Problem-Oriented Guides for Police
Problem-Specific Guides Series
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CARJACKING

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About This Guide

About the Problem-Specific Guides Series

The *Problem-Specific Guides* summarize knowledge about how police can reduce the harm caused by specific crime and disorder problems. They are guides to prevention and to improving the overall response to incidents, not to investigating offenses or handling specific incidents. Neither do they cover all of the technical details about how to implement specific responses. The guides are written for police—of whatever rank or assignment—who must address the specific problem the guides cover. The guides will be most useful to officers who:

- **Understand basic problem-oriented policing principles and methods.** The guides are not primers in problem-oriented policing. They deal only briefly with the initial decision to focus on a particular problem, methods to analyze the problem, and means to assess the results of a problem-oriented policing project. They are designed to help police decide how best to analyze and address a problem they have already identified. (A companion series of *Problem-Solving Tools* guides has been produced to aid in various aspects of problem analysis and assessment.)
- **Can look at a problem in depth.** Depending on the complexity of the problem, you should be prepared to spend perhaps weeks, or even months, analyzing and responding to it. Carefully studying a problem before responding helps you design the right strategy, one that is most likely to work in your community. You should not blindly adopt the responses others have used; you must decide whether they are appropriate to your local situation. What is true in one place may not be true elsewhere; what works in one place may not work everywhere.
- **Are willing to consider new ways of doing police business.** The guides describe responses that other police departments have used or that researchers have tested. While not all of these responses will be appropriate to your particular problem, they should help give a broader view of the kinds of things you could do. You may think you cannot implement some of these responses in your jurisdiction, but perhaps you can. In many places, when police have discovered a more effective response, they have succeeded in having laws and policies changed, improving the response to the problem. (A companion series of *Response Guides* has been produced to help you understand how commonly-used police responses work on a variety of problems.)
- **Understand the value and the limits of research knowledge.** For some types of problems, a lot of useful research is available to the police; for other problems, little is available. Accordingly, some guides in this series summarize existing research whereas other guides illustrate the need for more research on that particular problem. Regardless, research has not provided definitive answers to all the questions you might have about the problem. The research may help get you started in designing your own responses, but it cannot tell you exactly what to do. This will depend greatly on the particular nature of your local problem. In the interest of keeping the guides readable, not every piece of relevant research has been cited, nor has every point been attributed to its sources. To have done so would have overwhelmed and distracted the reader. The references listed at the end of each guide are those drawn on most heavily; they are not a complete bibliography of research on the subject.

- **Are willing to work with others to find effective solutions to the problem.** The police alone cannot implement many of the responses discussed in the guides. They must frequently implement them in partnership with other responsible private and public bodies including other government agencies, non-governmental organizations, private businesses, public utilities, community groups, and individual citizens. An effective problem-solver must know how to forge genuine partnerships with others and be prepared to invest considerable effort in making these partnerships work. Each guide identifies particular individuals or groups in the community with whom police might work to improve the overall response to that problem. Thorough analysis of problems often reveals that individuals and groups other than the police are in a stronger position to address problems and that police ought to shift some greater responsibility to them to do so. Response Guide No. 3, *Shifting and Sharing Responsibility for Public Safety Problems*, provides further discussion of this topic.

The COPS Office defines community policing as "a philosophy that promotes organizational strategies, which support the systematic use of partnerships and problem-solving techniques, to proactively address the immediate conditions that give rise to public safety issues such as crime, social disorder, and fear of crime." These guides emphasize *problem-solving* and *police-community partnerships* in the context of addressing specific public safety problems. For the most part, the organizational strategies that can facilitate problem-solving and police-community partnerships vary considerably and discussion of them is beyond the scope of these guides.

These guides have drawn on research findings and police practices in the United States, the United Kingdom, Canada, Australia, New Zealand, the Netherlands, and Scandinavia. Even though laws, customs and police practices vary from country to country, it is apparent that the police everywhere experience common problems. In a world that is becoming increasingly interconnected, it is important that police be aware of research and successful practices beyond the borders of their own countries.

Each guide is informed by a thorough review of the research literature and reported police practice, and each guide is anonymously peer-reviewed by a line police officer, a police executive, and a researcher prior to publication. The review process is independently managed by the COPS Office, which solicits the reviews.

For more information about problem-oriented policing, visit the Center for Problem-Oriented Policing online at www.popcenter.org. This website offers free online access to:

- The *Problem-Specific Guides* series
- The companion *Response Guides* and *Problem-Solving Tools* series
- Special publications on crime analysis and on policing terrorism
- Instructional information about problem-oriented policing and related topics
- An interactive problem-oriented policing training exercise
- An interactive *Problem Analysis Module*
- Online access to important police research and practices
- Information about problem-oriented policing conferences and award programs

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The Problem of Carjacking

What This Guide Does and Does Not Cover

This guide begins by describing the problem of carjacking[a] and reviewing factors that increase its risks. It then identifies a series of questions to help you analyze your local carjacking problem. Finally, it reviews responses to the problem and what is known about these from evaluative research and police practice.

Carjacking is but one aspect of the larger set of problems related to robbery, vehicle theft and other crimes involving vehicles. This guide is limited to addressing the harms created by carjacking. Related problems not directly addressed in this guide, each of which require separate analysis, include:

- drive-by shootings
- home invasion robbery
- robbery of taxi drivers
- street robbery
- vehicle theft

Some of these related problems are covered in other guides in this series, all of which are listed at the end of this guide. For the most up-to-date listing of current and future guides, see www.popcenter.asu.edu.

