Both readers new to the study of places and those who are interested in brushing up on fundamentals will find the topics in Part I provide a solid foundation for undertaking place-based research. The chapters in this part of the book cover theoretical perspectives, methodological concepts, and data types that are foundational to the study of places. Chapter 1 introduces the reader to the major conceptual issues in crime and place research. Anyone new to the field will benefit from the concise introduction to place-based theories in Topic 1.1. Topic 1.2 is in the form of a conversation between two scholars and offers an approachable discussion of crime, race, and place that will interest both experienced and novice place researchers.

Gaining an understanding of crime patterns across places requires knowledge of spatial concepts and how to apply them (Chapter 2). Topic 2.1 discusses the connection between analytic techniques and data. Spatial data truly are special; they are different from traditional data sets used to study people. Knowledge of spatial data types (Topic 2.2) and spatial concepts (Topic 2.3) is essential to conducting crime and place research. Proximity is an important spatial concept for understanding crime patterns, and Topic 2.4 introduces the three most frequently used ways of measuring distance and points out the advantages and drawbacks to each.

Research focusing on people typically uses the individual as the unit of analysis. But place-based research begins by defining the unit of analysis. Chapter 3 discusses different units of analysis that have been used in place-based research. Topic 3.1 covers neighborhoods, the oldest, and perhaps most controversial, unit to define. Topic 3.2 provides a concise introduction to using data from the U.S. Census Bureau and includes information on how to link census geographies with tabular data for the same geographies. Moving down the geographic cone of resolution, Topic 3.3 introduces a number of different microlevel units of analysis such as addresses, street blocks, intersections, and grids.

The final chapter in the foundational part of the book, Chapter 4, offers a comprehensive examination of different types of data that are used in place-based research.
Each topic explains the data type, discusses how those have been used, describes challenges, and notes remaining questions.

One group of topics focuses on traditional data sources via official data. Discussion of official data sources can be found in Topics 4.1–4.5. Topic 4.1 covers a wide array of official police data including calls for service, crime incidents, arrests, and pedestrian and vehicle stops that are typically used to establish crime patterns and quantify police activities. Topic 4.2 addresses the use of Emergency Medical Services (EMS) data to augment official data regarding drug use. The role of land use and facilities in explaining crime patterns is widely recognized. Topic 4.3 discusses the theoretical foundations, potential data sources, and use of the location quotient to understand the distribution of crime or other indicators across different categories of land use. Topic 4.4 examines the configuration of street networks and how they act as the foundation for the arrangement of places and travel among those places. The topic introduces network topology and explains techniques for analyzing it. In many countries, government census efforts provide a valuable source of information describing change over time. Topic 4.5 focuses on the U.S. Census Bureau data products and describes the geographies their associated attribute data and how to combine the two.

Another group of topics introduces readers to new data sources. Open data are becoming more prevalent in the field. Topic 4.6 presents a typology for understanding and evaluating open data sets based on their origins. Topic 4.7 provides proven strategies for employing crowdsourcing and evaluating the results. Data collected via social media applications are another relatively recent data source that is gaining followers (pun intended). Topic 4.8 introduces readers to the ins and outs of using Twitter data.

A third set of topics focuses on data collected via surveys and includes self-report data, victimization surveys, and resident survey data. Topics 4.9 and 4.10 discuss different types of survey data that reveal the number and types of crimes that do not appear in official crime data. Topic 4.9 describes a new type of victimization survey that allows the investigation of situational aspects of victimization. The use of self-report data has a long tradition in criminology. Topic 4.10 describes a framework for guiding the use of self-report measures in place-based research. Finally, Topic 4.11 provides a step-by-step guide to the use of a community survey at the microgeographic level.

