

CHAPTER 27

MODELING OFFENDER DECISION MAKING WITH SECONDARY DATA

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As the contributions to this handbook testify, offenders make many types of decisions before and while committing crimes. Some examples of decisions are whether to offend in the first place, whether to offend alone or with others, with whom to offend, when to offend, where to offend and how to travel to the crime site, whether or not to carry and use a weapon, what other methods and tools to use, and what clothes to wear, to mention only a few salient decisions involved in offending.

There are various methods available to learn about offender decisions. The most straightforward strategy is to focus on the decision makers by asking them questions about their choices or by observing their choices in natural or experimental situations. These strategies all have their own drawbacks. Offenders may be unwilling or unable to describe their decision making, scientists can very seldom observe criminal behavior as it unfolds in the real world, and experimentation is limited by ethical concerns. As a result, many studies on offender decision making only observe and analyze the materialized result of offender decisions. They collect and statistically model decision outcomes by using secondary data—that is, data provided by law enforcement agencies, possibly combined with information from other registries.

Although the research questions that motivate this analytical strategy often apply to acts that individuals can willfully decide to commit (i.e., decisions), the questions are not always literally framed in terms of decision making. Rather, they are usually coined in statistical terms of “effects of attributes on outcomes.” Although such phrasing may seem to ignore the agency of the individuals being studied, it could reflect the caution that many researchers exercise when drawing conclusions from data not originally designed for their research question, leading them to provide cautious interpretations of their findings.

This chapter takes the viewpoint that if the behavior being studied involves any choice at all, there is good reason to interpret and discuss the research outcomes in terms of decision making, irrespective of the particular research methodology being used. This viewpoint is inspired by microeconomics. Microeconomic theory is about how individual agents make decisions under a variety of constraints, and most (although certainly not all) of the empirical tests of the theory are based on the statistical analysis of secondary data.

This chapter is a review of this methodology in the study of offender decision making. Because of the great variety of data sources, data types, and analytical techniques that are used in research on crime and criminal justice, this chapter cannot cover any specific source, data type, or technique in detail and must thus refer to other materials for in-depth treatment. The chapter can neither be exhaustive in terms of the types of decisions being reviewed. It focuses on two types of decisions: whether to offend and where to offend.

The remainder of this chapter consists of four sections. The first section briefly describes some types of secondary data used in research on offender decision making, particularly data from law enforcement. The second section addresses the use of secondary data in the offender's decision on where to commit crime. The third section describes how secondary data have been used in studying whether to offend in the first place. The fourth section discusses advantages and disadvantages of secondary data analysis in the study of offender decision making.

I. SECONDARY DATA SOURCES

In this chapter, secondary data include all data that have been recorded and collected for other reasons than scientific research. They include records of agencies in the criminal justice system (courts, prisons, and police departments) but also the following: population registries; census data; registries of schools, firms, and companies; tax registries; Internet provider databases; and so on. The definition also includes the secondary analysis of observational qualitative data (e.g., police interrogation transcripts and closed-circuit TV [CCTV] footage of offending) that were collected for other than research purposes.

A. Criminal Justice Data

Police records are one of the most widely used types of data in criminological research. This is not surprising because police records include information on some of the main topics of interest to criminologists: criminal events and their perpetrators and victims. The police record information about crimes and their perpetrators for several reasons. The first reason is that detailed documentation about incidents and individuals

is required for prosecution. The second reason is that the records can be used for solving future crimes. The third reason is that police records provide a measure of police productivity.

In the United States, the Federal Bureau of Investigation has since 1930 administered the Uniform Crime Reports (UCR) program, a national multi-agency program that collects and reports standardized data on crime from a large variety of law enforcement agencies. It has been used extensively in research on crime, including work focusing on individual decision making (Lochner 2004). Since 1988, the traditional Summary Reporting System (SRS), which contains aggregated data, has been supplemented with the National Incident-Based Reporting System (NIBRS), which goes into much greater detail and allows for analyzing data at the incident level. It includes, but is not limited to, a detailed classification of the type of crime; characteristics of the incident, such as date, time, and location type; characteristics of properties involved in the offense (including residences, offices, vehicles, and stolen items); and characteristics of victims, offenders, and arrestees, such as age, sex, ethnicity, and the type of weapon they carried, if any. Compared to aggregated summary reports, the incident-level data in the NIBRS have greatly increased the opportunities for scholarly research on crime and have been used extensively for that purpose (Thompson, Saltzman, and Bibel 1999; Tillyer and Tillyer 2015).