General Description of the Problem

Carjacking refers to "a completed or attempted theft in which a motor vehicle is taken by force or threat of force."[1, b] In the United States, it is classified by the FBI as a type of robbery[c], but is also similar in some respects to vehicle theft. As is the case with other property crimes, some proportion of reported carjackings are falsely reported as part of an insurance-fraud scheme.[2]

Even though carjacking causes more fear than many other crimes and has become a major problem, we have limited research knowledge about carjackings and effective ways to prevent them.[3, d]

The carjacking rate in the United States, measured by the number of attempted and completed carjackings per 100,000 population, was, on average, 21 from 1993 to 1997, dropping to 13 in

[a] Carjacking is alternatively termed "vehicle hijacking."
[b] The U.S. federal statute governing carjacking was enacted in 1992 as the Anti-Car Theft Act, now codified as 18 U.S.C. § 2119.
[c] This is the case in both its Uniform Crime Reports and National Incident-Based Reporting System.
[d] One explanation for the limited research is that the FBI's crime recording systems—the Uniform Crime Reports and the National Incident-Based Reporting System (NIBRS)—do not categorize carjacking separately. Although the National Crime Victimization Survey gathered carjacking data for a few years, it has not done so consistently to allow for longer-trend analysis.

the period from 1998 to 2002.[4] From 1993 to 2002, on average, there were approximately 38,000 carjacking victimizations annually,[5] which accounted for less than 10% of overall annual robberies (more than 400, 000).[6] From 2007 to 2016,[e] there were 41,424 completed carjackings reported in NIBRS, representing 5.5% of its total robberies.[7] The U.S. National Crime Victimization Survey does not currently inquire about carjacking, specifically. In 2020, during the early phases of the COVID-19 pandemic, there were scattered reports that while some crime types decreased, carjackings increased.[8] Although it seemed plausible that as vehicles became harder to steal by theft due to newer anti-theft technology, some offenders would resort to carjacking[9], longer-term trends reveal that nonfatal carjacking rates have decreased by 78% from 1995 to 2021.[10]

Harms Caused by Carjacking

Carjackings, although comprising only a small proportion of overall robberies, generate more collective fear than many other crimes.[11] The crime can be quite sudden, quick and violent. It's hard to predict and prevent a carjacking. Carjackers are typically armed. Because carjacking entails the use or threat to use force, the police responses to reported carjackings are more likely to lead to vehicle pursuits and armed confrontations with suspects, thereby increasing risks of harm to officers, suspects and innocent bystanders. A carjacking victim suffers, at a minimum, the temporary loss of the vehicle and any property in it and can suffer serious or fatal bodily injuries. Fatal carjackings and children kidnapped in carjackings tend to generate media coverage, which can lead the public to overestimate the risk of these outcomes.[12, f] Among nonfatal carjacking victims, about three-fourths face an armed offender; one-fourth are injured, including 9% with serious injuries; 14% are treated in hospital emergency departments; and 1% are hospitalized.[13] The median value of vehicles carjacked is approximately $7,300.[14] Most carjacking victims either did not have vehicle insurance or did not report the crime to their insurance company.[15] Once a carjacking is reported, the victim often sees higher vehicle insurance premiums.

Factors Contributing to Carjacking

Understanding the factors that contribute to your problem will help you frame your own local analysis questions, determine good effectiveness measures, recognize key intervention points, and select appropriate responses.

Carjacking Methods

Carjacking is highly opportunistic.[16] Carjackers' success depends on their awareness of suddenly emerging opportunities and the act tends to occur quickly.[17] Felson et al. summarized the findings of other carjacking researchers as follows:

> …[C]arjackings are uniquely dependent on immediate action: The opportunity is gone in a few seconds, affording no time for hesitation.

[e] NIBRS data were not nationally representative. In 2016, only about one-third of all law enforcement agencies that participated in the UCR Program reported crime data via NIBRS.

[f] It is estimated that on average, about 27 homicides involved carjacking each year in the United States. Eight infants were reported to be kidnapped in carjackings for one year (Klaus, 1999).

> Carjackings may establish a sense of normalcy to lull the victim before the sudden attack commences. For example, the offender asks the victim for the time, to help light a cigarette, or use other methods to create a false sense of security. Carjackings usually do not involve advanced planning prior to the very short time gap between noticing the opportunity and seizing the moment. …'situational awareness' is essential for carjackers to act when the opportunity suddenly appears. Sometimes the offender finds a moment when the victim is distracted. Offenders may also use a blitz method, with several accomplices and/or firearms allowing sudden seizure of control.[18]

Carjacking attempts and successful completion are a result of multiple factors.[19] Most carjackings involve a weapon: typically, firearms or knives.[20] When there are more offenders than victims present, a carjacking is more likely to succeed.[21] Consequently, carjacking tends to be a group crime, involving planning and calculation,[22] although, most carjackers do not extensively case their victims because carjacking opportunities rapidly change.[23]

To succeed, a carjacker needs to prevent the victim from using their own vehicle as a resistance device, such as by making the victim fear that they will be killed if they resist.[24] Although victim resistance can prevent the vehicle from being stolen, it increases the victim's risk of injury.[25]

Characteristics of Carjackers and Their Victims

As is the case for most crime types, carjackers tend to be male and young, typically under age 29.[26] In some cities, young teens are increasingly committing carjacking.[27] Carjackers' gender is even more concentrated: national and regional surveys show that at least 87% of all carjackings were committed by male offenders.[28]

Carjacking victims tend to be older than carjackers, although frequent carjacking victims tend to be young. Some studies have shown that older or female drivers tend to be targeted.[29] Males and females appear to be equally likely to be nonfatal carjacking victims, but, overall, most carjacking victims are male.[30]

Location

Carjacking is more likely to occur in urban than in suburban or rural areas.[31] The national carjacking victimization rate for urban residents is 10 times higher than that of rural residents (3.1 per 10,000 population compared to 0.3) and nearly 2 times higher than that of suburban residents (3.1 compared to 1.7).

