
EXPLORING AUTO THEFT IN BRITISH COLUMBIA

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Abstract: *Motor vehicle theft is a major property crime problem in Canada; however, studies of auto theft in Canada are limited. This paper reports on the results of the most recent Canadian study. The British Columbia Association of Chiefs of Police, in conjunction with personnel at the Insurance Company of British Columbia and the School of Criminology at Simon Fraser University, explored the site-specific and situational characteristics of auto theft in British Columbia in order to inform potential auto theft reduction strategies. The study found that young offenders who target older, Japanese-manufactured vehicles with theft-vulnerable door and ignition locks are responsible for a disproportionate amount of the auto theft problem in British Columbia. There was little evidence to suggest that auto stealing is carried out by organized, profit-motivated adult offenders. However, willful damage to stolen vehicles by thrill-seeking youths is widespread and costly, and it contradicts the innocuous connotation of the term "joyriding." Findings suggest that automobile owners should protect their cars differently: Owners of older, Japanese-manufactured vehicles may be well advised to employ widely available, inexpensive after-market anti-theft devices such as steering wheel locks to deter opportunistic youth, while the owners of vehicles whose parts are highly sought after for resale will need to layer anti-theft technologies and be diligent guardians to better protect their vehicles against theft. The information learned in this study is forming the basis of a number of auto theft reduction initiatives being undertaken jointly by police and insurance personnel in British Columbia.*

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INTRODUCTION

Situational crime prevention embraces a variety of policy approaches aimed at reducing opportunities for crime. Problem-oriented policing is one such approach that is typically carried out by rank-and-file police officers focusing on problems at the neighborhood level. Herman Goldstein, founder of this policing reform movement, suggests that this concept is likewise applicable to problem solving in a larger context, for example, citywide or statewide problems (Goldstein, 1990). In his introduction to the first volume of this series, Clarke (1993) notes that, stripped to essentials, the thinking behind situational crime prevention is commonsensical. Like many of the problems with which the police must deal, the problem of auto theft spills over police jurisdictional boundaries; common sense requires that police administrators embrace a geographically expanded problem-solving approach when deciding how best to respond to this widespread, costly crime.

Successful crime prevention strategies need to be empirically informed by detailed descriptions of as many of the features involved as possible, and this requires research. With respect to auto theft prevention, strategies taken to counter the activities of profit motivated professional auto thieves may differ greatly from approaches taken to curb the thrill-seeking motives of juvenile car thieves. This article reports on recent efforts undertaken jointly by representatives of several public and quasi-public agencies in British Columbia. CAN in an effort to find ways to reduce the incidence of auto theft.

THE NATURE OF AUTO THEFT

Theft from and theft of motor vehicles constitutes a significant proportion of the total crime picture in industrial societies. Together these offenses accounted for nearly half of all Uniform Crime Reports larceny-thefts in 1989 (U.S. Department of Justice, 1990), and 18.5% of all offenses reported in the 1988 British Crime Survey (Mayhew et al., 1989). The financial costs of this crime have been reported as substantially higher than losses from residential burglary (Hough and Mayhew, 1985). Although it has been understudied, recent attention to auto crime in the criminological literature has underscored its importance. The term "car crime" is used in Britain to refer to theft of and from automobiles. The study described in this article focused only on *theft p*/motor vehicles whose

body styles designated them as passenger vehicles (including light trucks and dual-purpose vehicles such as minivans). We have taken the liberty of using the terms "motor vehicle theft," "auto theft" and "car theft" interchangeably; all refer to the theft of passenger vehicles.

Clarke and Harris (1092a) draw a distinction in the varieties of auto theft that provides a good starting point for our discussion. "Joyriding" is widely used to describe the opportunistic thefts committed by juveniles interested in the temporary appropriation of motor vehicles, and is distinguished from profit-motivated thefts intended to permanently deprive lawful owners of their automobiles. Many jurisdictions in the U.S. have criminal code provisions that allow for this distinction (e.g.. "unauthorized use"), as does the "taking-and-driving-away" provision used in England and Wales. Challinger (1987) divides auto theft motivation into three categories: (1) *recreation* ("joyriding," and status seeking); (2) *transportation* (temporary or extended use, or for use in other crimes); and (3) *profit* ("stripping," "chopping," "resale" and insurance fraud).

In this paper, joyriding will be used loosely to refer to the auto-theft activities of young persons interested in the temporary acquisition of automobiles for short-term transportation (including use for other criminal activity), or for status and thrill-seeking motives, including willful damage of vehicles. The profit motivation category requires further definition because it will inform our discussion of the differential risk of theft among the vehicle fleet in British Columbia. Auto theft for profit takes several typical forms, including the operation of "chop shops" that dismantle cars into collections of parts; the theft of vehicles for resale either locally or abroad; and the theft of vehicles to allow convenient "stripping" of selected parts in protected locations.

Chop shops operate in a number of ways. Large chop-shop operations that systematically dismantle vehicles and distribute desired parts to shady auto body repair businesses are rare in British Columbia. In contrast. Tremblay et al. (1991) found that changes in the insurance industry's preference for used parts for repairs in the late 1970s to mid-1980s partially explained auto theft increases in the province of Quebec. Much more common in British Columbia are chopping operations specializing in modifying and upgrading select vehicles for resale whose parts are highly interchangeable (e.g.. Pontiac Firebird and Chevrolet Camaro), or models enjoying a considerable degree of part interchangeability across several years of manufacture (most notably, Porsche 911). The success of these latter operations, which involve the resale of auto-

mobiles with altered or switched vehicle identification number plates, typically hinges on the degree of laxity in governmental vehicle inspection and registration procedures, as well as a lack of effective regulation of the parts-salvage industry and the rebuilding of wrecked vehicles (Kajander et al., 1992).

In contrast to the systematic, organized removal and distribution of automobile parts carried out by chop shops, "stripping" refers to the ad hoc removal of selected parts (e.g., audio equipment, specialty magnesium ["mag"] wheels and performance tires) by amateurs (Challinger, 1987) intending to use them to upgrade their own vehicles, or to sell them in ready-made "hot" parts markets. Profit-motivated youths can often steal a car in less time than it takes to carefully remove parts for resale. There is a steady demand for stolen automobile parts from status-conscious, cash-strapped youths willing to purchase them for a fraction of their legitimate cost, and motivation for supplying this demand is widespread. Also, because they often move stolen cars to remote areas to avoid detection while stripping, profit-motivated strippers typically exploit a lack of citizen surveillance and inflict considerable incidental damage on the cars they steal.

Auto Theft Trends in Canada

Canada had a population of slightly more than 27 million people in 1991. Canadians reported 139,310 motor vehicle thefts to the police in that year, about 516 vehicle thefts per 100,000 population (Canadian Centre for Justice Statistics, 1991). The Insurance Crime Prevention Bureau of Canada estimates that the direct costs attributable to motor vehicle theft totaled more than \$300 million in 1991. This figure does not include associated criminal justice, economic or other indirect costs identified by Field (1993). According to an international victimization survey conducted between 1984 and 1988, Canada ranked tenth among 14 participating countries in the number of motor vehicle thefts per 1,000 vehicles registered (van Dijk, Mayhew and Killias, 1990). Theft per 1,000 registered vehicles remained fairly constant between 1980 and 1990, ranging from a decade low of 5.1 in 1983, to a high of 6.7 in 1980 (Ogrodnik and Paiement, 1992).

On average, three of four vehicles stolen in Canada between 1980 and 1990 were recovered. Since 1980, the proportion of unrecovered vehicles has increased from 19 to 27% (Ogrodnik and Paiement, 1992). An increase

in the proportion of unrecovered vehicles is generally thought to be indicative of an increase in adult offenders engaged in organized auto theft activities for the resale and stolen parts markets (Clarke and Harris, 1992a). Vehicle recovery rates differ considerably among provinces. Figure 1 summarizes auto theft rates by province for 1990.

Auto Theft Trends in British Columbia

During the 15-year period between 1977 and 1992, the number of motor vehicle thefts in British Columbia more than doubled, from fewer than 12,000 to over 24,000. During the same period, the rate per 1,000 population ranged from a low of 3.87 in 1983 to a high of 7.20 in 1992. After hovering around 4.6 between 1977 and 1983, this rate rose steadily to the 1992 high.

While British Columbia had the second-highest rate of auto theft among Canadian provinces in 1992 (eight thefts per 1,000 registered vehicles), it enjoyed the highest rate of recovered vehicles—91% versus a national average of 73% (Ogrodnik and Paiement, 1992). Again, a high proportion of recovered vehicles probably signals thrill-seeking behavior by young persons as the source of motivation for theft, while the opposite points to theft for the chopping and vehicle-resale markets (McCaghy et al., 1977; Challinger, 1987; Tremblay et al., 1991). Figure 2 shows the proportion of young offenders and adults charged for motor vehicle theft in British Columbia between 1986 and 1992.

The number of auto thefts reported monthly to the police increased from approximately 600 to over 1,600 between 1986 and 1992. The rapid increase in auto theft was more dramatic than the increases in other property offenses. In addition, increased attention was paid in the media to police pursuits of stolen autos beginning in the latter part of 1990. Sensitive to the risks involved, police administrators in British Columbia responded to the rapid growth in auto theft by forming a committee to study the problem, with an aim toward identifying strategies to reduce it.

Figure 1: Motor Vehicle Theft Rates and Recovery Percentages by Canadian Province