Nevertheless, some research questions require more or other details than the NIBRS offers, such as data on addresses of offenders and crime locations. Therefore, many studies utilize offense and offender samples from police records that contain more detailed information, typically of a single jurisdiction.

Most countries have databases in which DNA profiles are stored to support criminal investigations (Corte-Real 2004). They typically contain two types of DNA profiles. The first are DNA profiles of biological stains (typically blood, saliva, or semen) that have been secured at crime sites and are assumed to belong to a person involved in the crime. The second are DNA profiles of reference samples taken (usually by way of a buccal swab) from suspects or from convicted offenders. Although DNA databases have been designed for investigate purposes, some scholars in England (Leary and Pease 2003; Townsley, Smith, and Pease 2006), the Netherlands (Lammers 2014; Bernasco, Lammers, and van der Beek 2016), and Belgium (Jeuniaux et al. 2016) have used national DNA databases for the study of crime patterns. Because DNA databases contain information on criminal behavior of both identified and unidentified offenders (in particular, crime type, date, location, and links to other crimes), a particular advantage of these data is that they allow researchers to study geographic patterns and patterns of co-offending irrespective of whether the offenders are known to law enforcement agencies.

A relatively recent development is the usage of surveillance camera footage of illegal behavior for research purposes. CCTV cameras are usually installed for security reasons, but when crimes are committed in front of the cameras, the recorded footage is often used for investigative purposes and can also be useful for a detailed analysis of behavior. Examples are a study of the role of bystanders in public violence (Levine, Taylor, and Best 2011) and a study on drug sellers in open-air markets (Piza and Sytsma 2016).

B. Population Registries

As exemplified by the studies cited in section III of this chapter and as discussed extensively by Lyngstad and Skarðhamar (2011), the Nordic countries as well as some other countries (e.g., the Netherlands) have set up (digital) population registries that document basic demographic and administrative data about their citizens. These include gender, date of birth, nationality, address, and links to records of parents, children, and marital partners. Usually these files can be linked to other data files on education, employment, tax administration, social services, utilization of health services, and—of particular relevance in this chapter—law enforcement data. Address data can be further linked to area-based sociodemographic and land use data, which allows social-ecological research to be fully based on registry data.

C. Victimization Surveys

A substantial percentage of crime is never registered because the victims do not report it to the police or because the police do not record it. Unrecorded crime remains a “dark number” when only police statistics are available. To provide more valid and reliable crime statistics, the victimization survey was invented in the 1960s. By the end of the twentieth century, some industrialized countries had their own annual or bi-annual survey, such as the National Crime Victimization Survey (NCVS) in the United States and the British Crime Survey (BCS) in the United Kingdom. As a collaborative effort of academic researchers, the International Crime Victimization Survey (ICVS) has been underway for several decades.

In victimization surveys, random samples of the population are asked to report on how often they have been a victim of a variety of crimes during a reference period (usually twelve months). Because the outcomes of victimization surveys are used mostly for periodic evaluations of trends and developments in crime and victimization (and not to answer specific research questions), they are treated here as “secondary” data rather than as primary data. Because every crime victim is a target implicitly or explicitly chosen by an offender, victimization surveys may be helpful in answering questions about offender’s target or victim selection. Do pickpockets prefer male or female victims? Do robbers select young or middle-aged victims? Do burglars select affluent or poor households? The advantage of victimization surveys compared to police records is that victimization surveys provide much more details about the geographic, demographic, social, and economic characteristics of victims than do police records. On the other hand, victimization surveys contain almost no information on offenders.