Carjackings are most likely to take place at or near the victim's home.[32, g] More than 70% of carjackings occurred either in an open area (e.g., on street); adjacent to a public transportation hub (e.g., a bus, subway, or train station, or an airport); in parking lots or garages; or near commercial places, such as gas stations, stores, restaurants, bars, or office buildings.[33, h] High-

[g] Although rare, some carjackings occur as part of home invasion robberies (Young and Borzycki, 2008).
[h] The risk of carjackings per street kilometer is by far the greatest at gas stations (Felson et al., 2022).

risk locations can vary across cities: an analysis of carjackings in Detroit, Michigan,[34] revealed that carjacking was especially likely to occur within one block of the following types of places:

- service stations
- convenience/grocery/liquor stores
- bus stops (where carjackers can wait for opportunities without suspicion)
- drug markets
- restaurants
- demolished building sites

Keep in mind, though, that carjackings are relatively rare events that can occur any place where vehicles and pedestrians are near one another, so it likely will be difficult to find specific locations where carjackings commonly occur.

Time and Season

Carjackings can occur at any time of the day, with some research finding that approximately two-thirds of carjackings in the United States occur at night[35] and other research finding that carjackings take place most frequently during the day when more cars are on the road.[36] The overall rate of completed carjackings is higher for day incidents than evening incidents.[37]

Similarly, the research findings as to when carjackings occur is also mixed: some finding it more likely on Saturday and Sunday, and some finding weekdays to be more popular.[38] Cold-weather months (November and December in the United States) and hot-weather months (June, July and August in the United States) all have been shown to be high-risk months for carjacking.[39] Different months offer different crime opportunities: months that include heavy shopping (e.g., the winter holidays) brings many vehicles out in public, but so too do warm-weather months.

Carjacking times seem to correspond with people's routine activities (e.g., more free time on weekends, more shopping, travel, and parties during the holiday season) and with the natural environment (e.g., darkness reduces natural surveillance, warm weather encourages people to have more activities outside).

Motives

Like other types of street offenders, carjackers are motivated by two forces: one is for money or other instrumental needs and the other is for social status or other expressive needs.[40] They can use a carjacked vehicle for committing some other crime,[41] escaping immediate danger,[42] converting to cash (e.g., for drugs and alcohol, gambling, sex;)[43], or for valuable parts and accessories to sell or install in offenders' own vehicles.[44] For offenders working with organized auto theft rings, carjacking is preferred to theft because it assures that the ignition key will accompany the stolen vehicle and the vehicle will not be damaged.[45] Drive-by shootings or joyriding are also common motives for carjacking.[46] These types of carjackings are closely associated with urban street cultural norms, such as reprisal, being thrilled, showing off (or "flossing"), reputation, or maintaining honor.[47] Carjackers are variously highly rational and calculating for some carjackings, and highly impulsive for others.[48]

Understanding Your Local Problem

The information provided above is a generalized description of carjacking. To better use the information and effectively prevent carjacking in your community, you must combine the general findings of carjacking with a specific understanding of your local stakeholders and your local problem. Analyzing the local problem carefully will help you design a more effective response strategy.

Stakeholders

In addition to criminal justice agencies, the following groups have an interest in the carjacking problem and ought to be considered for the contribution they might make to gathering information about the problem and responding to it:

- *Vehicle manufacturers.* The design and installation of anti-theft technology can affect carjacking risks.
- *Vehicle dealerships.* Vehicle dealers have the best opportunity to communicate personally with vehicle buyers about the use of anti-theft technology.
- *Insurance companies.* Vehicle insurance companies have policies covering at least some losses arising out of a carjacking under comprehensive coverage. Insurance companies and drivers have a financial interest in reducing the risk of carjacking.

Asking the Right Questions

The following are some critical questions you should ask in analyzing your particular problem of carjacking, even if the answers are not always readily available. Your answers to these and other questions will help you choose the most appropriate set of responses later.

Incidents

- How many carjacking incidents have occurred in your jurisdiction?[i] How many and what proportion are reported to police? How many and what proportion occur, but go unreported?
- Are the number of carjackings increasing or decreasing in recent years?
- How concerned are residents about carjacking? Who appears to be most concerned?
- In what proportion of incidents are offenders identified? Apprehended?
- In what proportion of incidents are vehicles recovered? Are recovered vehicles damaged? Where are they recovered?
- What vehicle makes or models are most likely to be carjacked in your jurisdiction? Does this vary across locations or over time in your jurisdiction?
- What methods are most used to distract and then coerce drivers into giving up their vehicle?

[i] In some police agencies, carjackings are lumped in with other robberies in the records system. The Minneapolis Police Department created a new offense code to classify carjacking separately from auto theft or robbery (Bergal, 2020; National Public Radio, 2021).

- What type of weapons, if any, are displayed or used? What type of physical force, if any, is used (e.g., punching or kicking, dragging, shoving)?