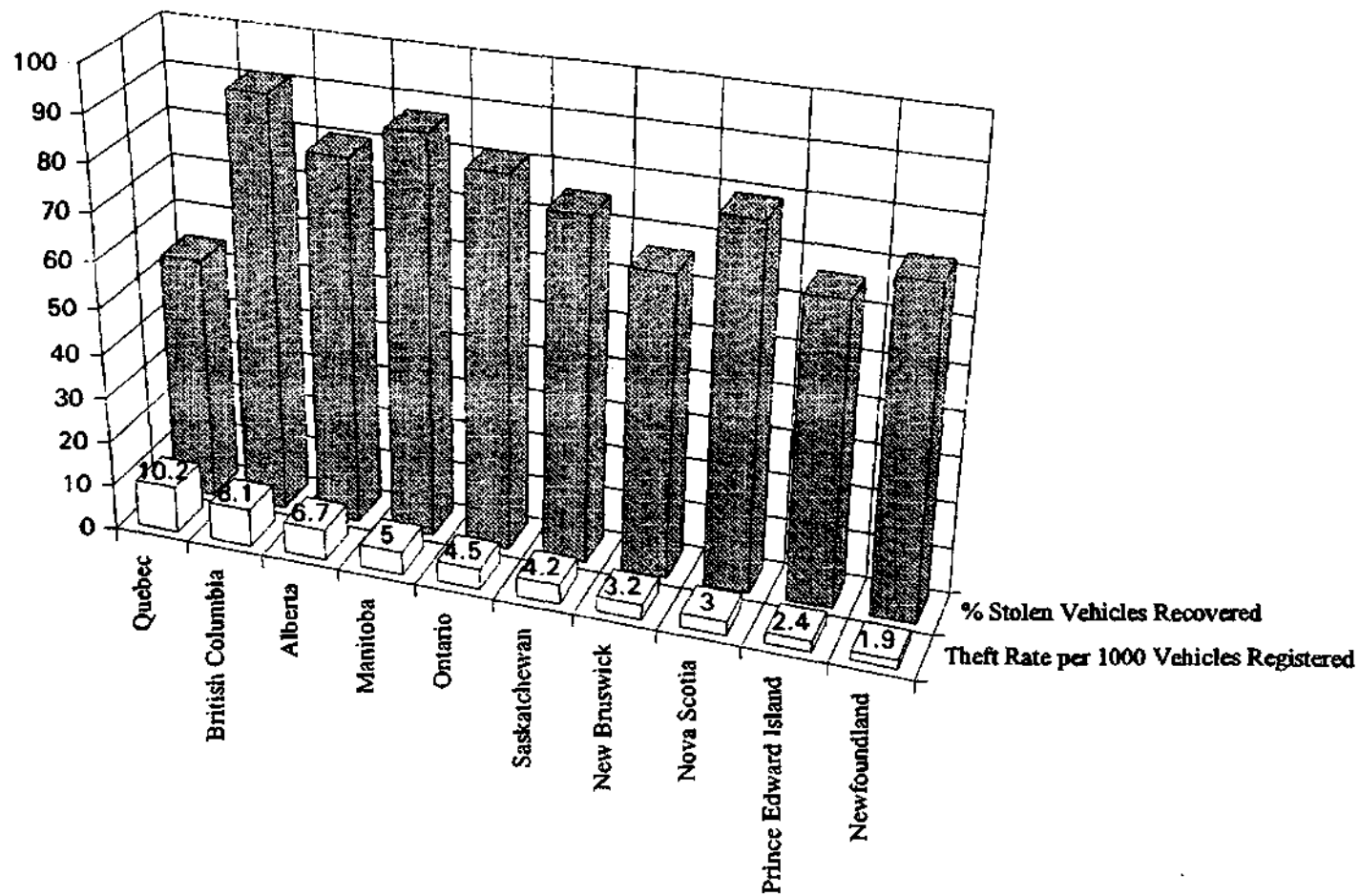
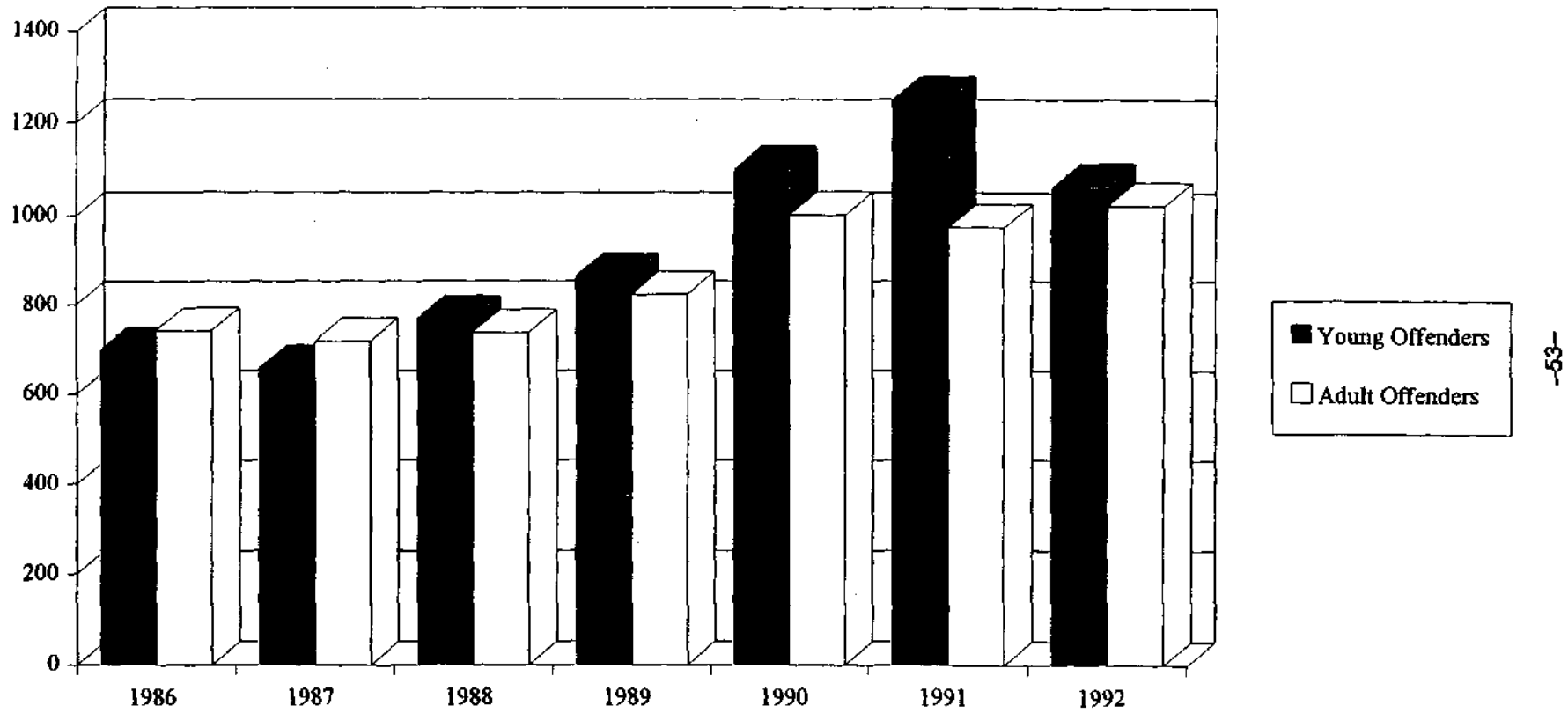


Figure 2: Number of Persons Arrested for Motor Vehicle Theft in British Columbia



TOP-END PROBLEM-ORIENTED POLICING

In the closing months of 1991, an Informal group of municipal police chiefs and senior administrators of several detachments of the Royal Canadian Mounted Police (RCMP) gathered to discuss the rapid increases in auto theft being experienced in their respective municipalities. This group quickly concluded that conventional police enforcement strategies were inadequate and that much more information was needed to design and implement effective strategies for arresting the rising rate of auto theft. They developed an ad hoc committee that included the authors of this article and representatives of the Insurance Corporation of British Columbia (ICBC).

Given the widespread nature of the problem, this informal group sought the sponsorship of the British Columbia Association of Chiefs of Police (BCACP). An Auto Theft Committee made up of representatives of municipal police agencies, RCMP detachments, the Police Services Division and the Coordinated Law Enforcement Unit (CLEU) of the Attorney General's Ministry, the ICBC, and Simon Fraser University was formed under BCACP auspices. This was the first time the BCACP had undertaken research of this nature. The committee devised a research plan that was subsequently endorsed by the full membership of the BCACP, and research began in the summer of 1992.

Since a recent study had shown that British Columbia had a very high stolen vehicle recovery rate—91% (Ogrodnik and Paiement, 1992)—and because it was widely believed in police circles that joyriding accounted for most of the theft, the orientation of the committee was toward auto theft committed by juveniles. Also beginning in the summer of 1992, the Joint Forces Operations component of the CLEU undertook an investigation of organized auto theft in the province. An analyst for this group sat on the BCACP Auto Theft Committee and kept the committee informed of developments of the CLEU investigation. Steps were taken to supplement what was learned in that investigation to avoid unnecessary duplication of those efforts. The research strategy adopted by the committee intended to triangulate information about offender, victim, and vehicle characteristics, the auto theft event and the justice system's response to the problem. These areas of interest were explored using multiple data sources, including but not limited to the following:

- (1) a literature review of past studies on auto theft;

- (2) spatial and temporal analysis of existing official police data;
- (3) interviews with criminal justice personnel of various agencies affected by auto theft including police auto theft investigators and crime prevention personnel, CLEU personnel, youth probation, custody and diversion officers, ICBC special investigators, Crown prosecutors, and judges;
- (4) a victimization survey;
- (5) offender interviews with a sample of known auto thieves;
- (6) a school survey of high school students in the age cohort believed responsible for the bulk of the auto theft problem in the province; and
- (7) analysis of ICBC and police data in order to calculate relative rates of theft by make, model, color, body style and year of manufacture.

What follows is a description of components (3) through (7) of the study, and a brief summary of the major findings of each. These components are chosen for discussion because they constitute the major elements of the action research approach undertaken.

Interviews with Criminal Justice Personnel

To augment official police data on recent auto theft trends in the province, the BCACP study included semi-structured interviews with personnel in various criminal justice agencies directly affected by the problem of auto theft, as well as representatives of the Special Investigative Unit of ICBC in an effort to determine their perceptions and concerns. A snowball sampling technique yielded a total of 42 interviews held with youth court judges, crown prosecutors, youth probation and custodial personnel, police administrators, investigators, and constables in about a third of the municipalities for which the study was commissioned.

Many in this sample were quick to point out that auto theft presents few unique problems for the criminal justice system. Those interviewed voiced concerns related to the status of young offenders in the Canadian legal system and the philosophy of the juvenile court, the laying of criminal charges by the crown, perceived judicial laxity in sentencing, and a resulting lack of general deterrence. While many of the comments reflect the occupational perspectives of the persons interviewed, several areas of consensus emerged. Joyriding was identified as the predominant source of the auto theft problem. Many noted that increased youth involvement in violent crimes against persons had diminished the attention paid to

their Involvement in property crimes. Consequently, auto theft was not perceived as a priority within the criminal justice system. Apprehended youth were usually diverted or put on probation, the conditions of which were almost uniformly ignored by these young offenders.

Although none of the criminal justice personnel we interviewed could identify with any specificity reasons why auto theft began to increase rapidly in the latter half of 1989, many of the non-lawyers expressed the belief that the criminal justice system's "non-response" was emboldening the most active delinquents. Police investigators in some municipalities were inclined to attribute the bulk of the auto theft problem in their jurisdictions to a select group of offenders whose auto stealing activities were well known. While only a few of those interviewed advocated what might be characterized as a "get-tough" approach, the majority thought that the apparent lack of consequences for getting caught stealing cars figured into the cognitive processes of young offenders.

Many of the criminal justice system interviewees called attention to the inability of a due process-modeled youth justice system to respond effectively to the group-oriented nature of juvenile auto theft. Strictly speaking, a passenger in a stolen car can be charged for being in possession of stolen property in British Columbia, provided the Crown believes there is a substantial likelihood of successful prosecution. This requires the Crown to prove that a passenger knowingly had possession and control of the automobile. In practice, these legal requirements are rarely satisfied, and apprehended passengers are almost always released from the scene without further action by police.

Given this situation, the criminal justice system interviewees believed that word quickly spread among teenagers that "nothing happens" when someone gets caught in a stolen car. Few of those interviewed put much faith in the deterrent potential of a "just-deserts"-oriented juvenile justice system. However, many believed that some kind of consequence, such as an overnight stay in jail needed to be visited upon the youthful joyrider, even if the gesture was largely symbolic. In general, auto theft reduction was not seen by those working within the criminal justice system to be a likely result of any superficial changes in criminal justice system operations. These findings mirror the conclusions of several studies of joyriding youth in Great Britain (Parker, 1984; McCullough et al., 1990).

Victimization Survey

Existing police data in British Columbia provides scant information about the characteristics of the auto theft event. Precise information about the condition and location of recovered vehicles, for example, is not generally stored in computerized form and may not even be recorded in investigation files. As a result, characteristics of auto theft are not generally available for analysis. Environmental factors such as the ambient lighting or vehicular and pedestrian flows around the locations where vehicles are stolen had not been studied. A victimization survey was undertaken in an effort to get a clearer picture of the auto theft event. The survey was designed to provide information not available in police records or insurance data, and to determine to the best level possible, the site and situational characteristics of the theft and characteristics of target vehicles. A province-wide sample of more than 500 known auto theft victims was drawn from police files and interviewed by telephone.¹

Because many joyriding incidents resulted in substantial damage to vehicles, and because parts replacement figures available from the ICBC did not distinguish between parts replaced due to damage and parts replaced because a recovered auto had been stripped, the victimization survey sought to gather information about the precise condition of recovered vehicles, especially the mix of parts *damaged* and parts *removed*. It also sought to obtain information about suspects, previous victimization of vehicle owners, and characteristics of vehicle guardianship.