II. WHERE TO COMMIT CRIME

This section addresses a decision frequently studied in criminology—the decision of where to commit crime (for a detailed account see chapter 19).

The study of geographic variation in crime dates back to the nineteenth century. The classic works of Guerry and Quetelet as well as the studies of the Chicago School focused on regional and neighborhood variations in crime and delinquency. They documented variations in numbers of registered crimes or numbers of registered offenders across geographic areas. Because the geographic units of analysis were relatively large, and because individual geographic mobility was limited in the nineteenth and early twentieth centuries, these studies did not explicitly distinguish between where offenders lived and where they committed crimes. It was assumed (and the assumption was probably justified) that offenders would commit crimes in the district or neighborhood in which they lived. The interest in the “criminal commute” or “journey to crime” is more recent and was inspired by journey-to-work studies. It was based on the premise that for offenders, crime is a source of livelihood, and that like other workers they must travel from their homes to the crime target to earn their illegal income (Rengert 1992, p. 109).

Time and again it has been empirically verified that the frequency of crime decreases with the distance from home—a phenomenon referred to as distance decay—and that most crimes are perpetrated near the offenders’ main anchor points (i.e., near their homes) (Levine and Lee 2013; Andresen, Frank, and Felson 2014; Vandeviver, van Daele, and Vander Beken 2015). This regularity has usually been interpreted in terms of travel cost minimization: Why travel far if the same can be achieved nearby?

However, the question *how far* offenders move away from home to commit crime is not necessarily a very good question. A more ambitious question is *where* they go to commit crime. The answer to the latter implies an answer to the former question, but it requires more precision. At one kilometer distance from an offender’s home, there are numerous opportunities for crime, but only some of these places are potentially selected as crime sites, whereas others are not. Thus, travel cost minimization might provide an answer to the question how far offenders travel to commit crime, but it does usually not provide an adequate explanation of where offenders commit crime.

Several recent studies on the geography of crime address this question of crime location choice. A common theme is that distance is not the object of explanation but, rather, part of the explanation itself: It is one of the criteria that make a possible target more or less attractive to a prospective offender. This line of research is interesting to discuss in this chapter not just because it applies secondary data to analyze offender decisions, but in particular because the analytical framework that is used in these studies explicitly analyzes crime locations as the result of offenders’ decisions.

Bernasco and Nieuwbeerta (2005) started this line of research by using random utility maximization theory and discrete choice modeling (Ben-Akiva and Lerman 1994) to answer crime location choice questions. They assumed that motivated offenders must choose a crime site from a limited set of alternatives. For example, they must choose a neighborhood from the set of all neighborhoods in a city. According to the version of rational choice theory that Bernasco and Nieuwbeerta formulated, offenders rate each potential target neighborhood in terms of rewards, costs, and risks. For example, neighborhood affluence may be used as an indicator of prospective burglary rewards, police patrol intensity in the neighborhood may be used as an indicator of apprehension risk, and distance from home may be used as a measure of transportation cost. Provided that

offenders have information on all relevant neighborhood characteristics, they choose the neighborhood that offers the optimal mix of rewards, costs, and risks. If the alternatives and their attributes are known, and if it is observed where offenders decided to offend and where not, the model outcomes tell us how they value the measured neighborhood attributes. This analytical strategy is called “revealed preference” in economics, in which it was initially applied to consumer choices (Samuelson 1938; Varian 2006). It tells us what individuals find important based on observing what they do rather than what they say they find important or what they say they would do if given the choice.