Offenders

- What is known about offenders' demographics (e.g., age, gender, race)? Is there anything different in the profile of this group of offenders from offenders in your community, generally?
- Are there prolific offenders in your jurisdiction? Identifying repeat offenders is necessary for focused-deterrence law enforcement, prosecution and incapacitation.[49]
- What are offenders' motives for carjackings?
- Is a carjacking more likely to be committed by a group of offenders or one offender alone?

Victims

- What physical injuries have occurred to victims?
- Were passengers, including children, abducted? If so, does the abduction appear to have been intentional or unintentional?
- Were any carjacking victims killed?
- Did victims resist the carjacking? If so, how?
- Who is more likely to be victimized in terms of age, gender, and race? Is there anything different in the profile of this group of victims from victims in your community, generally?
- Did the carjacker and victim know one another before the carjacking occurred?
- What circumstances, if any, made victims especially vulnerable (e.g., intoxicated, distracted, parked or driving in a poorly lit area, driving a vehicle type known to be desired by carjackers)?
- Were the carjacking victims alert and aware of carjacking risk and carjacking tactics?
- What proportion of carjacking victims had comprehensive vehicle insurance?

Time and Location

- Where are carjackings occurring in your community (In what areas? Around what types of facilities? On and near what type of roadways?)
- Are carjackings concentrated by hour of day, day of week, or month/season of the year? If so, why might that be?

Measuring Your Effectiveness

Measurement allows you to determine to what degree your efforts have succeeded and suggests how you might modify your responses if they are not producing the intended results.

You should take measures of your problem *before* you implement responses, to determine how serious the problem is, and *after* you implement them, to determine whether they have been effective. You should take all measures in both the target area and the surrounding area. For more detailed guidance on measuring effectiveness, see Problem-Solving Tools Guide No. 1, *Assessing Responses to Problems: An Introductory Guide for Police Problem-Solvers* and Problem-Solving Tools Guide No. 10, *Analyzing Crime Displacement and Diffusion*.

The following are potentially useful outcome measures of the effectiveness of responses to carjacking. Keep in mind that process measures show the extent to which responses were properly implemented. Outcome measures show the extent to which the responses reduced the level or severity of the problem.

- Reduction in the number of carjacking incidents
- Reduction in the number of victims injured or killed during carjackings
- Reduction in the severity of victim injuries
- Reduction in citizens' fear of becoming a carjacking victim
- Increase in the number and proportion of carjacked vehicles recovered
- Reduction in the damage caused to carjacked vehicles

Responses to the Problem of Carjacking

Your analysis of your local problem should give you a better understanding of the factors contributing to it. Once you have analyzed your local problem and established a baseline for measuring effectiveness, you should consider possible responses to address the problem.

The following response strategies provide a foundation of ideas for addressing your particular problem. These strategies are drawn from a variety of research studies and police reports. Several of these strategies may apply to your community's problem.

It is critical that you tailor responses to local circumstances, and that you can justify each response based on reliable analysis. In most cases, an effective strategy will involve implementing several different responses. Law-enforcement responses alone are seldom effective in reducing or solving the problem.

Do not limit yourself to considering what police can do: carefully consider whether others in your community share responsibility for the problem and can help police better respond to it. The responsibility of responding, in some cases, may need to be shifted toward those who have the capacity to implement more effective responses. For more detailed information on shifting and sharing responsibility, see Response Guide No. 3, *Shifting and Sharing Responsibility for Public Safety Problems*.

For further information on managing the implementation of response strategies, see Problem-Solving Tools Guide No. 7, *Implementing Responses to Problems.*

General Considerations for an Effective Response Strategy

Carjacking is opportunistic. Thus, the key is to prevent and reduce carjacking opportunities. There are five main methods of decreasing carjacking opportunities:[50]

- Increase the effort required to commit a carjacking
- Increase the risks of committing a carjacking
- Reduce the rewards of carjacking
- Reduce provocations that could precipitate or induce carjacking
- Remove excuses for carjacking

1. Establishing carjacking task forces. Establishing task forces is a common method of promoting collaboration among police, other criminal justice agencies, community-based organizations, and researchers for the purpose of addressing difficult crime problems. Chicago, Washington, D.C., and Louisville are among the jurisidictions that have established carjacking task forces that included local, county, state, and federal partners.[51] Partnerships with the community are helpful to better understand carjackings in your jurisdiction, increase drivers' awareness of carjacking risks and influence street norms that encourage carjacking.

Specific Responses to Carjacking

Offender-based Responses

2. Identifying and focusing attention on repeat criminal offenders. Identifying and focusing attention on prolific offenders is generally a sound strategy.[52, j] Carjacking is among the crimes that prolific offenders are likely to commit, so reducing their overall offending will likely also reduce carjacking.

Victim-based Responses

3. Launching carjacking awareness and prevention publicity campaigns. Carjacking publicity campaigns should aim to raise drivers' awareness of carjacking risks in terms of place, time, vehicle make, and carjacking methods; and recommend measures to reduce their risk of being carjacked.[k] Below are some common recommendations for drivers to reduce carjacking risks:

- turning off the vehicle ignition and removing the key from the ignition whenever they are not operating it
- not interacting with strangers while the vehicle motor is running
- using the center lane on a roadway to make it harder for carjackers to approach the vehicle
- keeping the doors locked and windows rolled up while driving
- leaving room to get around other cars when stopped in traffic
- not immediately getting out of the vehicle if it is bumped by another car[53]

As is the case with all types of robberies and assaults, whether to resist a carjacking is a decision that must be left to each victim to decide based on the immediate circumstances.[54]

Consider working with vehicle insurance companies, vehicle rental companies, and motorist associations to help educate drivers about ways to reduce their risk of being carjacked.