The percentage of stolen vehicles recovered (95%) in this sample was slightly higher than the provincial rate (91%) reported in a recently conducted Canadian study (Ogrodnik and Paiement, 1992). Almost 40% of the vehicles stolen in this sample were Japanese automobiles manufactured prior to 1986 (relative risk rates by make and model are presented in a subsequent section of this paper). The crude force methods often employed by offenders resulted in substantial damage to ignitions locks and windows on a majority of victims vehicles. Respondents also reported other kinds of vehicle damage such as under-carriage, drive train and body damage. This finding supports the contention of interviewed criminal justice system personnel that intentionally destructive forms of joyriding are widespread in British Columbia.

Parts reported removed from vehicles, as opposed to those damaged, most frequently included audio equipment (14%), followed by wheels and

tires (9%) and seats (4%) taken mostly from later-year Japanese models and most notably from Volkswagens, 45% of which were stripped of their seats. Removal of these vehicle parts is consistent with theft by criminally unorganized youths seeking parts to upgrade their own vehicles or to sell to an informal network of delinquent friends. This pattern of parts theft is quite different from systematic parts removal for the chopping and retagging or resale markets identified by Challinger (1987).

Consistent with the findings of other studies of auto theft in Canada (Morrison, 1991; Ogrodnik and Paiement, 1992), roughly 20% of the vehicles in this sample were stolen with the owner's keys, most often because they were left in the ignition or had been hidden in or on the vehicle. Fewer than 8% of the victims in our sample had employed any post factory anti-theft devices. Some 7% of the victims claimed they had alarms on their cars, but it could not be determined if these devices were passive or otherwise activated at the time of theft. Other types of anti-theft devices, such as steering wheel locks, fuel cut-off and ignition disabling devices, were collectively employed by less than 1% of the sample. Even after having been victimized, fewer than 13% of the respondents said they took any subsequent affirmative action to better protect their vehicles. Of the few who said that they did take some new form of preventive action, half merely indicated that they began to lock the doors on their cars.

Nearly a quarter of the respondents had previously been a victim of auto theft (60% of which took place in the last three years). Repeat victimization was not restricted to auto theft. The same respondents reporting multiple auto theft victimization in this sample also reported multiple victimization in other crime categories. The number of repeat victims in this sample was too small for more rigorous statistical analysis. Nevertheless, the crime prevention potential of repeat victim-focused efforts would appear to be substantial (see Farrell and Pease, 1993).

Auto theft patterns identified in the survey resemble those found elsewhere with respect to favored place and time of day (Hope, 1987; Saville and Murdie, 1988; Webb and Laycock, 1992). Sixty-three percent of vehicle thefts in the sample took place at the owner's home site, and 70% of all vehicle thefts were perpetrated in the nighttime; however, they did not always take place under cover of darkness. Eighty percent of the victims in this survey thought the location from where their vehicle had been stolen was "well-lit" or "moderately well-lit" at the time of theft. Vehicles parked on the street at the home site were most vulnerable to theft (36%) followed by those parked in driveways (20%), underground

garages (16%) and ground-level parking (11%). Large parking lots were the second most favored location for perpetrating auto theft; 40% of the respondents said their cars were stolen from parking lots with 100 or more spots, 12% of which had lot attendants. Including the home site, victimized autos were typically parked in open locations easily visible to passers-by. "High" to "fairly-high" levels of vehicular traffic both during the day and at night was noted by victims as a feature of the theft location.

Approximately 90% of the victims' vehicles were recovered damaged, many so extensively that a third of the respondents believed their vehicles would never again operate as they had prior to the theft. Some victims expressed emotional anguish about the shortened life span of the vehicle, or about engine and drive train damage that would not be covered by insurance when this damage evidenced itself later on.

The ICBC estimated the average dollar loss per theft claim for recovered vehicles in 1992 to be around \$3,600, divided equally for parts and labor. The average claim undoubtedly involves a week or more for repairs, and fewer than a quarter of the respondents indicated the availability of a second auto to use while their vehicles were being repaired. Only 5% of the victims said they were provided with a "loaner" to use while their recovered autos were being repaired; the remaining 70% of victims were burdened with finding alternative transportation. Taken together, these inconveniences probably resulted in missed work and reduced access to various consumer and recreational pursuits, factors to be considered in a comprehensive assessment of the cost of auto theft (Field, 1993).

Offender Interviews

In an effort to better understand the situational and motivational characteristics of young peoples auto theft activities, semi-structured interviews were conducted with 31 incarcerated teenage males claiming various levels of involvement in auto theft from three different regions of the province.² Interviews took approximately one and a half hours to conduct and explored:

- (1) family characteristics—structure, routine, civility, rules, discipline;
- (2) employment—job history, attitudes toward work and wages, future plans;
- (3) school—involvement, achievement, likes and dislikes, self-esteem, future plans;

- (4) recreation and friends—routine activities, places frequented, range of friends;
- (5) knowledge of and involvement in auto theft—recruitment into auto theft, motivations, offending range, targets, model specific theft techniques;
- (6) deterrence—anti-theft devices, attitudes toward offending and the criminal justice system.

Having established that the incidence of auto theft in British Columbia is attributable principally to youthful offenders seeking vehicles for short-term purposes, it would also appear that a relatively small number of youths are disproportionately responsible for a large volume of theft. Even allowing for considerable overestimation by respondents, the findings suggest that the most prolific auto thieves in British Columbia are of the repeat multiple-offense variety interviewed in this component of the study. We purposely interviewed a number of youths whose professed involvement in auto theft was minimal in an effort to explore differences between them and more highly committed offenders.

For the most part, observed differences in the level of auto theft involvement appear to be a function of urban versus rural living. The lack of anonymity perceived by small-town delinquents appears to be a major deterrent. All of the low-involvement offenders in this sample lived in small cities and towns in the interior or northern regions of the province. The auto stealing they described was very opportunistic: they took vehicles left running in driveways on cold winter mornings. These offenders were inhibited by both a limited local street network and the perceived likelihood of being caught if they drove the stolen car through town where residents know each others' vehicles.

Most of the offenders described frequent family moves; troubled relations with parents and teachers; and high levels of involvement with alcohol, drugs, and other crimes. They said they started stealing cars around age 13, and first became involved in auto theft as passengers in stolen cars: they reported riding along in stolen cars an average of 2.5 times before stealing an auto themselves.

Challinger's (1987) threefold classification of auto theft motivation—(1) recreation (joyriding, and status seeking); (2) transportation (temporary or extended use, or for use in other crimes); and (3) profit (stripping, chopping, retagging or resale and insurance fraud)—generally describes the different motivations for theft found among these young offenders. Still, a slightly different typology covers British Columbia's high-involvement

ment offenders somewhat more clearly. There was some overlap in motivation categories described by respondents in this sample: joyriders and transportation-motivated offenders sometimes stripped selected parts from the automobiles they stole. Profit-motivated offenders engaged in the systematic theft of vehicles for the chopping and resale markets often stole vehicles for transportation. Figure 3 sets out the typology developed to describe the three most prevalent offender types encountered in this sample.

Most offenders reported spending a considerable amount of their spare time hanging around shopping malls. A few were cognizant of the effect frequent exposure to consumer goods played in motivating them to commit crime. Said one 14-year-old respondent: "I go to a mall almost every day and see stuff I want to buy...I do crime in order to buy nice stuff." Many of the offenders seem to derive status from having a geographically expansive friendship network, much of which revolves around criminal activities.

Less than a third of this sample of repeat offenders reported having ever stolen a vehicle for a theft ring. Profit-motivated auto stealing in this sample was evidenced in the following areas: (1) vehicle acquisition for an adult-run theft ring; (2) theft for use in other crimes (notably burglary and "smash-and-grabs"); and (3) haphazard stripping of parts for which a ready market existed. Instrumental offenders claiming to have stolen vehicles for the resale and chopping markets were responsible for a disproportionate number of thefts. In stark contrast to the acting-out joyriders and thrill-seekers, instrumental offenders expressed little interest in adrenaline-producing behavior. They took precautions to avoid police and usually worked alone. They possessed a reflective, business-like attitude about their crime of choice, which is what probably enabled them to find work with organized theft rings.

Ford Mustangs, Chevrolet IROC Camaros, Volkswagen GTIs, late-year Honda Preludes and Accords and Acura Integras were identified as favored targets for the resale and chopping markets. Several instrumental offenders articulated the belief that they stood less chance of being incarcerated for auto theft if apprehended than they would for other offenses. Said one fifteen year-old respondent, "I told my friends they were stupid for doing robberies...I'd make \$500 —\$2000 a pop [for a stolen car]; they got chump change...If I get caught I may get a month or two, they're gonna get 18."

Figure 3: Typologies of Frequent Auto Theft Offenders

| | |
|-----------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Acting out joy rider | <ul style="list-style-type: none">• most emotionally disturbed of the offenders - derives status from having his peers think he is crazy and unpredictable• engages in outrageous driving stunts - dangerous to pursue — possesses a Kamikaze attitude• vents anger via car - responsible for large proportion of the totaled and burned cars• least likely to be deterred - doesn't care what happens |
|-----------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

| | |
|----------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Thrill-seeker | <ul style="list-style-type: none">• heavily into drugs - doing crime is a way to finance the habit - entices others to feel the "rush" of doing crime• engages in car stunts and willful damage to cars, but also steals them for transportation and to use in other crimes• steals parts for sale in a loosely structured friendship network• thrill-seeking behavior likely to be transferred to other activities and might be directed to legitimate outlets |
|----------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

| | |
|------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Instrumental Offender | <ul style="list-style-type: none">• doing auto theft for the money - most active of the offenders (5 or more cars a week) but the smallest proportion of the sample - connected to organized theft operations• rational, intelligent - does crimes with least risk - many got into auto theft from burglary - thinks about outcomes• doing crime while young offender status affords them lenient treatment — indicate that they will quit crime at age eighteen |
|------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

Thirty-two percent of the offenders thought underground parking lots the best place to steal vehicles, and another 22% mentioned car dealerships as easy targets due to the careless manner in which keys are handled by employees. Mall parking lots were also mentioned as prime "hunting grounds." This is interesting in view of what our victimization survey data tell us about where cars are actually stolen. It may represent another example of the difference between rationally-articulated target hunting areas and actual target-hunting areas that has been noted in the research on burglary (see, for example, Reppetto, 1974; Brantingham and Brantingham, 1978; Maguire, 1982; Rengert and Wasilchick, 1985; Cromwell, et al., 1991).

Notwithstanding the possibility of functional displacement in the form of carjacking, or displacement to less protected vehicles, on the basis of our interviews with these offenders target hardening appears to offer the best prospect for reducing auto theft. Three-quarters of the offenders said they avoid cars equipped with alarms and flee if an alarm goes off while they are attempting to steal a car. Forty percent of the offenders thought an alarm the best anti-theft device; several mentioned the talking variety as particularly worrisome. Few offenders have encountered the "Club" or similar steering-wheel lock. Nonetheless, 61% said they would avoid a car whose steering wheel was locked by such a device. The findings offer little encouragement for the deterrent value of the Combat Auto Theft (CAT) sticker programs. The CAT sticker program attempts to assist police in the identification of stolen autos by having owners who do not routinely operate their vehicles between the hours of 1:00 and 5:00 a.m. place a brightly colored sticker on the inside of the rear window where it is visible to patrolling police officers. Among other things, the sticker grants police blanket permission to stop and search the vehicle displaying it whenever it is observed in operation during the proscribed hours. Only 7% of the offender sample could correctly identify a CAT sticker, and the members of this small group said they would avoid a car so marked. Thirty-six percent of the offenders thought the sticker indicated the car was equipped with an alarm (so, presumably, 75% of these young offenders would avoid cars marked with CAT stickers to avoid the assumed alarms). The rest of the offenders did not recognize a CAT sticker and said it would not influence their auto stealing decisions.