The idea to learn about offender preferences by comparing attributes of targeted and not-targeted areas has been applied to burglary (Bernasco and Nieuwbeerta 2005; Clare, Fernandez, and Morgan 2009; Townsley et al. 2015), robbery (Bernasco and Block 2009; Bernasco, Block, and Ruiter 2013; Bernasco, Johnson, and Ruiter 2015), thefts from vehicles (Johnson and Summers 2015), and riot-related offenses in the 2011 London riots (Baudains, Braithwaite, and Johnson 2013). Each of these studies uses police records that link offenders (and the neighborhoods or city blocks where they live) to the crimes they have been charged with (and the neighborhoods or the city blocks where they committed these crimes). Each of these studies also combines the police recorded data with administrative and census or registry-based data on all neighborhoods and city blocks in the catchment area. A common finding across all studies is that offenders, when given a choice of identical target locations, prefer nearby locations over distant targets. The finding strengthens the ubiquity of the law of distance decay because it not merely confirms its validity but also demonstrates that the preference for nearby locations remains after controlling for other choice criteria.

Whereas the majority of crime location choice studies are based on the assumption that all offenders possess complete information on all alternatives (e.g., they know all relevant characteristics of all neighborhoods in the city), recent research on crime location choice has suggested that spatial decisions are heavily influenced by the awareness spaces of the offenders involved. Bernasco (2010) used police recorded data from The Hague on perpetrators of residential burglaries, thefts from vehicles, robberies and assaults, and street robberies and linked the data to a registry containing historic residential address data. The results demonstrated for all four crime types that offenders not only committed crimes nearby their current residences but also preferred committing crimes in former areas of residence, particularly if they had lived there a long time and until recently. Their findings were replicated in a nationwide study in the Netherlands on commercial robberies (Bernasco and Kooistra 2010).

Building on this evidence, Lammers et al. (2015) argued that in addition to prior areas of residence, prior crime locations might also be part of offenders’ awareness spaces. Using police data on serial offenders in the greater The Hague area during the period from 2003 to 2009, combined with registry data on historic residential addresses, they assessed the tendency of offenders to return to their prior crime locations to commit new crimes. In line with findings in the literature on spatiotemporal risk clusters (Johnson et al. 2007) and offender behavioral consistency (Tonkin et al. 2011), they showed that offenders prefer to offend near their prior crime locations, especially if the

prior crimes were committed recently and involved the same type of crime. These findings were confirmed in a study on burglars in the West Midlands in the United Kingdom (Bernasco et al. 2015).

With respect to decision-making mechanisms, the effects of offender awareness space on their location choices require further study. Research findings have thus far suggested that locations already have increased attraction value if only they are situated within the offender's awareness space. However, from a theoretical standpoint, it should be expected that awareness space does not directly affect attractiveness, but that it modifies other effects: One would expect that both negative attributes (indicating high risk or high cost) and positive attributes (indicating high rewards) would weigh more strongly for places within an offender's awareness space than for places outside the offender's awareness space.

In summary, empirical research on the geography of crime has extensively used police records, census data, and other secondary administrative data sources. Recent research on crime location choice has continued this tradition and has demonstrated how detailed registry data can be used to enrich the framework by testing effects of awareness space. Moreover, this work is a straightforward example of how mathematical offender decision-making models can be applied to secondary data.

III. WHETHER OR NOT TO OFFEND

The type of decision most frequently studied in criminology is probably the decision whether or not to commit crime. In the field that studies this decision, developmental and life course criminology (Farrington 2003a), the involvement in crime is not commonly framed in terms of decision making. Rather, the literature identifies structural economic and social conditions and life events that determine whether individuals become involved in crime. Thus, it implicitly follows a medical "risk-factor" logic whereby criminal behavior is not explicitly chosen by individuals but, rather, induced by "criminogenic" circumstances. A possible exception in criminology is the age-graded theory of informal social control (Laub and Sampson 2003), which uses the concepts of "agentic action" and "situated choice" to emphasize that individuals make choices that are constrained but not determined by external factors, a perspective common in economics, in which crime (like all other behavior) is studied from a decision-making perspective (Becker 1968; Ehrlich 1973).