Place-based Responses

4. Reducing the risks of carjacking at high-risk locations. Reducing the risk of all crime at high-risk locations can also reduce the risk of carjackings occurring near them.[55] If you are

[j] See Response Guide No. 11, *Analyzing and Responding to Repeat Offending* and No. 13, *Focused Deterrence of High-Risk Offenders* for further information.
[k] See Response Guide No. 5, *Crime Prevention Publicity Campaigns* for further information.

able to identify high-risk carjacking locations in your jurisdiction, based on a crime-prevention-through-environmental-design (CPTED) analysis of each high-risk location[l], adopt measures that reduce the risk of crime generally and carjacking specifically at that location.

Below are some possible specific measures that could reduce the risk of carjacking at particular locations:

- If there is a bus stop located on the near side of an intersection where carjackings commonly occur, consider moving the bus stop to the far side of the intersection, thereby reducing the opportunity for a carjacker to appear to be waiting for a bus at a location immediately adjacent to vehicles stopped at a traffic signal.
- Synchronize traffic signals to reduce the need for drivers to stop at multiple intersections along a major roadway, especially at nighttime.
- Program traffic signals to turn green for approaching vehicles at nighttime when traffic is light to reduce the chances of a driver having to stop at a signal with few other people nearby.
- Improve lighting in parking garages, convenience stores, and gas stations and install video surveillance cameras aimed at spots where stopped occupied vehicles and pedestrians are likely to be near one another.

Vehicle-based Responses

5. Making vehicles less attractive targets for carjackers. Because carjackers tend to make quick decisions as to whether to try to rob a person of their vehicle, the less attractive the vehicle is to carjackers, the less likely they will attempt to carjack it. For example, for a variety of reasons, tourists are often attractive crime targets[m]. To the extent that an offender can tell that a driver is a tourist—such as by the fact that they are driving an obviously rented vehicle—their risk of being robbed of their vehicle increases. In the early 1990s, in response to a wave of carjackings, the State of Florida banned the use of special rental car license plates and rental car company logos to make those vehicles and their drivers less attractive crime targets. Tinting windows[n] or having multiple passengers in vehicles also makes them less attractive targets because carjackers are less certain that they can quickly control all resistance to the robbery.

6. Educating vehicle owners about remotely disabling their carjacked vehicle. Some newer vehicles come equipped with anti-theft technology that enables the owner to remotely disable the vehicle after it has been stolen. This technology can also be installed on a vehicle after sale. Typically, the technology either prevents the vehicle from being started or, more relevant to carjacking, reduces the flow of fuel to the engine. For example, OnStar® from General Motors vehicles can send a signal to an OnStar®-equipped stolen vehicle, gradually slowing the vehicle, and it offers a Remote Ignition Block tool that makes it impossible to restart a stolen vehicle once turned off.

7. Tracking carjacked vehicles. Vehicle location or other vehicle security technology can help identify and find a stolen vehicle. For example, OnStar® from General Motors vehicles can

[l] See Problem-Solving Tool Guide No. 8, *Using Crime Prevention Through Environmental Design in Problem Solving* for further information.
[m] See Problem-Specific Guide No. 26, *Crimes Against Tourists*, for further information.
[n] The degree of window tinting is restricted by law in many jurisdictions as it can create special hazards for police officers.

provide authorities with the GPS location. All major automakers now fit their new cars with tracking technology. One concern is that if the vehicle owner must make the tracking request, it can delay police finding the vehicle and reduces the chances of apprehending the carjackers driving it. The Cook County Sheriff's Office in Illinois routinely asks carjacked vehicle owners to give consent to police to track their vehicle's location.

8. Setting up 24-hour hotlines with vehicle manufacturers. Since most vehicles built after 2015 have some kind of tracking system that can be accessed by the manufacturer, setting up 24-hour hotlines with auto manufacturers allows the police, as well as vehicle owners/drivers, to locate carjacked vehicles and/or slowly stop or disable them.[56] If you identify a car make that is at high risk of being carjacked in your jurisdiction, you can set up 24 hotlines at least with that particular automaker.

9. Installing facial recognition technology in vehicles. Although not yet in wide use, the technology exists to restrict starting or operating a vehicle if the facial recognition technology in a vehicle does not recognize the driver as being authorized.[57] Such technology could also video-record the carjacker's face as the vehicle is being driven and either transmit the image immediately to the police or allow police to recover it later and use it to identify and apprehend the carjacker.

10. Making vehicle key fobs hard to clone. Vehicle manufacturers should be encouraged to redesign their key fobs (which are increasingly designed by auto manufacturers to unlock and start their vehicles) to make them more difficult to illegally clone. If carjackers cannot easily clone key fobs, presumably the stolen vehicles become harder to sell and the carjackers either have to take the time to rob the driver of the fob—which takes more time, increasing the risk of being apprehended or identified—or accept a lesser price for the stolen vehicle.

Responses with Limited Effectiveness

11. Arresting and prosecuting carjackers. Obviously, given the seriousness of the crime, police and prosecutors need to prioritize trying to apprehend, arrest, prosecute, and punish carjackers. However, carjacking is a particularly difficult crime to solve because it usually occurs so quickly and unexpectedly that victims have difficulty identifying the carjacker. Even if they recover the vehicle or stop someone driving it, proving who used the physical force to steal the vehicle depends heavily on the victim's ability to positively identify that person. In Chicago, only about 11% of carjackings resulted in an arrest, a figure that is considerably lower than for other types of robbery.[58] Thorough forensic processing of recovered carjacked vehicles and gathering social media posts in which carjackers boast about their crimes can improve arrest and prosecution rates.