Nearly two-thirds—19 of 31 offenders interviewed in this part of the study—could provide confident estimates of the number of vehicles they were stealing per week prior to their incarceration. Excluding the three

most prolific auto thieves in this sample, the remaining 16 offenders took an average of 2.8 (standard deviation = 1.82) vehicles a week, for a yearly total of 146 vehicles per offender. Even if the total number of autos reported stolen by this small sample of 16 juveniles were halved, it would still account for approximately 7% of the auto thefts known to police in British Columbia in 1992.

School Survey

While the interviews conducted with incarcerated juveniles provided invaluable information about the offending patterns and motivations of young persons known to be active in auto theft, existing data provided little guidance to the BCACP Committee on the prevalence of auto theft activity among the age cohort believed responsible for the bulk of the auto theft problem. Accordingly, a self-report survey seeking information similar to that obtained in the offender interviews was administered to 1,254 students attending eight different secondary schools in two regions of the province.³

About 5% of the student sample reported having stolen at least one auto in the previous year; 12% said they had been a passenger in a stolen car at least once during the same period. Self-reported auto stealing and riding varied widely among the eight schools surveyed. The percentage of respondents reporting having stolen at least one auto in the previous 12 months ranged between 3 and 9%, while self-reported stolen auto ridership varied between 8 and 17% among the eight schools. Curiously, percentages of stealing and riding did not consistently correspond to one another across the schools. For example, in one municipality the school with the lowest self-reported rate of auto stealing had the second highest rate of self-reported ridership. It would appear that juveniles are riding in cars stolen by people who are not attending their particular schools. Similar inconsistencies were observed for the younger, non-licensed respondents, whose routine activities one would expect to take place in a limited range predominantly covered via walking or bicycling. This suggests that at least among deviant youths, friendship networks may extend well beyond school "catchment areas." Other evidence of a geographically dispersed friendship network comes from the victimization survey: fewer than half (48%) of the recovered vehicles were recovered in the same municipality where they were stolen.

Typical gender differences were evident in the student sample. Female respondents were only half as likely to report involvement in either car stealing and riding as male respondents. While 74% of the male auto thieves said the vehicles they stole belonged to strangers, only 36% of the female auto thieves said they victimized strangers. More than a quarter of the secondary-school student sample indicated that one or more of their close friends had stolen a car.

Since the BCACP Committee was interested in learning how youths involved in car crime might differ from their more law-abiding peers, these groups were separated for some portions of the analysis. We thought it reasonable to include respondents who reported stealing one or more autos during the past 12 months, and/or those who reported riding in stolen autos two or more times during the same period in the "involved*" category. We believe repeat passengers are sufficiently associated with car stealers to warrant their inclusion in this category, and will refer to this combination of activity as *car-crime involvement*.

The secondary school survey contained several questions that, taken together, provide a rough measure of socio-economic status. Students involved in car crime do not differ from non-involved students with respect to the number of people living in the home, number of autos owned by the family, type of home lived in, or work status of parents. Except for a 10% higher involvement among respondents not yet old enough to legally drive, we found little evidence that individuals involved in car crime had less access to legitimate sources of transportation than non-involved individuals. In fact, the opposite appears to be true. While 54% of the licensed, non-involved students reported living in households owning three or more vehicles. 61% of the individuals involved in car crime reported likewise. It is not known if the parents of involved youths restricted their children's access to family-owned vehicles more than the parents of non-involved youth: however, there are other indications that car-crime-involved students had greater access to legitimate sources of transportation. Car-crime-involved youths age 16 or older were more than twice as likely to report personally owning a vehicle than were non-involved youths.

Car-crime-involved students were more likely than non involved students to indicate a desire to engage in thrill-seeking behavior such as racing cars and bungy jumping. Involved students also reported higher usage of alcohol and drugs than did their non-involved peers. In response to the open-ended question, "What do you do that is the most fun on weekends?," nearly a quarter of the car crime involved group made

comments about "getting high" or "partying"; none of the non-involved students responded in that way. The thrill-seeking activities preferred by car-crime-involved students closely resemble those mentioned by incarcerated offenders. This tendency may partially explain the high level of willful damage inflicted on stolen autos.

Table 1: British Columbia High Schools' Perceptions of Auto Theft Motivation

| MOTIVATION FOR THEFT | INVOLVED (N = 109) | NON-INVOLVED (N=1145) |
|-----------------------------------------------|-------------------------------|----------------------------------|
| FOR FUN | 80% | 73% |
| TO GET SOMEWHERE ON TIME | 10% | 6% |
| TO STEAL PARTS OR GOODS FOR THEMSELVES | 50% | 52% |
| TO STEAL PARTS OR GOODS FOR RESALE | 73% | 68% |
| FOR THE CHALLENGE | 22% | 50% |
| TO GET SOMEWHERE FOR FUN | 36% | 32% |
| TO GET SOMEWHERE BUSES DON'T GO | 13% | 7% |
| TO SHOW OFF | 48% | 71% |
| TO DO WHAT FRIENDS DO | 26% | 52% |
| TO GET CAR FOR ANOTHER TYPE OF CRIME | 34% | 20% |

Student respondents were asked to indicate why they thought young persons steal cars. Table 1 depicts the proportions of the involved and non-involved respondent groups identifying particular stated motives for car theft as provided in the school survey. These choices were developed from a review of the literature on auto theft committed by youths as well as from the interviews held with criminal justice personnel discussed earlier.

Students involved in auto theft identified mall parking lots and out-of-view residential areas as preferred locations for car stealing. Respondents were provided a list of potential auto theft reduction strategies and asked to indicate whether they thought the strategy would reduce auto theft. Half of the involved student group identified target-hardening devices as useful deterrents for auto theft; however, young persons involved in auto theft are less optimistic about the prospects for reducing its occurrence than are their non-involved peers.

Analysis of ICBC and Police Data

Insurance industry-supported organizations such as the Highway Loss Data Institute (HLDI) in the U.S. and the National Roads and Motorists' Association (NRMA) in Australia have for several years published reports highlighting the relative rates of theft by vehicle make and model. Theft risk rates are likewise produced by the U.S. National Highway Traffic Safety Administration (NHTSA), and by the Swedish-based Research Committee for Automobile Repairs. Only recently, however, has attention been paid to this aspect of auto theft in criminological literature. Houghton (1902) produced an auto theft index for the fleet of registered vehicles in England and Wales. Clarke and Harris (1992b) developed theft rate indices for three sources of auto theft motivation: temporary use, permanent retention, and stripping. The auto theft study undertaken by the BCACP included an analysis of police and insurance data in an effort to determine the relative risk of theft for different makes and models of vehicles in British Columbia.

Data Sources

Automobile registration and insurance in British Columbia are handled by the ICBC, a quasi-public, monopoly Crown Corporation owned by the provincial government. Approximately 1.8 million vehicles were registered with ICBC in 1992. Slightly more than 13,000 motor vehicles theft claims were filed with the ICBC that year. Of these, approximately 7,000 claims were filed for passenger vehicle thefts in the 32 municipalities and townships whose chief constables or RCMP Officers in Charge share membership in the BCACP. Theft risk rates were calculated for passenger vehicle thefts in these 32 municipalities using insurance fleet population counts that include approximately three-fourths of the total number of vehicles registered in British Columbia. Police data compiled by the RCMP

in the Police Information and Retrieval System (PIRS) included over 24,000 automobile thefts and attempted thefts reported to the police province-wide in 1991.⁵

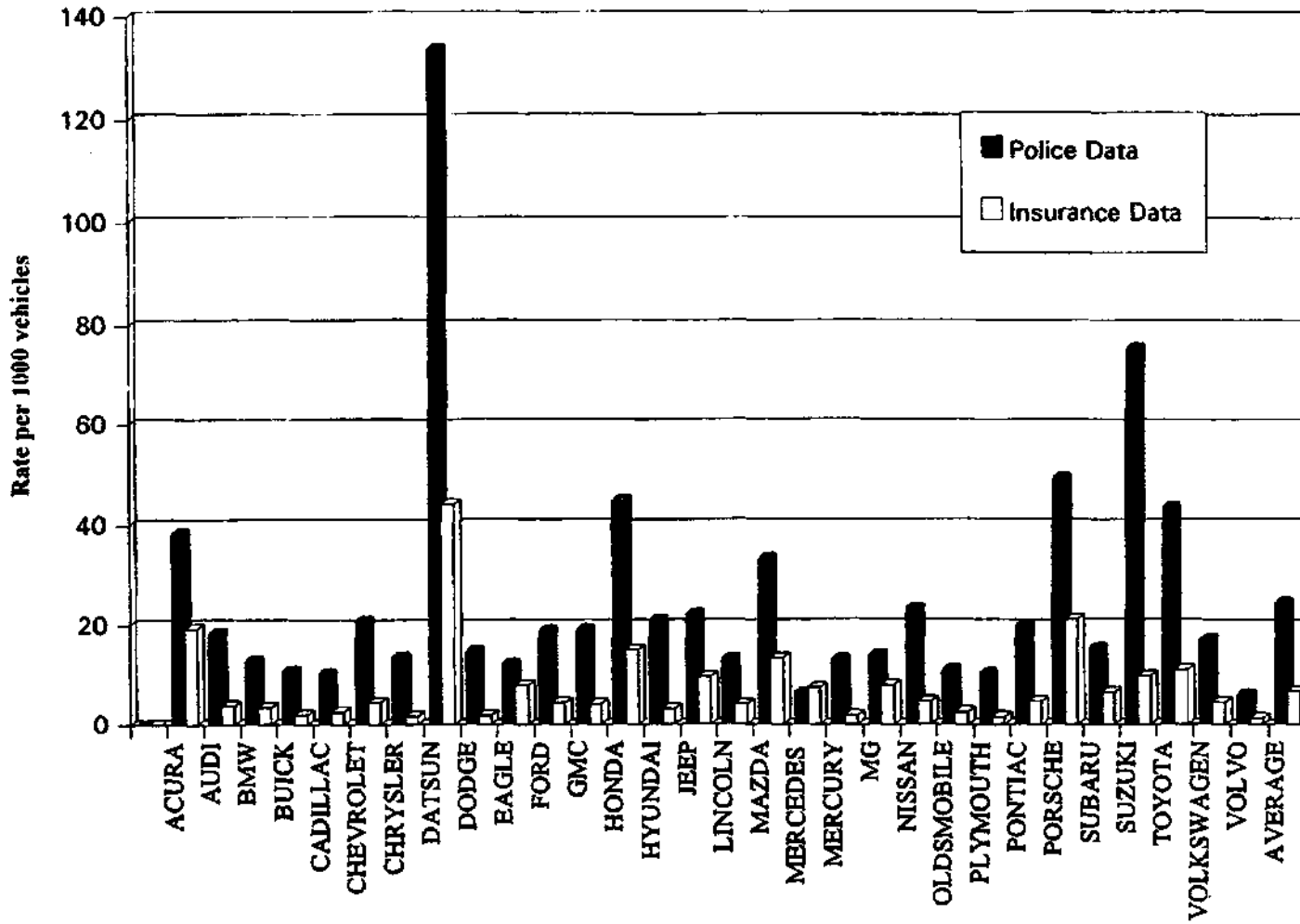
Two features account for the disparities in these data sources. Whereas PIRS data includes attempted auto thefts, ICBC loss type coding guidelines require that a vehicle has to have been moved in order to be coded as a theft loss. Attempted theft claims are categorized as vandalism and are therefore not included in ICBC auto theft data. Also, approximately 27% of the vehicles registered with the ICBC lack comprehensive coverage, and the theft of these vehicles will not be reported. Despite the disparities in the data sources (24,000 versus 7,000 thefts), the relative risk of theft derived from them match closely when rank-ordered. Figure 4 shows the rates of theft per 1,000 registered vehicles for both PIRS and ICBC data for the 30 most numerous makes in the fleet.

