of exploring other preventive strategies, may not be justified as our results suggest that, in Britain at least, a significant proportion of "armed" robberies may not be carried out with real guns. In addition, it appears that robbers rarely base their assessment of weapon choice upon the issue of availability alone. Neither did those who chose not to use a real firearm base this choice upon the potential to receive some degree of court leniency, in the event of their arrest and subsequent conviction. Thus, longer sentences for the use of "real guns" would not be expected to have much impact upon offenders' decisions to commit robbery. Of course, this is much as we would expect, given that these robbers were rarely found to consider the eventuality of capture and regarded it to be of minor importance.

Correspondingly, the decision to carry out the armed robbery seemed to be a robust one. The mental equation to assess the pros and cons of committing the crime of armed robbery was, for these robbers at least,

heavily weighed in favour of "the pros." Of course, it is not possible to determine how many potential robbers there were whose calculations led them to quite a different conclusion. One of the major limitations of studies such as this one is that they are based upon interviews with the undeterred and the failures (at least on this occasion). However, to redress the balance in order to achieve a more favourable outcome with regard to these undeterred robbers would clearly be no easy task. It does not seem possible, or practical, to increase the law enforcement effort aimed at this crime. Even though to do so may help alter robbers' perceptions of the certainty of arrest to some degree, it is likely that very large increases in criminal justice input would be required in order to deliver even small gains in overall clear-up figures. It is also true that other factors impinge upon police efficiency. For instance, public assistance is important in order to identify robbers; the motivation of employers to install preventive hardware (and ensure that it is properly maintained) and to train staff in techniques of robbery avoidance is imperative if prevention is to succeed at all.

Neither does it seem practical to expect financial institutions and commercial properties to reduce counter cash much more than they already have. Anyway, as the results of this study show, some of today's robbers are generally satisfied with, and are prepared to commit robbery for, very small amounts of money. Thus, with regard to reducing the financial incentive to rob, there does not appear to be a simple or satisfactory solution.

If armed robbers are not going to be deterred by either reducing the size of the rewards or increasing the prospect of arrest (and other associated risks), then possibly the best avenue to pursue would be that of target hardening and other situational crime prevention strategies. It has been suggested that the effects of such strategies may reach beyond primary deterrence (preventing the robbery from being attempted at all) into the sphere of secondary prevention (foiling the attempt to rob) and subsequent detection of offenders. What is also required, however, is further study of the dynamics of robbers' interpretations in order to pinpoint the essential elements of the motivation to rob.

In this respect, it is important to acknowledge that individuals do not make the decision to rob in a social vacuum but are influenced by predisposing factors outside the immediate context, such as social learning and experience and other driving forces (Cornish and Clarke, 1986; Feeney, 1986; Gabor, 1988; Harding, 1993; Wright and Rossi, 1986). How

do people develop the readiness to commit armed robbery? How do offenders obtain their information about this crime? Perhaps from this kind of analysis, we can develop a clearer understanding of armed robbery and the processes that might prevent it. Indeed, despite the recent fashion of adopting crime-specific—as opposed to person-centered—analyses of crimes such as robbery, all of the writers who support this approach acknowledge the inevitable role of personal factors. As Feeney (1986) points out, "Logically the decision to rob is a very complex matter involving the whole past of the individual considering the crime as well as that person's present situation" (p.54-55). Only by examining these factors does it seem possible to derive effective early preventive techniques.

There are many other factors that also influence an offender's decision to commit armed robbery. For instance, we have made no mention of one of the most important factors to have instigated this decision-making analysis—the motivations behind the crimes. All of the offenders claimed to have a motivation, and many believed that their motivations would have encouraged anyone (or anyone in the same circumstances, at least), to have done what they did. Those who had an addiction to feed or had severe financial burdens may have regarded this crime to be the best alternative available to obtain sufficient amounts of money quickly. Even when the amount of money obtained was quite small (an element often touted in support of the irrationality of economic criminals), it must be recognized that even apparently small sums may be adequate for the offender's immediate needs. Hence, gains may be subjectively much larger than they appear (Walsh, 1986). Those who were tempted by a "desirable lifestyle" (one in five offenders) may have had no other way of obtaining the 'symbols of success' that are held in such high esteem in our society. Furthermore, most of the individuals interviewed had embarked on a life of crime sometime before their entrance into the 'big league' of armed robbery.

In this context, the subjective interpretations of these individuals may be viewed as logical calculations based on a history that allows offending to be within the boundaries of their personal sensibilities; an immediate motivation, or need, requiring a timely solution; but also, their interpretations may be viewed to be based on a reasonably well-founded, balanced and accurate appraisal of the odds.



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NOTES

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1. A number of researchers have attempted to analyse offenders' decision making within a rational choice perspective. For examples see Bennett and Wright (1984), Cromwell, Olson and Avary (1991) and Maguire and Bennett (1982) on burglars; Carroll and Weaver (1986) on shoplifters; Light, Nee and Ingham (1993) on car thieves; Harding and Blake (1989) on violent offenders.
2. For the findings on these issues, and on weapon choice in particular, see Morrison and O'Donnell (1994).
3. According to the Theft Act 1968 (sec. 8.1), "A person is guilty of robbery if he steals, and immediately before or at the time of doing so, and in order to do so, he uses force on any person or puts or seeks to put any person in fear of being there and then submitted to force."
4. Defined by the Firearms Act 1968 (sec. 57.1) as, "... a lethal barrelled weapon of any description from which any shot, bullet or other missile can be discharged ..."

5. Defined by the Firearms Act 1968 (sec. 57.1) as, "... any thing which has the appearance of being a firearm... whether or not it is capable of discharging any shot, bullet or other missile..."
6. These interviews were discarded because: the inmate had been mistakenly identified and was serving a sentence for an offence other than robbery; or the interviewee maintained that he was not guilty of the robbery and had been wrongfully convicted; or the interviewee appeared to be suffering from psychiatric problems and was unable to offer any useful information.
7. The distinguishing characteristics of robbers who employed different types of weapons are described in Morrison and O'Donnell (1994).
8. It is important to note, however, that the Home Office figures are based on all robberies recorded by the police, while the present study focused on the more serious armed robberies that had been dealt with by the Flying Squad. Thus, the Home Office figures and our own are not directly comparable.
9. During the year in question, the average loss during raids on security vehicles was £20,000 (i.e., around A\$40,000), whereas building societies lost just over £1,000 on average and Totalizator Agency Boards, bottle shops and other kinds of shops generally lost less than £500.

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