Nevertheless, the view that committing crime is a matter of choice between expected costs and benefits is fully compatible with empirical observations. Many of the conditions that generally appear to reduce criminal involvement in adolescents (parental monitoring, scholarly achievement, and nondelinquent friends) and those that appear to reduce it in adults (marriage, parenthood, and employment) can easily be interpreted as conditions that make crime a more costly and risky alternative than abstinence from crime, but not necessarily more rewarding. In other words, there seems to be no

theoretical obstacle to analyzing the involvement in criminal activity as a decision, the outcome of which is affected by the perceived costs and benefits of each alternative, and where these perceived costs and benefits depend on external factors that are mostly outside the control of the individual.

Most US- and UK-based studies on criminal careers are panel studies among respondents who report their attitudes and behavior in questionnaires and interviews. In other words, they are primary data. Well-known examples are the Cambridge Study (Farrington 2003*b*; Farrington, Piquero, and Jennings 2013), the Rochester Youth Development Study (Thornberry, Lizotte, and Krohn 2003), the Denver Youth Survey (Huizinga, Wylie Weiher, and Espiritu 2003), the Pittsburgh Youth Study (Loeber, Farrington, and Stouthamer-Loeber 2003), the Peterborough Adolescent and Young Adults Development Study (Wikström et al. 2012), and, in economics, the National Longitudinal Survey of Youth (Grogger 1998; Lochner 2004). Although these studies provide rich data on many life domains, including deviance, criminal involvement, and victimization, they require enormous amounts of resources, are necessarily limited in size, and are affected by attrition issues despite the efforts of researchers to keep panel retention levels high.

Alternatively, various studies in the Nordic countries (Denmark, Norway, Sweden, and Finland) and in the Netherlands have used registration data to answer questions on criminal involvement—questions that are often similar to the questions answered in expensive self-report samples that are used elsewhere. These studies have utilized the existence of comprehensive registry data involving multiple life domains and that typically cover the full population of the respective countries. In these countries, registry data replace the censuses that are common in most other countries of the world.

All four Nordic countries (Norway, Sweden, Finland, and Denmark) have registry data systems that are normally used for a variety of administrative purposes but have also been used for purposes of producing official statistics and research, including criminological research (Lyngstad and Skarðhamar 2011).

In Denmark, registry data were used to study risk factors for first-time convictions for violent crime (Christoffersen, Francis, and Soothill 2003) and for drunk driving (Christoffersen, Soothill, and Francis 2008) among a cohort of men born in 1966 ($N = 43,403$). In both studies, the authors combined twelve registries that could be linked because they all included the subjects' personal identity numbers. Examples of registries that were used and of the information included in them are population statistics (gender, age, marital status, and address), fertility database (links to parents, siblings, and children), psychiatric registry (psychiatric diagnoses), employment statistics (unemployment), education statistics (grades, schooling, and vocational training), and crime statistics (violation, conviction, and imprisonment).

In another study based on registry data in Denmark (Soothill et al. 2010), first-time convictions for shoplifting, burglary, and violence were examined. The authors used data of a national cohort of men born in 1980 who were living in Denmark by January 1994. Again, all information on these individuals and their parents and siblings was obtained from national administrative registries based on contacts with

public services, including law enforcement. Whereas the theoretical language of these studies was written in terms of “risk factors,” and although criminal convictions do not translate one-on-one to crimes, each of the dependent variables in these studies can be interpreted as the decision to commit a crime, and each person involved in crime can be compared to a similar person in the data set who was not convicted. All three studies applied a discrete time survival analysis approach in which continuous time was split up in person-year units. Whereas this approach is helpful in identifying censored observations, incorporating in the analysis time-varying causal factors and taking into account repeated observations of the same individual, it does not fully utilize the main strength of panel data, which is controlling for unobserved stable between-person heterogeneity.

In Norway, population registry data of five entire birth cohorts were used to analyze the effect of parental income and parental education on the first-time involvement in crime of their adolescent children (Galloway and Skarðhamar 2010). It was found that high educational qualifications of parents, more than high income, reduced the risk of their adolescent children becoming involved in crime. The first-time involvement was analyzed using Cox proportional hazard survival models, where the variable to be explained is the instantaneous hazard of committing a crime at time t if one has not committing the crime before time t .