Appendix: Summary of Responses to Carjacking

The table below summarizes the responses to carjacking, the mechanism by which they are intended to work, the conditions under which they ought to work best, and some factors you should consider before implementing a particular response. It is critical that you tailor responses to local circumstances, and that you can justify each response based on reliable analysis. In most cases, an effective strategy will involve implementing several different responses. Enforcement responses alone are seldom effective in reducing or solving the problem.

Response No.	Page No.	Response	How It Works	Works Best If…	Considerations
General Responses to Carjacking					
1		Establishing carjacking task forces	Promotes collaboration among police, other criminal justice agencies, community-based organizations, and researchers for the purpose of addressing difficult crime problems	…there is active participation by all relevant local, state, and federal agencies, as well as relevant non-criminal justice organizations and the work is informed by a deep understanding of the local carjacking problem	Task forces are challenging to manage as each partner entity has its own priorities and objectives
Specific Responses to Carjacking					
Offender-based Responses					
2		Identifying and focusing attention on repeat criminal offenders	Reducing criminal offending generally tends to also reduce specific crime types, including carjacking	…your community's repeat offenders are also engaged in carjacking	If carjackers in your jurisdiction tend to specialize in that one crime, then broader repeat offender initiatives are unlikely to affect carjacking
Victim-based Responses					
3		Launching carjacking awareness and prevention publicity campaigns	Raise drivers' awareness of carjacking risks in terms of place, time, vehicle make, and carjacking methods	…the campaigns include practical and specific recommendations for reducing the risk of carjacking victimization	Unless carefully designed and targeted to the at-risk audience, crime prevention publicity campaigns can be costly, but ineffective
Place-based Responses					

4		Reducing the risks of carjacking at high-risk locations	Reduces the opportunities for carjacking by increasing risks of detection and the effort required to carjack vehicles	…carjackings cluster in significant numbers at specific locations	Because carjacking can occur in any location where operated vehicles are close to pedestrians, there might be no specific locations where carjacking commonly occurs
5		Make vehicles less attractive targets for carjackers	Leads carjackers to conclude that the risks of detection are greater than the rewards	…carjackers are averse to the risk of detection and don't benefit greatly from the crime	Carjacking for thrills rather than for profit makes carjackers care less about the attractiveness of the vehicle
6		Educate vehicle owners about remotely disabling their carjacked vehicle	Increases the probability that the vehicle will not operate for long after being stolen and thereby makes carjacking a less appealing crime to commit	…many vehicles are equipped with remote disabling technology	Many vehicles won't come equipped with remoted disabling technology and many of those owners won't invest in installing it
7		Track carjacked vehicles	Increases the probability and speed of police recovery of the vehicle, making the crime less rewarding if financial gain is the motive for committing it	…vehicle owners can quickly authorize police to receive the vehicle location information	Many vehicles won't have tracking technology installed

8		Set up 24-hour hotlines with vehicle manufacturers	Increases the likelihood that police will be able to locate the stolen vehicle quickly, thereby discouraging carjackers from committing the crime	…police can be quickly authorized to receive notification of the vehicle's location	Requires some administrative effort to establish 24-hour notification arrangements with vehicle manufacturers
9		Install facial recognition technology in vehicles	Prevents starting or operating a vehicle if the driver is not a recognized authorized driver	…high-quality facial-recognition technology is installed in the vehicle	Many vehicle owners will not choose to invest in facial-recognition technology due to cost, privacy preferences, or a desire to avoid possible inconvenience in operating one's vehicle
10		Make vehicle key fobs hard to clone			
Responses with Limited Effectiveness					
11		Arresting and prosecuting carjackers	Deters carjackers from repeating their crime and deters others who learn of arrests from committing carjackings	…arrest rates are high enough to persuade carjackers that the risk of apprehension is unacceptably high	Given the suddenness of carjackings, victims commonly have difficulty describing or identifying the carjacker, making arrest and prosecution difficult even if the vehicle is recovered and/or a person driving the vehicle is detained

References

Abrahamse, A. F., & Ebener, P. A. (1991). An experimental evaluation of the Phoenix repeat offender program. *Justice Quarterly, 8*(2), 141–68.

Altbeker, A. (2006). Cars and robbers: Has car theft crime prevention worked too well? ISS Paper 124. Pretoria, South Africa: Institute for Security Studies.

Bergal, J. (2020, October 21). *Carjackings, delivery vehicle thefts spike during pandemic*. Stateline. https://www.pewtrusts.org/en/research-and-analysis/blogs/stateline/2020/10/21/carjackings-delivery-vehicle-thefts-spike-during-pandemic

Brown, D. O. (2022). Chicago Police Department: 2021 in review. Chicago: Chicago Police Department. Accessed on June 4, 2022, from https://home.chicagopolice.org/chicago-police-department-2021-year-in-review/

Cesar G. T., & Decker, S. H. (2017). Cold-blooded and badass: A "hot/cool" approach to understanding carjackers' decisions. In *The Oxford Handbook of Offender Decision Making*, ed. W. Bernasco, J.L. van Gelder, & H. Elffers, pp. 611–32. New York: Oxford University Press.

Cherbonneau, M., and H. Copes (2003). Media construction of carjacking: A content analysis of newspaper articles from 1993–2002. *Journal of Crime and Justice, 26*(2), 1–21.