Theft Risk Ratings

Theft rate calculations in this section utilize ICBC data. Whereas the HLDI excludes from its theft rate calculation models with total fleet counts fewer than 5,000, this threshold would exclude too many vehicles from the analysis in British Columbia and would obscure rather than elucidate potential regional patterns in auto theft. We selected vehicles whose body styles designate them as passenger vehicles and aggregated them by make, excluding those makes with fewer than five thefts in 1992. The remaining 1.08 million vehicles consisted of 1,333 different model designations. Of these, 131 models had fleet counts greater than 2,000, while only 46 had fleet counts greater than 5,000.

There were indications from other components of the study—the interviews we conducted with criminal justice personnel, the victimization survey and the interviews held with auto theft offenders—that Japanese import vehicles were disproportionately sought after as targets for auto

Figure 4: Police and Insurance Theft Rates 1991-1992



**Table 2: Theft Rates* by Make—
Rank Ordered Worst to Best
1992 ICBC Data—Fleet Count > 2000**

| MAKE | FLEET | STOLEN | RATE |
|----------------------|--------------|---------------|-------------|
| 1. DATSUN | 19,431 | 858 | 44.16 |
| 2. ACURA | 6,430 | 124 | 19.28 |
| 3. HONDA | 72,295 | 1,089 | 15.06 |
| 4. MAZDA | 35,005 | 469 | 13.40 |
| 5. TOYOTA | 91,398 | 1,004 | 10.98 |
| 6. SUZUKI | 4,443 | 43 | 9.68 |
| 7. JEEP | 11,917 | 113 | 9.48 |
| 8. MERCEDES | 3,444 | 25 | 7.26 |
| FLEET AVERAGE | | | 6.63 |
| 9. SUBARU | 2,633 | 17 | 6.46 |
| 10. NISSAN | 26,725 | 123 | 4.60 |
| 11. PONTIAC | 53,826 | 241 | 4.48 |
| 12. VOLKSWAGEN | 32,859 | 146 | 4.44 |
| 13. FORD | 170,259 | 736 | 4.32 |
| 14. CHEVROLET | 137,657 | 589 | 4.28 |
| 15. GMC | 55,597 | 224 | 4.03 |
| 16. LINCOLN | 2,001 | 8 | 4.00 |
| 17. AUDI | 2,716 | 10 | 2.53 |
| 18. BMW | 5,466 | 18 | 3.29 |
| 19. HYUNDAI | 12,486 | 39 | 3.12 |
| 20. CADILLAC | 3,953 | 10 | 3.68 |
| 21. OLDSMOBILE | 33,151 | 81 | 2.44 |
| 22. BUICK | 23,278 | 44 | 1.89 |
| 23. MERCURY | 20,229 | 37 | 1.83 |
| 24. DODGE | 54,454 | 98 | 1.80 |
| 25. CHRYSLER | 17,621 | 30 | 1.70 |
| 26. PLYMOUTH | 35,760 | 55 | 1.54 |
| 27. VOLVO | 11,953 | 16 | 1.34 |

*Rate per 1,000 registered vehicles

theft. Table 2 shows the rank ordering (worst to best) of automobile theft rates per 1,000 vehicles registered in 1992 for makes having fleet counts greater than 2,000 units.

As can be seen in the Table 2, Datsun vehicles were stolen at a rate 6.5 times greater than average and nearly three times greater than the second most at-risk make, Acura. At the other end of the scale, Cadillac, some models of which rank among the highest for theft risk in some U.S.

metropolitan areas (HLDI, 1990; Clarke and Harris 1992b). was among the least at-risk makes in British Columbia. Japanese imports constituted seven of the ten vehicle brands most at-risk of being stolen. The higher rates of theft for these makes triangulates with and reinforces the validity of the stated theft preferences of the auto-theft offenders we interviewed.

Table 3 shows the greater variation in theft risk rates when vehicles are aggregated by *model*. Omitting models with relatively small fleet counts, as does the HLDI for its theft risking ratings, would obscure evidence of auto-offender search patterns. We take the high rate of theft among models with small fleet counts to be indicative of very selective target searches by offenders whose auto stealing skills are limited to specific models. Models most at risk of theft (e.g., Datsun 200SX, Toyota Cargo Van) were identified as the "easiest" to steal by the offenders we interviewed. Several offenders identified these models as "training aids," by which they meant vehicles they sought out when first beginning their auto-stealing activities. This seems especially relevant given other findings. Recall that 80% of the thefts reported in the victimization survey occurred in well-lit locations. Semi-skilled, model-specific juvenile auto thieves increase their chances of finding the relatively scarce vehicle models sought when they go looking in large parking lots under good lighting where their quarry is most numerous and visible.

The passenger vehicle fleet was comprised of 14 body styles. Of these, two-door coupes, two-door sedans and three-door hatchbacks were stolen at rates disproportional to their fleet population counts. Consistent with other findings (Clarke and Harris. 1992b). the proportion of four-door station wagons stolen was much lower than their fleet proportions. Black and red vehicles were disproportionately stolen; brown automobiles appeared to be the least desirable to thieves in relation to their fleet proportion, followed by green. This color preference appears to be largely a function of sought-after body styles—joyriders like to steal two door coupes and hatchbacks, and these body styles are disproportionately painted black and red.

Perhaps the most important findings to inform the potential effectiveness of theft reduction strategies were those regarding theft rates as a function of vehicle age. The auto theft problem in British Columbia is largely attributable to the vulnerability of both door and ignition locks of Japanese vehicles manufactured six to ten years ago, depending on make. Figure 5 depicts the relative theft rates for selected makes⁶ by year of manufacture. Relative theft rates per 1,000 registered vehicles were

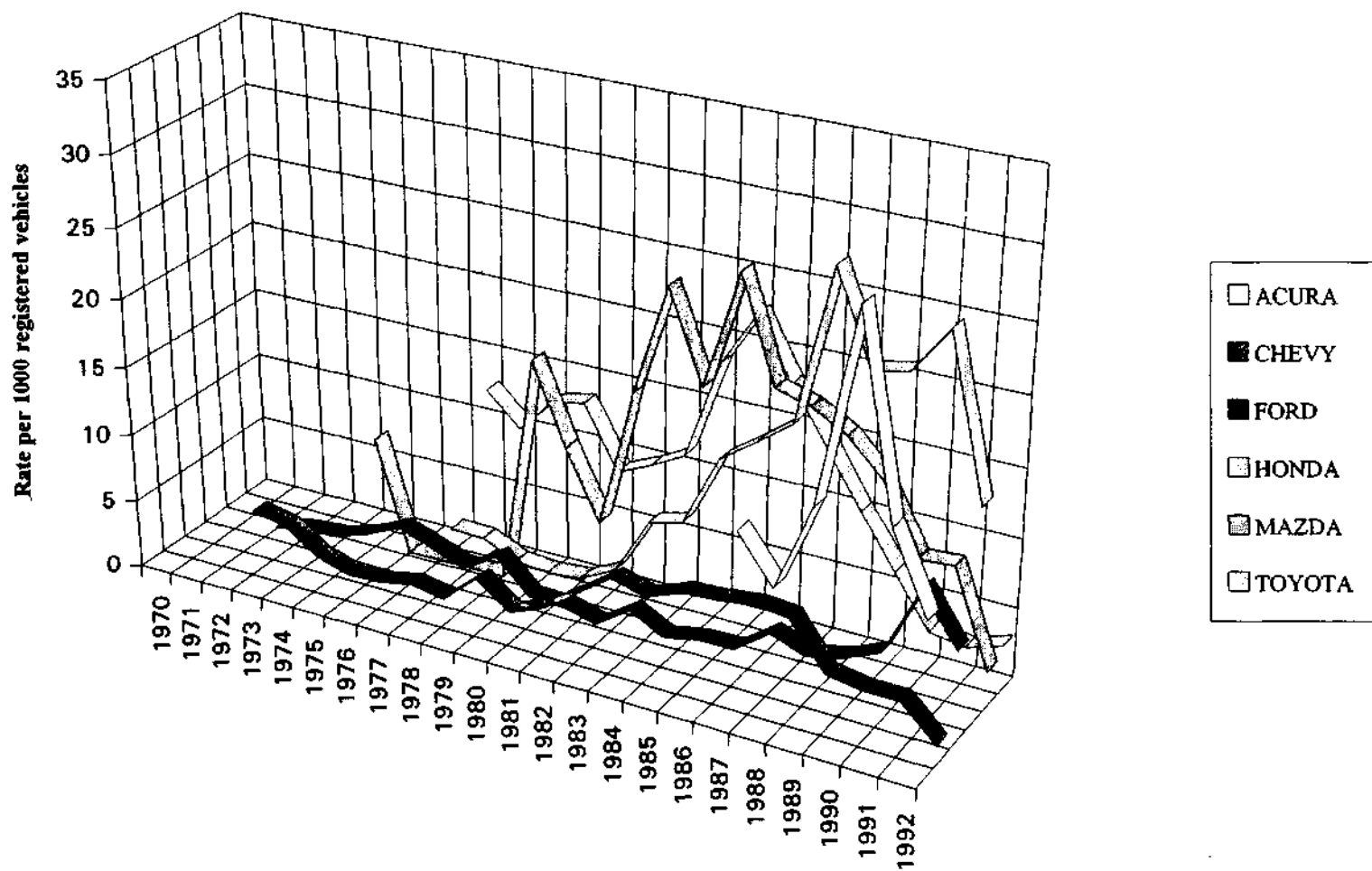
calculated for each year of manufacture for the selected makes. These rates are relatively invariant for Ford and Chevrolet, both domestic makes. Conversely, Japanese makes exhibit considerable variation in theft-risk rates by year of manufacture. Theft rates generally declined for all of the more recently manufactured vehicles.

**Table 3: Theft Rates* by Model-
Rank Ordering of the 20 Worst Performers
1992 ICBC Data—Fleet Count > 200**

| MAKE | MODEL | FLEET | STOLEN | RATE |
|-------------|-----------|--------|--------------------------|-------------|
| 1. TOYOTA | CARGO VAN | 966 | 119 | 123.19 |
| 2. TOYOTA | VAN LE | 1,432 | 154 | 107.54 |
| 3. TOYOTA | VAN DE | 210 | 20 | 95.24 |
| 4. DATSUN | 280Z | 1,816 | 172 | 94.71 |
| 5. DATSUN | 200 SX | 1,880 | 174 | 92.55 |
| 6. TOYOTA | MR2 | 614 | 48 | 78.18 |
| 7. DATSUN | 210 | 3,465 | 197 | 56.85 |
| 8. DATSUN | 240Z | 381 | 20 | 52.49 |
| 9. HONDA | PRELUDE | 8,239 | 400 | 48.55 |
| 10. MAZDA | RX7 | 3,405 | 136 | 39.94 |
| 11. DATSUN | 510 | 2,696 | 110 | 40.80 |
| 12. DATSUN | 710 | 656 | 24 | 36.59 |
| 13. DATSUN | 310 | 839 | 27 | 32.18 |
| 14. JEEP | YJ LA | 683 | 21 | 30.74 |
| 15. ACURA | INTEGRA | 5,162 | 111 | 21.50 |
| 16. SUZUKI | SAMURAI | 951 | 19 | 19.98 |
| 17. MAZDA | CAB P/U | 1,417 | 27 | 19.05 |
| 18. CHEVY | TRACKER | 763 | 111 | 21.50 |
| 19. PONTIAC | FIERO | 1,797 | 30 | 16.69 |
| 20. CHEVY | CAMARO | 11,466 | 189 | 16.48 |
| | | | FLEET AVERAGE | 6.63 |

*Rate per 1000 registered vehicles

Figure 5: Theft Rate by Year of Manufacture—1992 ICBC Data



There are several plausible explanations for the patterns observed. First, the material and design of ignition locks may vary by year. The spikes observed in the theft rates for each make may signal design and material changes in the ignition lock apparatus for those years of manufacture. Karman (1981) found that the disproportionate theft of Ford vehicles in the U.S. between 1969 and 1974 was attributable to substandard ignition locks. Upgraded in the following year, the theft rate for Ford vehicles declined 25%. Southall and Ekblom (1985) note that ignition lock vulnerability can increase significantly even within the first two years of operation due to wear, and there is evidence that these subtle changes in theft vulnerability are perceived by offenders. For example, offenders we interviewed told us that Hondas and Acuras manufactured after 1991 got harder to steal; the rates of theft for those years of manufacture support that contention. It is also possible that older vehicles are operated and parked in generally less secure areas or are less guarded against theft by their owners (Houghton, 1992).