In another study on Norwegian registry data, Skarðhamar (2009) used registry data from the Norway 1982 birth cohort ($N = 49,975$) to explore the relation between parental relationship dissolution (separation and divorce) and children’s adolescent delinquency between ages ten and twenty-two years. Using growth curve modeling, it was shown that although some of the effect of parental breakup is explained by socioeconomic conditions, there appears to be an independent and strong positive effect of family dissolution on children’s delinquency.

Skarðhamar and Savolainen (2014) used Norwegian registry data to study the relation between employment and desistance from crime among a sample of 783 male recidivists. Applying smoothing spline regression techniques to model changes in criminal offending around the point of entry to stable employment, they concluded that the transition to employment is most likely a consequence rather than a cause of desistance.

A study in Finland (Savolainen 2009) used registry data from the central statistical agency of the Finnish government to test the applicability of Laub and Sampson’s (2003) age-graded informal social control theory in a Nordic welfare state. Savolainen estimated the effects of work, parenthood, marriage, and unmarried cohabitation on desistance from crime among a national sample of 1,325 male felony offenders with a felony conviction in 1996 who had at least two prior felony convictions, who had never been married or lived in a cohabiting relationship, who had never had any children, and who had never had a job. The results demonstrated strong reductions in offending for those who were able to find employment and for those who formed a union in combination and became a father.

A large-scale analysis of the Finnish registry data is reported in a study of the effects of upward and downward social mobility on criminal involvement among a total birth

cohort of 60,069 individuals born in Finland in 1987 (Savolainen et al. 2014). The authors combined available registry data on demographics, education, employment, income, and health of individuals and their parents. Their findings show that after controlling for a number of other characteristics, neither downward nor upward mobility is an important correlate of crime.

An example of the extended use of registry data in the Netherlands is the Criminal Career and Life-Course Study (CCLS) study, a large-scale longitudinal study on the life course of a representative sample of 4% of all cases of criminal offenses tried in the Netherlands in 1977 (Blokland, Nagin, and Nieuwbeerta 2005; Blokland and Nieuwbeerta 2005). After the researchers gained access to the original 1977 data set, they first linked it to extracts from the General Documentation Files (GDF) of the Criminal Record Office (“rap sheets”) in order to reconstruct the entire criminal careers of the sampled individuals. Next, they enriched it by adding data from the Dutch national population registration records (BRP, formerly GBA). The BRP is a national electronic registration system that contains information on date of birth, date of death, gender, marriage, fertility, residential location, and parenthood for all Dutch inhabitants since 1938, linking individuals directly to their parents and children. This system partially replaces the census that was formally abolished in 1991 in the Netherlands (the last census took place in 1971). The resulting data set documents not only the complete criminal careers of the sample but also major life course events, including changes in marital status, parenthood, and residential relocation. Because the population registration records can be used to link individuals to their parents and to their offspring, the data have been further extended to include conviction information of parents, siblings, and children of the original sample. The CCLS data set has been used extensively in studies of the effects of life course events on offending behavior (van de Rakt, Nieuwbeerta, and de Graaf 2008; Bushway, Nieuwbeerta, and Blokland 2011; McGloin et al. 2011; van Schellen, Apel, and Nieuwbeerta 2012; van Schellen, Poortman, and Nieuwbeerta 2012).

In contrast to most longitudinal surveys in the United States and England that cover crime and delinquency, none of these Nordic and Dutch studies have included any offender interviews or other forms of primary data collection.¹ They fully rely on the advantages of secondary data to draw conclusions on offender decision making.

IV. ADVANTAGES AND DISADVANTAGES

Studying offender decision making by collecting and analyzing secondary data from registrations, including law enforcement records, has several advantages compared to alternative data sources and methods, but it is also saddled with limitations and caveats. This section addresses both the advantages and the disadvantages (for a comprehensive list of the uses of secondary data and for practical guidelines, see Argyrous 2009).