Clarke, R. V., & Eck, J. E. (2016). *Crime analysis for problem solvers: In 60 small steps.* Washington, D.C.: U.S. Department of Justice, Office of Community Oriented Policing Services.

Copes, H., A. Hochstetler, and M. Cherbonneau. (2012). Getting the upper hand: Scripts for managing victim resistance in carjackings. *Journal of Research in Crime and Delinquency*, 49(2), 249–268).

Deenihan, B. (2021). "Police challenged by dramatic increases in carjacking by juveniles." *PERF Daily Critical Issues Report.* February 8. Washington, D.C.: Police Executive Research Forum.

National Public Radio (2021). "Chicago aims to deter juveniles from participating in carjackings" [Interview]. *Morning Edition*.

Davis, L. (2003). Carjacking – insights from South Africa to a new crime problem. *Australian and New Zealand Journal of Criminology*, 36(2), 173–191.

Dilli Babu, K., K. Aishwarya, B. Akilya, B. Gowsalya, and J. Reena (2020). Prevention of carjacking using face recognition. *International Journal of Computer Science and Mobile Computing,* 9(1), 128–131.

Donahue, M., C. McLaughlin, and L. Damm (1994). Accounting for carjackings: An analysis of police records in a southeastern city. *American Journal of Police*, XIII (4), 91–111.

Felson, M., S. Nogueira de Melo., Y. Xu, and S. Jiang (2022). Carjacking: A comparison between Campinas, Brazil and Detroit, Michigan. *Journal of Contemporary Criminal Justice, 38*(1), 105–119.

Fies, A. (2020). "Why carjackings have skyrocketed in parts of the country during the pandemic." ABCnews.go.com. December 23, 2020.

Harrell, E. (2022, October). *Carjacking victimization, 1995–2021*. Washington, D.C.: U.S. Department of Justice, Bureau of Justice Statistics.

Jacobs, B. (2012). Carjacking and copresence. *Journal of Research in Crime & Delinquency, 49*(4), 471–488.

Jacobs, B. (2013). The manipulation of fear in carjacking. *Journal of Contemporary Ethnography, 42*(5), 523–544.

Jacobs, B., and M. Cherbonneau. (2018). Perceived sanction threats and projective risk sensitivity: Auto theft, carjacking, and the channeling effect. *Justice Quarterly, 35* (2), 191–222.

Jacobs, B., and M. Cherbonneau (2019). Carjacking and the management of natural surveillance. *Journal of Criminal Justice, 61,* 40–47.

Jacobs, B., and M. Cherbonneau (2023). Carjacking: Scope, structure, process, and prevention. *Annual Review of Criminology, 6,* 155–179.

Jacobs, B., V. Topalli, and R. Wright (2003). Carjacking, streetlife and offender motivation. *British Journal of Criminology, 43*(4), 673–688.

Johnson, R., S. Sterling, S. Jiang, and D. Poole (2018). *Prolific offender surveillance and apprehension unit. Smart Policing Initiative.* Washington D.C.: U.S. Department of Justice, Office of Justice Programs, Bureau of Justice Assistance.

Klaus, P. (1999). *Carjacking in the United States, 1992–96.* Washington, D.C.: U.S. Department of Justice, Bureau of Justice Statistics.

Klaus, P. (2004). *National Crime Victimization Survey: Carjacking, 1993–2002.* Washington, D.C.: U.S. Department of Justice, Bureau of Justice Statistics.

Lersch, K. (2017). Risky places: An analysis of carjackings in Detroit. *Journal of Criminal Justice, 52*, 34–40.

Martin, S., and L. Sherman (1986). *Catching career criminals: The Washington, D.C. repeat offender experiment.* Washington, D.C.: Police Foundation.

Main, F. (2021a). "Inside the mind of a Chicago carjacker." Retrieved on June 10, 2022, from https://chicago.suntimes.com/crime/2021/12/31/22848890/chicago-carjackings-inside-mind-chicago-carjacker

Main, F. (2021b). "To catch carjackers, Cook County Sheriff Tom Dart asks automakers for help." Retrieved on June 10, 2022, from

https://chicago.suntimes.com/politics/2021/12/9/22825829/carjacking-cook-county-tom-dart-asks-automakers-help-catch-carjackers

Miethe, T., W. Sousa (2010). Carjacking and its consequences: A situational analysis of risk factors for differential outcomes. *Security Journal, 23*(4), 241–258.

Morewitz, S. (2019). "Kidnapping: Carjacking and related crimes," pp. 153–169 in Morewitz, *Kidnapping and violence: New research and clinical perspectives.* New York: Springer.

New Jersey Uniform Crime Reporting Unit (2002). *Tenth annual carjacking offense report.* State of New Jersey, Department of Law & Public Safety Division of State Police.

New Jersey Uniform Crime Reporting Unit (2016). *Twenty-fourth annual carjacking offense report.* State of New Jersey, Department of Law & Public Safety Division of State Police.

Rasa, G. (2020). "Carjackings are up, in the latest bleak development of 2020." June 10, 2022, retrieved from Autoblog.com.

Rand, M. (1994). *Carjacking: National crime victimization survey.* Washington, D.C.: U.S. Department of Justice, Bureau of Justice Statistics.

Robertson, C. (2022). "'I honestly believe it's a game': Why carjacking is on the rise among teens." *New York Times*, March 21.

The Economist (2022). "Crime and no punishment; carjacking." *The Economist,* February 12, p. 23.

Topalli, V., and R. Wright (2004). "Dubs and dees, beats and rims: carjackers and urban violence." In *Crime types: A text/reader*, ed. D. Dabney, pp. 149–69. Belmont, Calif.: Wadsworth.