Consumer testing organizations that report results in magazines such as *Consumer Reports* in the U.S., and *Which?* in the U.K. periodically test vehicle vulnerability to theft, as does the NHSTA and Swedish Research Committee for Automobile Repairs; however, these agencies only test newly manufactured vehicles. While it would be conceivable to obtain objective data on theft vulnerability for older vehicles, there would be little utility in doing so. The subjective states of mind offenders form through their involvement in the car crime culture predisposes them to selecting specific makes and models of specific years of manufacture for theft. From the view point of identifying potential strategies for preventing auto theft, actual rates of theft provide a sufficient reference point for identifying vehicles disproportionately at risk of theft.

Unrecovered Vehicles

Fewer than 600 of the nearly 7,000 passenger automobiles reported stolen to the ICBC in the participating municipalities went unrecovered in 1992. The majority of these unrecovered vehicles were manufactured prior to 1986. Model types cannot be determined for the most commonly unrecovered vehicles as they are categorized in insurance data in broad, body-style descriptions (e.g., "Ford Other Type 2 2WHDR"). Table 4 shows the rank order of identifiable models least frequently recovered in 1992.

**Table 4: Rank Order of Models Unrecovered
in British Columbia
1992 Insurance Data—Selected Municipalities**

| MAKE | MODEL* | NUMBER NOT RECOVERED | AVERAGE YEAR OF MANUFACTURE FOR UNRECOVERED VEHICLES |
|---------------|---------------|-------------------------------------|---------------------------------------------------------------------------------|
| 1) CHEVROLET | CAMARO | 40 | 1981 |
| 2) FORD | MUSTANG | 34 | 1987 |
| 3) HONDA | CIVIC | 16 | 1986 |
| 4) TOYOTA | COROLLA | 11 | 1979 |
| 5) VOLKSWAGEN | RABBIT | 11 | 1979 |
| 6) CHEVROLET | CORVETTE | 10 | 1975 |

* Aggregated models

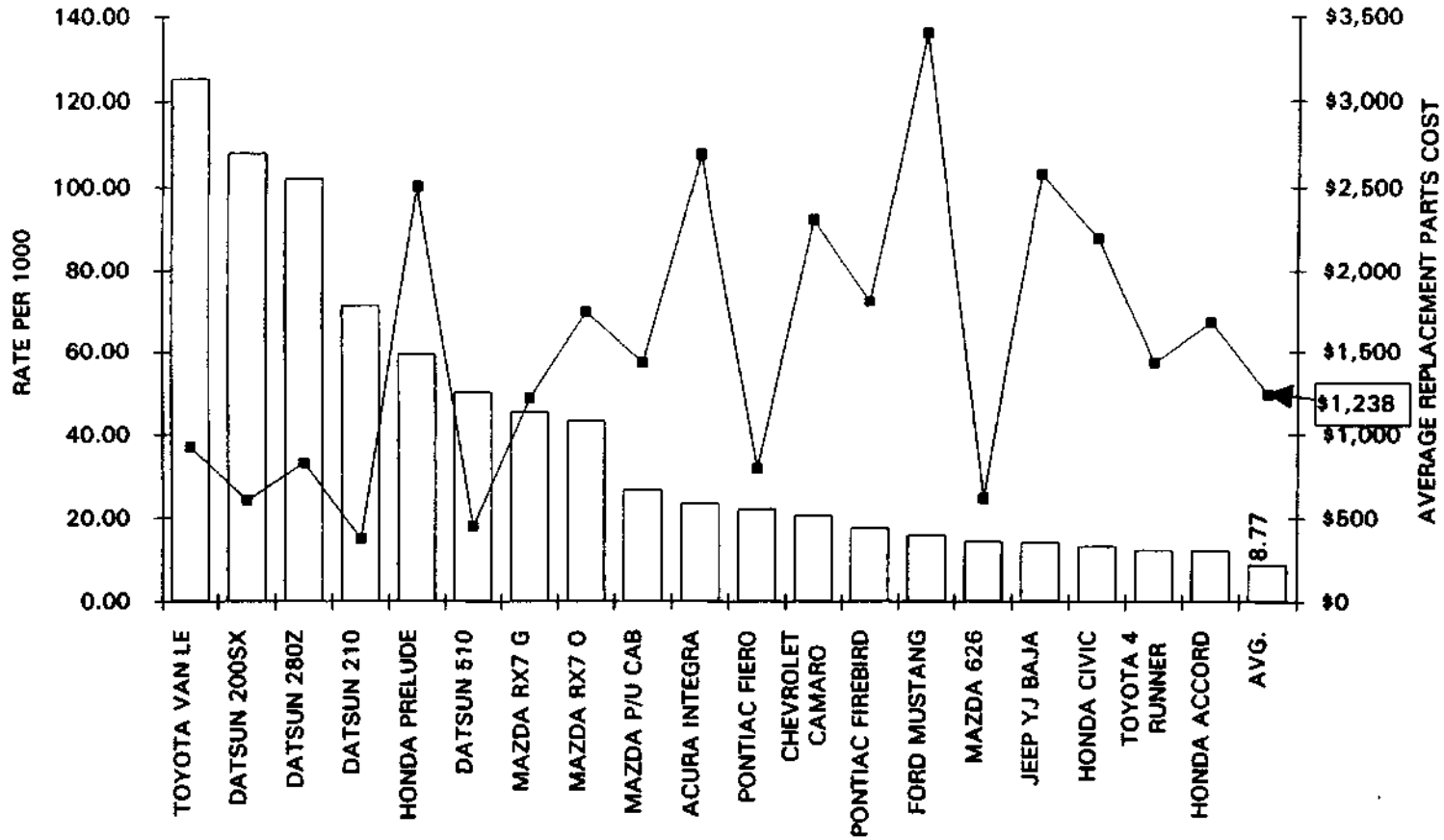
Make and model distributions of unrecovered vehicles suggest that "professional" auto theft is rare in British Columbia. Unrecovered theft counts for expensive makes such as Mercedes Benz, BMW and Porsche—identified as favored targets for professional auto thieves in some studies (Clarke and Harris, 1992b)—are insignificant in British Columbia. Only 32 of these vehicles went unrecovered in 1992, and they were older vehicles with little resale value.⁷ Unrecovered vehicle models are widely dispersed across the fleet of registered vehicles. If professional auto theft rings were operating in any significant way in the province, we would expect more recently manufactured vehicles with greater resale potential to go unrecovered, as well as a greater concentration of victimized makes and models. As depicted in Table 4, only three identifiable models experienced unrecovered theft counts greater than 11, and these model designations aggregated all derivations of the stipulated model. For example, ten different Honda Civic model derivations were registered in British Columbia in 1992. The theft rates per 1,000 for these ranged from a low of 2.04 for the Civic Two-Wheel Drive, to a high of 58.82 for the Civic CRX Si. Insurance fraud and joyriders' dumping of stolen vehicles in remote areas are the most likely explanations for the observed patterns in unrecovered stolen vehicles in British Columbia.

Regional Variation in Vehicle Theft Rates

The rarity of theft and sheer variety of vehicles in the registered fleet made micro-spatial analysis of auto theft risk unfeasible. There were a total of 1,333 models in the fleet of registered vehicles in British Columbia. 532 of which experienced at least one theft in 1992. When disaggregated by the most telling measure of theft vulnerability—year of manufacture—the number of vehicle derivations result in cell counts too small for meaningful statistical analysis of relative theft risk. Aggregating vehicles by make obscures the multitude of differences that exist within make classifications, differences that greatly influence the rational choices of offenders. From a joyrider's perspective, a Ford Crown Victoria station wagon has little appeal; in contrast, a Ford 5.0 Liter Mustang has great allure. Bearing these limitations in mind, we analyzed thefts rates in three regions of the province: the lower mainland (which includes Vancouver), the Interior and Northern regions and Vancouver Island (which includes Victoria, the capital city of British Columbia). Figures 6, 7 and 8 show the theft rates and average parts replacement costs for the most frequently stolen models in the three regions.

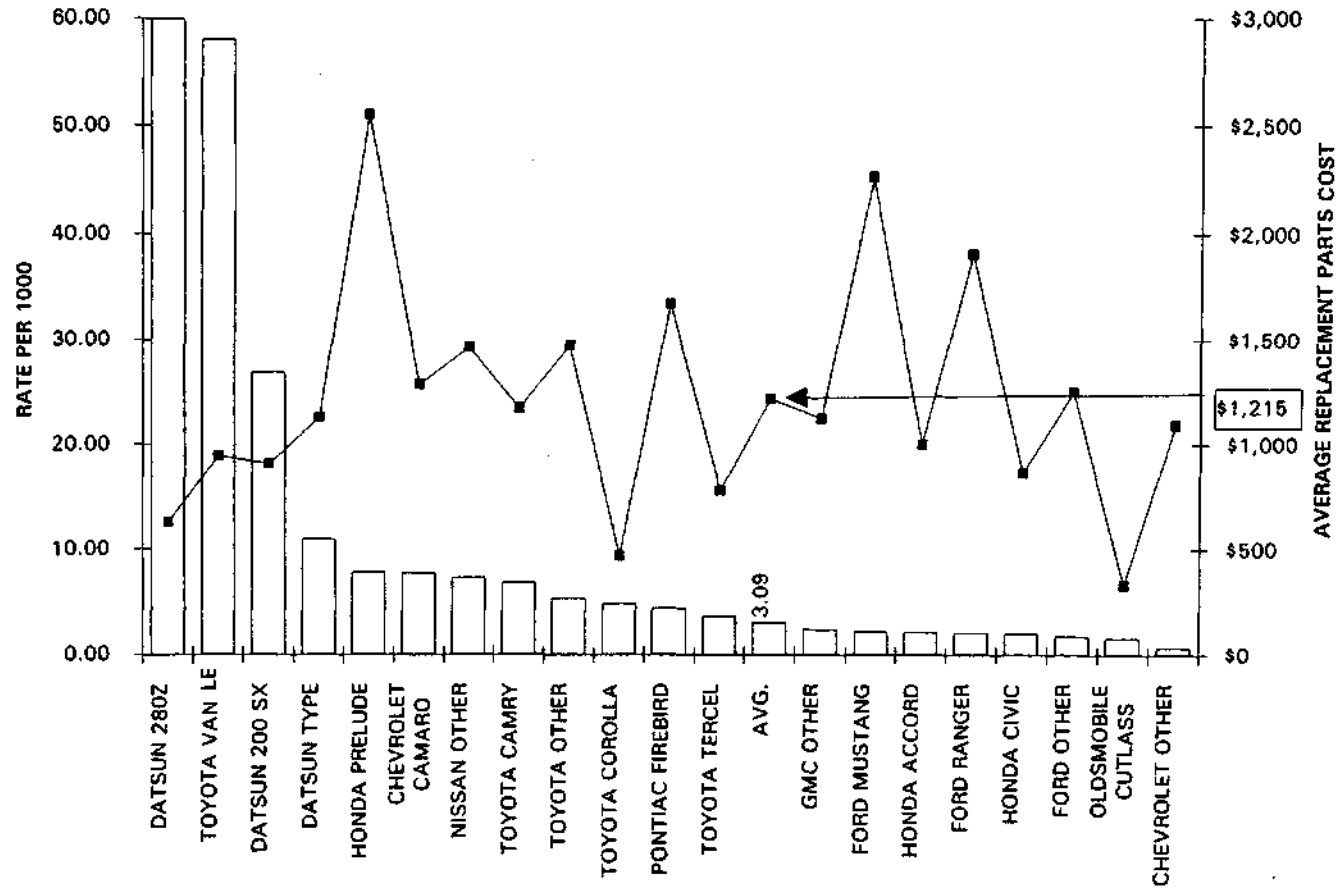
At the level of analysis of the car model, the patterns of theft in the three regions are somewhat different. Only three models were among the top ten by theft rate in all three regions: Toyota Van LE, a utility vehicle; Datsun 200 SX, a small sporty model last produced in 1988; and Datsun 280Z, a sports car last produced in 1983. No domestic model was among the top ten by theft rate in the lower mainland region that includes metropolitan Vancouver, although Pontiac Fiero and Chevrolet Camaro ranked eleventh and twelfth respectively in the region. All of the ten models with the highest theft rates in the lower mainland were Japanese models: four of the top ten carried the old Datsun nameplate. Nine of the ten models with the highest theft rates in the interior region were Japanese makes. Only one domestic model, the Chevrolet Camaro, was among the top ten models by theft rate in the interior region. On Vancouver Island, eight of the ten highest theft rate models were Japanese makes, and five of these were Datsuns. The one domestic model in the top ten on Vancouver Island was the Chevrolet Tracker, a small, Japanese-built four-wheel-drive vehi-