A. Advantages

A key advantage of criminal justice data and population registries (but not of victimization surveys) is that the subjects studied need not be recruited to measure their behavior, and their cooperation is not necessary to do the research. Recruiting participants to take part in surveys or experiments is a difficult and time-consuming task, and registry and criminal justice data free the researcher from the task of identifying a sample frame in the population, finding a relevant sample of subjects, and obtaining their cooperation. The latter is important if the topic of the research is sensitive. Offenders may not always be eager to be interviewed or complete surveys, particularly when the topic is crime and their own criminal behavior. Because the research does not involve the offenders personally, subject remuneration is not required.

A related advantage is that most secondary data have no non-response and panel attrition issues. Non-response refers to individuals who are sampled but decline the invitation to participate in the survey. Selective non-response is one of the drawbacks of survey research. It takes place if the participants willing to take part in the survey are not representative for the targeted population. Most contemporary surveys have response rates below 50%, depending on contact mode (e.g., face-to-face, telephone, paper mail, e-mail, web-based, and smartphone app), expected duration, and survey topics. In research based on registries, all subjects in the sample frame are included in the research, and none drop out.

Another advantage of secondary data is that typically it is not necessary to sample a limited number of subjects from the population. Registry and criminal justice data are population data, and once the researcher has access to these data, the full population at risk is normally included. There is no need to take a sample, to make power calculations, and to accept large standard errors. In fact, descriptive research based on population data does not require inferential statistics, although standard errors are still needed when causal estimates are required (Abadie et al. 2014). Occasionally, including the full population may create computational problems, but in these cases random sampling is an easy and acceptable solution.

A further advantage of many (but not all) criminal justice and registry data is that in contrast to census survey data, which are usually obtained at regular intervals (e.g., decennially), criminal justice and registry data are continuously updated and thus provide fine-grained temporal detail while still allowing the researcher to take “snapshots” that apply to a particular point in time. Related to this point is the advantage that the use of criminal justice and registry data avoids the danger of recall bias, such as telescoping (Christoffersen et al. 2008, p. 417). An example is recalling details of offending. Police records are typically entered directly upon arrest, usually on the day of the crime or within a few days of it. There is little risk that major mistakes are made when recording details such as date, time, place, or modus operandi. If an offender is interviewed about the event six months later in a retrospective offender interview, the risk of memory constraints biasing the account is much greater.

Data on sensitive issues or on socially less acceptable behaviors or experiences (crime is a case in point) may be difficult to obtain because many respondents are unwilling to report such experiences and behaviors. This certainly applies to the majority of offenders, who have broken moral rules and committed acts that are condemned by most people. Although the unwillingness of most people to report on their own offenses may also lead criminal justice or registry data to be incomplete (e.g., crimes undetected by the police will not be included), the data sources themselves do not lie, and the risk that criminal justice and registry data are systematically biased is arguably lower than the risk that respondent answers are biased.

National population registries can be very useful for exploring rare behaviors, events, or groups (Breslow and Day 1980) because it is often impossible or difficult to identify and find respondents. For example, if researchers are interested in the effects of adoption on deviance, registries containing such information can be ideal for sampling. In fact, although this is not a case of using registry data for secondary analysis, the registry itself might be used to sample subjects for face-to-face interviews.

Finally, although criminal justice and registry data are usually not open access in the sense of “publicly available,” they are usually available for scientific research under certain conditions. Because they are not owned by a single researcher or research institute, they are potentially available for everyone—a situation that makes it possible to replicate any research performed on the data. The reality of most primary data sets is that they remain the property of the institutes and researchers who collected them, unless and until they are willing to share the data with others. The public nature of most secondary data ensures that replication is in principle possible. In the ideal situation, secondary data on crime are publicly accessible, but such data are often highly aggregated, which limits their usefulness.

B. Disadvantages

Secondary data are collected and stored for other purposes than scientific discovery. They are not tailored to answer specific research questions and may thus not cover the full population of interest. Also, they may contain measures that are less valid and less reliable than would have been the case if they were collected for research purposes. In addition, a point made by Christie (1997) and reiterated by Lyngstad and Skarðhamar (2011) is that researchers are forced to accept the definitions and interpretations of the designers of secondary data, often national or local government authorities. Criminal justice registries are based on strictly legal criteria that do not always align with the aims of academic researchers. For example, a researcher may be interested in domestic violence, but the available police records may not include this category according to the preferred definition.