Topalli, V., S. Jacques, and R. Wright (2015). 'It takes skills to take a car': Perceptual and procedural expertise in carjacking. *Aggression and Violent Behavior, 20,* 19–25.

University of Chicago Crime Lab (2023). "A deeper look at what the data tells us about Chicago's carjackings." Accessed on March 24, 2023, at https://urbanlabs.uchicago.edu/projects/how-the-pandemic-is-accelerating-carjackings-in-chicago

Virojboonkiate, N., A. Chanakitkarnchok, P. Vateekul, and K. Rojviboonchai (2019). Public transport driver identification system using histogram of acceleration data. *Journal of Advance Transportation,* 2019: 1–15. doi.org/10.1155/2019/6372597

Wood Harper, D., and P. Walsh (2011). "Armed robbery and carjacking." In C. Bryant (ed.), *Routledge handbook of deviant behavior,* pp. 527–533. Taylor & Francis Group.

Young, L., and M. Borzycki (2008). *Carjacking in Australia: Recording issues and future directions.* Trends & Issues in Criminal Justice, No. 351. Canberra: Australian Institute of Criminology.

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Endnotes

[1] Klaus (1999, p. 1).
[2] Young and Borzycki (2008).
[3] Morewitz (2019); Wood Harper & Walsh (2011).
[4] Klaus (2004).
[5] Klaus (2004); Rand (1994).
[6] Jacobs (2013); see also Young and Borzycki (2008).
[7] Jacobs and Cherbonneau (2023).
[8] Fies (2020); Jacobs and Cherbonneau (2023); Main (2021a, 2021b); Rasa (2020); University of Chicago Crime Lab (2023).
[9] Robertson (2022); Young and Borzycki (2008); Altbeker (2006).
[10] Harrell (2022).
[11] Jacobs (2013); Jacobs and Cherbonneau (2023).
[12] Cherbonneau and Copes (2003).
[13] Harrell (2022); Klaus (2004).
[14] Cesar and Decker (2017).
[15] Klaus (1999).
[16] Felson et al. (2022); Cesar and Decker (2017); Miethe and Sousa (2010) Carmichael, (n.d.); Jacobs, Topalli and Wright (2003).
[17] Topalli, Jacques and Wright (2015).
[18] Felson et al. (2022, p. 109).
[19] Miethe and Sousa (2010).
[20] Jacobs and Cherbonneau (2023); Klaus (2004); Rand (1994); Miethe and Sousa (2010); Davis (2003); Harrell (2022).
[21] Miethe and Sousa (2010); Davis (2003).
[22] Rand (1994); Klaus (2004); Miethe and Sousa (2010).
[23] Davis (2003).
[24] Jacobs (2013); Copes, Hochstetler and Cherbonneau (2012).
[25] Miethe and Sousa (2010).
[26] Rand (1994); Miethe and Sousa (2010); New Jersey Uniform Crime Reporting Unit (2002, 2016); Klaus (2004); Jacobs and Cherbonneau (2022); Davis (2003); Donahue, McLaughlin, and Damm (1994).
[27] Robertson (2022); University of Chicago Crime Lab (2023).
[28] Jacobs and Cherbonneau (2023); Klaus (2004); Miethe and Sousa (2010); New Jersey Uniform Crime Reporting Unit (2002, 2016); Rand (1994); Donahue, McLaughlin, and Damm (1994).
[29] Jacobs and Cherbonneau (2023); Klaus (1999); New Jersey Uniform Crime Reporting Unit (2002, 2016); Rand (1994); Davis (2003); Harrell (2022); Copes, Hochstetler and Cherbonneau (2012).
[30] Jacobs and Cherbonneau (2023); Klaus (2004); New Jersey Uniform Crime Reporting Unit (2002, 2016); Rand (1994); Carmichael (n.d).
[31] Rand (1994); Klaus (1999).
[32] Harrell (2022).
[33] Jacobs and Cherbonneau (2023); Klaus (2004; Lersch (2017); Miethe and Sousa (2010); Rand (1994); Felson et al. (2022).
[34] Lersch (2017).
[35] Jacobs and Cherbonneau (2023); Klaus (1999); Rand (1994).
[36] Davis (2003).
[37] Rand (1994); Klaus (1999).
[38] Davis (2003).
[39] New Jersey Uniform Crime Reporting Unit (2002, 2016).
[40] Deenihan (2021); Cesar and Decker (2017); Jacobs and Cherbonneau (2018); Young and Borzycki (2008).
[41] Morewitz (2019).
[42] Jacobs (2013); Topalli and Wright (2004).

[43] Cesar and Decker (2017).
[44] Jacobs and Cherbonneau (2023).
[45] Young and Borzycki (2008).
[46] Clarke (1999); Main (2021a).
[47] Cesar and Decker (2017); Jacobs, Topalli and Wright (2003); Jacobs and Cherbonneau (2018, 2019, 2023); Robertson (2022).
[48] Cesar and Decker (2017).
[49] Johnson et al. (2018).
[50] Clarke and Eck (2016).
[51] Brown (2022).
[52] Abrahamse et al. (1991); Johnson et al. (2018); Martin and Sherman (1986).
[53] Felson et al. (2022); Jacobs (2012).
[54] Miethe and Sousa (2010).
[55] Lersch (2017).
[56] Main (2021b); Felson et al. (2022).
[57] Dilli Babu et al. (2020); Virojboonkiate et al. (2019).
[58] University of Chicago Crime Lab (2023); The Economist (2022).