Figure 6: Theft Rates and Average Replacement Parts Costs—Lower Mainland*



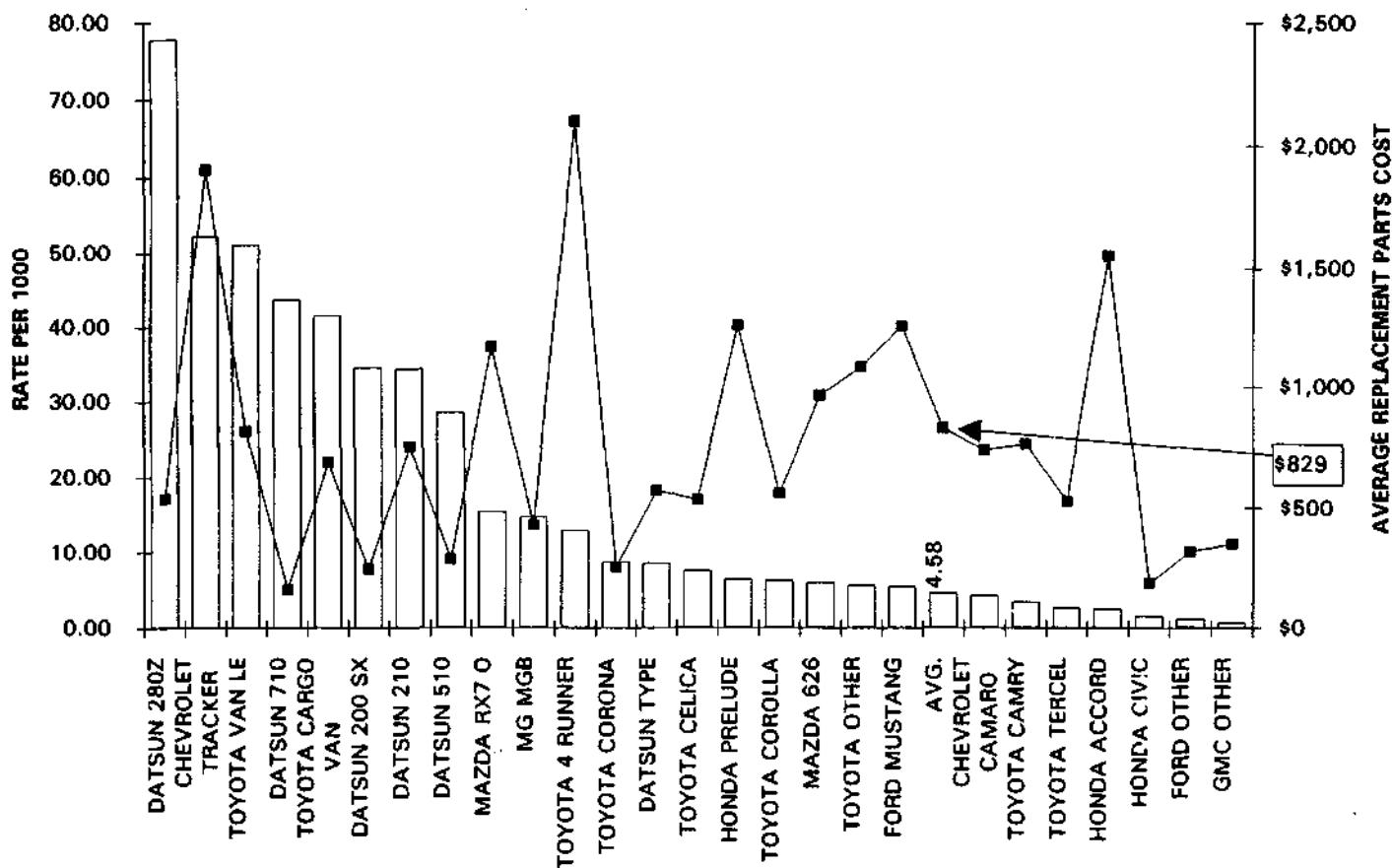
* Fleet Populations > 1000

Figure 7: Theft Rates and Average Replacement Parts Costs—Interior Region*



*All models stolen

Figure 8: Theft Rates and Average Replacement Parts Costs—Island Region*



* All models stolen

cle. The other high-rate model on the island was the MGB, a classic, popularly priced English sports car long out of production.

Average replacement parts costs were calculated by summing the total parts-replacement costs for a given model and then dividing that number by the number of recovered stolen vehicles in that aggregated model category. Again, average replacement parts costs do not distinguish between parts replaced due to damage or to parts stripped. Nonetheless, such measures can be taken as a crude indicator of the relative desirability of vehicles for the stripping and chopping markets. The picture presented is corroborated by what interviewed offenders told us. Observed spikes correspond to models offenders sought for their: (1) 4X4 thrill potential (such as Jeep YJ, Ford Ranger, Toyota 4 Runner, and Chevrolet Tracker), all of whose high average replacement-parts costs are likely attributable to damage sustained while driving off-road; (2) highly sellable parts stripped by youthful offenders (e.g., Honda Prelude⁸ and Acura Integra); and (3) chopping and resale marketability (e.g., Chevrolet Camaro and Ford Mustang). Observed patterns are perhaps more fully explained by the car crime culture operating in British Columbia.

CAR CRIME CULTURE IN BRITISH COLUMBIA

What follows is an attempt to outline certain aspects of the car-crime culture (Clarke and Harris, 1992a) in British Columbia, gleaned from interviews conducted with incarcerated individuals. We think that this car-crime culture partially explains the rapid increase in model-specific auto theft that began in the latter part of 1989. For the majority of the offenders interviewed, auto theft appears to be an activity incorporated into lives organized around pronounced thrill seeking, a continual search for "the rush"—the physiological effect of fear-induced adrenaline. Many offenders described thrill-seeking motivated auto theft as an extension of psychoactive drug use. Often the two activities are pursued simultaneously: "I love to drive when I'm trippin' on acid," is how one offender put it. While many offenders said the adrenaline rush they received from these activities did not lessen over time with repeated activities, an equal number described a state of diminishing returns on successive outings and said this led them to seek higher levels of excitement over time. This may partially explain the rise in destructive joyriding that began about three years ago. Thrill-seeking joyriders got bored with merely driving stolen cars. They started to perform car stunts and engaged in coordinated pack stealing whereby five and six friends would steal different cars at

roughly the same time and convene at remote locations to hold demolition derbies. These activities would tend to push up the auto theft rate for two reasons that relate to the car-crime culture operating here.

First, many of the older, theft-vulnerable Japanese models (most notably Datsuns) stolen for thrill-seeking activities are destroyed when stolen and written off due by the insurance company. Whereas less destructive forms of joyriding do not generally remove vehicles from the fleet, destructive forms do, and the pool of easy target vehicles declines. While this would tend to reduce overall opportunities for vehicle theft, destructive, thrill-seeking joyriders are sufficiently motivated to extend both their searches for the models thought to be the easiest to steal and their knowledge of model-specific theft techniques. Both extensions serve to enlarge the pool of target models, replenishing the set of car theft opportunities.

Second, while three or more juveniles might typically go along as passengers in the more innocuous forms of joyriding, destruction-motivated joyriding requires more cars, as they are quickly disabled during rough driving and crashes. Destructive joyriding appears to cause larger auto stealing groups (driver and passengers) to break into smaller groups of drivers who search for more targets. This change apparently expands the pool of technically competent thieves who in turn educate their friends. Both knowledge of theft techniques and the pool of potential offenders grow substantially. Insurance data for the type of time-series analysis needed to assess this model are not yet available, but we would expect to observe a fairly rapid increase in the theft rates of certain older Japanese models (Datsun 280Z, 200SX; Toyota Cargo Van, Corolla and Tercel), while others stayed relatively stable during the same period. We would also expect the data to show an increase in the number of these vehicles being written off. Shortly thereafter, theft rates should increase more gradually for a larger number of models (especially within certain make groupings) as the spread of technical theft skills expands the car crime culture.

As the theft of older Japanese vehicles became more commonplace in this car crime culture, little status would attach to the ability to steal them. The first wave of thrill-seeking joyriders would now have to differentiate themselves from the less skilled recent recruits. "I stole them when I was 11," said one 17-year-old offender when asked about the attractiveness of Datsuns. Older, more accomplished offenders derive status from their role as "technical advisors" to neophytes. At the same time, this advisor

role prods older offenders to seek greater technical competence in stealing cars and greater proficiency with an increasing number of auto theft tools.

For example, the ignition locks of older Japanese vehicles are typically defeated with either a close-cousin *key* (a key of similar topology accepted by the worn discs in an ignition lock) or a pair of barber scissors. When inserted forcefully, scissors will slice through the soft metal of the ignition lock barrel and work the lock mechanism as would the key. By contrast, domestic vehicles usually require the auto thief to first remove the keyhole plate (referred to as a "butterfly" lock) before employing a dent puller, which is screwed into the ignition lock. The lead weight on the dent puller is then thrown in order to dislodge the lock barrel from the cylinder. Once out, a screwdriver is inserted down the cylinder into a groove that under normal use accepts the end of the lock assembly after the topology of the key has properly set the lock's internal disks.

In the car-crime culture, any 12-year-old can steal older Japanese makes; "good" thieves can steal domestic models, and "really good" thieves can steal the most recently manufactured domestic models. Status seeking prompts offenders to progress to makes, models (and model years) whose theft requires more skill and the use of more specialized instruments. Even those not associated with a professional theft ring would at least like to practice on the kinds of vehicles sought by professionals in case the opportunity arose or for the status that accrues from demonstrating one's auto stealing prowess. This hierarchy of skill related status seeking serves to extend the pool of sought-after target cars. Other rational choices further diversify the kinds of cars that are stolen.