An obvious implication of this disadvantage is that secondary data are not based on rigorous experimental designs and that, therefore, research based on secondary data cannot generate strong causal inferences. This disadvantage is not unique to secondary

data, however, because most primary data collections record observational data only and thus suffer from the same problem. In defense of this approach, note that the issue is increasingly alleviated by the development of advanced statistical techniques that assist in assessing causality from observational data designs. The application of many of these techniques in research on crime and criminal justice is discussed in the *Handbook of Quantitative Criminology* (Piquero and Weisburd 2010), including instrumental variables (Bushway and Apel 2010), propensity score matching (Apel and Sweeten 2010), regression discontinuity (Berk 2010), and fixed effects regression (Dugan 2010). Furthermore, secondary data sometimes provide opportunities for designing natural experiments, in which random assignment to experimental conditions takes place although not planned and designed by researchers. An example is the use of the quasi-random assignment of judges to criminal cases in the United States, which has been used for assessing causal effects on imprisonment on subsequent life events (Kling 2006; Loeffler 2013).

Although the tenet of this chapter is that we do not necessarily need to have access to offender accounts of crime to learn about offender decision making, their knowledge, beliefs, attitudes, and arguments may be very helpful in understanding their decisions. Thus, the absence of the offenders' views on their own criminal conduct and decision making is a disadvantage in almost all secondary analyses of offender decision making (an exception may be the analysis of autobiographies; e.g., see Shover and Hunter 2010).

In the study of crime and criminal justice issues, secondary data contain only information on crime and related social problems that are known to the criminal justice system, including the police. This selection implies that crimes unknown to the police or other law enforcement agencies are by definition excluded from these data; this includes most consensual crimes (e.g., drug dealing), most "victimless" crimes (e.g., intoxicated driving), and crimes that victims do not report to the police. Moreover, when secondary data are used for studying offender decision making, researchers typically require data on arrested (or convicted) offenders. Because the police do not solve all crimes, arrested (and convicted) offenders comprise only a small subset of all offenders. For example, in most countries throughout the world, the detection rate for burglary is less than 10% (Bernasco 2014). Other registry data are also affected by biases. An example is the difficulty of measuring household composition in the Norwegian registry data (Lyngstad and Skarðhamar 2011). Whereas survey questionnaires have no difficulty assessing household composition and distinguishing married from unmarried cohabiting couples (unmarried consensual unions are fairly common in Norway), the identification of cohabiting couples with the Norwegian registry is difficult.

Registry data are usually context-poor. Hypotheses tested using context-poor data must often rely on simplifying assumptions because there are no options available for multiple measurement or other forms of triangulation. Too much reliance on such assumptions endangers the validity of the findings. An interesting account of such a situation is provided in a study on "defended community homicide" (Griffiths et al. 2008), defined as "homicides . . . perpetrated against nonresidents to protect the subjective and/or objective well-being of the perpetrator's neighborhood" (p. 233). The

authors used police records and census data to regress two types of homicide on social disorganization variables, with the findings confirming the hypothesis that social organization had opposite effects on both types of homicide. A closer qualitative examination of case descriptions of 34 homicides labeled as “defended community homicides” revealed that in only 4 of the 34 cases could the circumstances suggest a “community defense” motivation, thereby effectively falsifying the hypothesis. Often, however, triangulation is not possible because secondary data do not include detailed case descriptions.

Possibly the most serious danger of secondary databases is that they may have the capacity to seduce researchers into formulating their research questions based on what they know is available in registry data rather than on what is interesting from a scientific standpoint (Christie 1997). In other words, the risk is that they let data availability dictate their substantive research questions.

NOTE

1. The CCLS study is currently interviewing the individuals in the sample for the first time.

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