Seasoned offenders become acutely aware of police suspicions with respect to makes, models and model years. The offenders we interviewed talked about certain models being "heated-out," by which they meant stolen frequently enough to draw the constant attention of police patrols. While about 60% of the sample said they liked being pursued by the police, those with one or two previous court appearances said they began to think about the possibility of landing in jail, and this motivated them to differentiate their theft choices to avoid police detection. Offenders' desires to avoid apprehension also serves to widen the pool of sought-after models. Being quite cognizant of the volatile political climate surrounding the issue of police pursuits, repeat offenders say they are prepared to attempt to outrun police. The offenders we interviewed claimed they had been in an average of five police pursuits, half of which ended in apprehensions. In order to increase their chances of successful evasion, high-involvement

offenders started to look for vehicles that provided them better performance and better potential for eluding police in a pursuit. The evasion strategies opted for by the most active offenders in the sample included exploiting police officers' inhibitions about taking their cruisers off-road. These offenders' vehicles of choice became, quite naturally, those with good off-road characteristics—4X4 pick-ups or utility vehicles.

More general thrill-seeking motives also appear to have expanded the pool of desirable target vehicles into the 4X4 categories. The subset of diminishing-thrill joyriders was drawn to this class of vehicle to keep stimulation levels high. Many areas of British Columbia are mountainous, and the logging and fire roads that traverse the landscape provide ample opportunity for thrilling driving. Susceptible as they are to the images of larger pop culture, we anticipate this group of offenders to look for the rush via the recently expanded pool of vehicles equipped with dual airbags—taking these vehicles for the express purpose of driving them into fixed objects as featured in a popular music video. The vehicle theft risk analysis presented in this paper uses insurance theft claim data for a single year. We are working to obtain multiple-year data with which to more fully explore aspects of the car crime culture theorized here.

CONCLUSION

Police efforts to reduce auto theft in the province of British Columbia have resulted in a number of recently announced policy initiatives aimed at both the youthful Joyrider and professional auto thief. Recommendations from the CLEU investigation that focused on professional theft stress more stringent vehicle registration procedures, and regulation of the used parts and salvage industries. The BCACP study's focus on youthful offenders stresses the need for police to collect more detailed information about auto theft, and develop more robust methods for analyzing patterns and trends to assist police in early pattern identification and intervention. This effort likewise signals a break in the noted tendency of police personnel to downplay the salience of juvenile perpetrated auto theft for temporary appropriation of vehicles vis a vis theft by "professionals" (Clarke and Harris, 1992a:4-5).

In February 1994, the BCACP endorsed a number of recommendations for reducing auto theft including several proposed adjustments to young offenders legislation and prosecution practices in an effort to signal the car crime culture that auto theft will be taken seriously. Even if the

proposed changes are enacted, it will be some time before their impact can be measured. We agree with Clarke and Harris' (1992a:3) contention that "there is greater scope for increasing the difficulties of auto theft than for increasing the [offender] risks or reducing motivation." A commitment on the part of automobile manufacturers to make anti-theft technology a manufacturing priority remains the best prospect for long term reductions in this crime (Brill, 1982; Clarke and Harris, 1992a). In the interim, research is needed to evaluate the efficacy of various anti-theft devices widely available today.

Prior to the study, ICBC literature made available to the public suggested that the risk of auto theft did not vary across the fleet of passenger vehicles. In contrast, the study found that the risk of theft varies greatly. Literature documenting model-specific theft risk rates has shown highly skewed distributions in Britain and Wales (Houghton, 1992), and in selected U.S. cities (HLDI, 1990)⁹. The BCACP study provides the first indication that the entire fleet of vehicles manufactured under Japanese nameplates (except the expensive, luxury subsidiary name plates Lexus and Infiniti) are disproportionately at risk of theft in British Columbia. In the near term, expanded use of after-market theft prevention devices appears to offer the most immediate prospects for preventive gains. The results of the study suggest that car owners need to protect their vehicles differentially: A \$60 steering-wheel bar lock may suffice for the owners of 10-year-old Datsuns and Toyotas sought by opportunistic thrill-seekers, while owners of Ford 5.0 Liter Mustangs would be well advised to a layer anti-theft technologies—adopting an after-market steering-wheel bar lock for its high visibility, as well as equipping the vehicle with an alarm and a fuel disable switch. The focus of offender target choice in British Columbia appears to be make, model and especially model-year specific; these factors will inform the choice of technologies to best employ. To this end, the ICBC is taking responsibility for incorporating what has been learned into its existing public education programs, and is developing mechanisms for periodically determining fleet theft risk rates and informing policyholders of the results. The ICBC is also exploring possible financial incentives in the form of adjusted insurance rates and deductible amounts that will cause policyholders to take affirmative actions to better protect their automobiles.

Aspects of the car-crime culture identified above give us reason to believe that the selective installation of anti-theft technologies by owners of vehicles most at risk of theft will not result in widespread target

displacement. Better key guardianship would reduce province-wide auto theft opportunities considerably. Regarding vehicles stolen by forceful means, even the most prolific young offenders interviewed restricted their auto stealing activities to a very limited pool of vehicles requiring little theft technique competence. Relatively few offenders are skillful or expressed interest in becoming skillful at stealing non-Japanese vehicles (including encumbering themselves with the tools necessary for committing such thefts, such as dent-pullers) as little incentive exists in the province for doing so. The vast majority of the offenders we interviewed said they avoid cars equipped with anti-theft devices of any sort. Auto theft is widespread because the majority of young people in British Columbia attach no moral culpability for stealing cars for "fun," and the theft of certain models require the auto thief to exercise no more sophistication than jamming one half of a pair of scissors into the ignition to steal them. Of course there is no way of predicting what "thrill-seeking" activities youths would engage in if automobiles became more difficult to steal. However, several of the interviewed offenders described stolen auto availability as an anonymity-induced incentive to commit other crimes, and the diffusion effects (Clarke and Weisburd, 1994) of auto theft reduction efforts merit research.

The study undertaken by the BCACP represents a first attempt in British Columbia to engage senior administrators in a variant of problem-oriented policing focused on a serious province-wide problem. This effort required the cooperation of a wide variety of public and quasi-public agencies in the search for potential strategies for reducing the growing problem of auto theft. The process has been favorably reviewed by the police community in British Columbia, and serves as a model for collective crime prevention action involving multiple levels of governmental and quasi-public agencies. Clarke and Harris (1992a:45) note that a more complete "understanding of auto theft will not necessarily enlarge policy options." Perhaps the main value of studies like this derive from the processes involved as they unfold. Recognizing the shortcomings of the existing police response to the problem of auto theft, and their own research limitations, police leaders in British Columbia sought to make better use of the resources available to them. The end result is an improved relationship between the police, insurance and academic communities in British Columbia, and commitments on the part of all to work jointly in the future in the area of crime prevention efforts.



Acknowledgments. This study could not have been completed without the assistance of numerous individuals. Particular thanks are due to the BCACP for their sponsorship, especially to Superintendent Don Render. RCMP (retired), whose vision inspired this project and to Superintendent Bruce Beaudreau, commanding officer of the RCMP Burnaby detachment, whose extensive and supportive work as chair of the BCACP Auto Theft Committee made the project feasible. Special thanks are also due to personnel at the ICBC, who provided the major source of funding, and to systems analyst Loren Purcas, who managed to squeeze our data retrieval requests into his work schedule. We would also like to acknowledge the generous assistance of the Ministry of the Attorney General of British Columbia, and to the Victim Services Volunteers throughout the province who administered the victimization survey component of this research.

NOTES

1. In total, 506 surveys were completed. The sample included victims chosen in a manner so as to give a representative picture of the province as a whole. Funding for the project could have been disproportionately spent on this component of the study had the chiefs not come up with an innovative approach. Victim services volunteers working with the police were utilized for conducting telephone surveys in their respective jurisdictions with persons whose vehicles had been stolen within the previous six months. The survey instrument was developed by the authors and pre-tested in one jurisdiction prior to making final changes to the instrument. The pretesting also helped with the identification of potential interviewing problems, and informed the development of a training tape featuring a mock interview that was mailed to the geographically dispersed volunteers.

Given time and financial constraints, as well as the geographical dispersion of police agencies from which police files were to be drawn, a non-probabilistic sampling technique was employed. Police personnel and victim services volunteers selected files working backward in 1992 from the most recently filed police reports. Selection criteria were that the victim be a private owner/leasee (as opposed to a car dealer, rental car company, etc.), be within a local call radius, and the stolen vehicle be a passenger car or truck. Three attempts were made to contact the victim for the 20-minute survey. Fewer than 3% of victims contacted refused to complete the survey. Language problems in some cities accounted for another 5% non-selection.

2. Several factors inhibited our ability to obtain a random sample of offenders. First, very few persons are incarcerated for auto theft in British Columbia. In 1991, only 31 persons (adults and juveniles combined) spent any time in jail for motor vehicle theft (British Columbia, Ministry of the

Attorney General, 1993). Second, auto thieves are not readily identifiable as such in corrections records. Few persons are observed actually stealing vehicles. When apprehensions are made, cases much more frequently proceed under sections of the criminal code governing possession of stolen property.

The Corrections Branch of the Attorney General's Ministry stipulated as one of its terms of agreement that the research not involve "substantial time commitments" by corrections personnel. A manual search through offender files to identify auto theft offending versus those incarcerated for possession of stolen property from which to establish a sampling frame was deemed infeasible. Instead, correctional staff at regionally dispersed youth closed and open custody facilities were contacted and asked to assist in developing a sample of residents involved in auto theft regardless of the charge for which they were incarcerated. These staff members then made solicitations to residents whose auto theft activities were known, posted notices regarding the research and secured parental /guardian consent for residents willing to participate.

3. The BCACP Committee initially sought to administer the survey in three regions of the province—the interior, lower mainland and Vancouver Island—but was refused access to students on Vancouver Island. Students in grades 8 and 11 (age groups of those just shy of being licensed and those just turning 16) were sampled in all secondary schools in one lower mainland municipality (population 160,00), and in two secondary schools in one municipality in the interior region (population 86,000). The university human subjects ethics review committee imposed a sampling frame that required separate advance permissions from school boards, schools, individual teachers, students parents, and the student respondents themselves. As a result, the sample is intensely self-selected rather than a probabilistic sample. Few students or parents refused permission.

4. This sample of 1,254 grade-eight and -eleven students (mean age 14.88), reported stealing a total of 231 vehicles during the previous year (assuming that each reported event involves a separate vehicle). The self-reported auto stealing of four respondents accounts for half of this total. Hampered as we are by the non-probabilistic sampling technique required by the university human subjects research ethics committee, we will use the reported rates of auto stealing in this sample to crudely estimate the proportion of province-wide auto theft attributable to this age cohort.

There were approximately 84,000 students attending grade eight and eleven in the province in 1992. Students sampled in this study live in metropolitan areas experiencing moderate-to-high levels of auto theft. If the two most prolific auto stealers (those claiming to have committed 30

and 50 thefts in the past year) were discounted, we assumed similar levels of auto stealing, and each self-reported theft constituted a separate event, we would conclude that the 5% of high-school students involved in auto theft (over half of whom reported stealing two or fewer vehicles) were responsible for roughly 10,000 of last year's stolen autos [(151/1,252) X 84,000].

5. PIRS data for 1002 data were not available at the time of analysis; however, the total motor vehicle thefts differ by fewer than 150 vehicles in the two years. In 1091 there were 24,416 thefts and/or attempted thefts, 24,268 were reported in the following year (Ministry of Attorney General of British Columbia. 1993).

6. Datsun was excluded because its high theft rate changes the scale of the graph and obscures observable yearly fluctuations for the remaining vehicles.

7. The mean year of manufacture for unrecovered Mercedes Benz models was 1080 (N=12); BMW. 1981 (N=6); and Porsche. 1979 (N=13).

8. Prelude seats are sought as apartment furniture; they apparently provide good lower back support during the many hours some offenders spend playing Sega's Mortal Kombat.

9. For example, in Los Angeles, the theft rate per 1,000 registered vehicles for the Volkswagen Jetta (model years 1987-90) was 142.9 vs. the metropolitan area average of 15.4 (HDLI. 1990). Houghton (1992) identifies certain sporty Ford models (Capri, Cortina and Escort) to be much more at risk of theft in Britain and Wales.

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