The final two topics discuss coding observations of the built and social environment. Topic 4.12 explains how to develop and use instruments to code the physical and social environment via in-person systematic social observations. Topic 4.13 reveals the intricacies and challenges involved in coding human behavior and the social environment via video footage from CCTV cameras.
Major Conceptual Issues in Crime and Place Research

TOPIC 1.1 THEORY AND RESEARCH QUESTIONS IN THE LITERATURE

Cory P. Haberman and Elizabeth R. Groff

Introduction

Scholars have demonstrated the importance of place for understanding crime for centuries (e.g., see Groff 2010). Early work focused on macrolevel geographic units. Since approximately the late 1970s, momentum has built for studying crime at microplaces (Weisburd 2015). For the most part, two separate theoretical frameworks developed. Scholars focusing on microplaces typically framed their work using environmental criminology or opportunity theories, consisting of the rational choice perspective, the routine activities perspective, and crime pattern theory. Scholars focusing on neighborhoods or communities typically framed their work using some version of informal social control, such as social disorganization, the systemic model, or collective efficacy. While these theoretical frameworks are not incompatible, much of the empirical literature on crime and place has typically focused on one or the other. In Topic 1.1, we review these major theoretical frameworks and then discuss five major questions that have naturally stemmed from these frameworks. In the course of highlighting these major questions, we signpost connections to chapters/topics included in this volume and illustrate their importance in the broader scope of crime and place research. We conclude with some thoughts for the future of crime and place research.

Crime and Place Theoretical Frameworks

Rational Choice Perspective

Crime and place research is rooted in the premise that people make (quasi) rational decisions to offend (Clarke and Cornish 1985; Cornish and Clarke 1986). Rather than assuming perfect rationality, as does traditional economic theory, the rational choice
perspective holds that individuals use available information to make decisions. Although they may have somewhat limited information (Gigerenzer 2000), individuals commit a crime when the potential benefits of doing so outweigh the potential risks/costs (Becker 1968). When deciding to commit a crime, people will actually make two types of decisions: (1) involvement decisions and (2) event decisions. The involvement decision is made repeatedly. It can be to begin, continue, or desist from offending. After the initial involvement decision that crime is a viable path to meeting one’s needs, the decision to continue or to desist from criminal behavior is made each time an individual is presented with an opportunity. Event decisions occur before, during, and after the commission of crimes and often involve opportunities discovered during the course of routine activities in the environmental backdrop (Clarke and Cornish 1985).

Crime and place researchers are primarily focused on event decisions (Eck and Weisburd 1995). Event decisions are crime and situation specific. As people commit crimes, they develop preferences for the situations that are most conducive for particular crime types, allowing offending to become routinized (Cornish 1994). For example, the decisions necessary for stealing items from unlocked cars in parking garages differ from those necessary for stealing parts from the exterior of vehicles parked on the street. Event decisions are influenced by the cues from the surrounding environment (Clarke and Cornish 1985). In fact, as detailed in Topic 10.2, it is possible to develop crime scripts that outline all the decisions required to commit a given crime type (also see Borrion 2013).

**Routine Activities**

Cohen and Felson (1979) first presented the routine activities perspective and illustrated that crime event decisions are possible when a motivated offender converges with a suitable target lacking capable guardianship (i.e., three basic elements of a crime event). In their seminal routine activities piece, Cohen and Felson (1979) describe how macrolevel changes in societal routine activities linked to changes in the convergence of the three basic elements of crime events and, ultimately, impacted aggregate crime levels. They demonstrated that increasing numbers of convergences could increase crime even if the number of offenders remained constant. This focus on the importance of the convergence of motivated offenders with suitable targets lacking capable guardianship led researchers to reframe routine activities as a microlevel perspective describing how individual crime events occur (Eck 1995).

Several refinements of and extensions to guardianship have created additional elements of a crime event. Felson (1986), drawing on criminological social control theories, described handlers as people who could influence—or control—the behavior of motivated offenders. For example, parents or coaches would influence the actions of juveniles. In his doctoral dissertation, Eck (1994) added the notion of place managers. Place managers are owners or people working on behalf of owners who can regulate behavior at a place (for a more detailed definition, see Eck and Madensen-Herold 2018). Finally, R. Sampson and colleagues (2010) grouped handlers, place managers, and guardians into the umbrella term “controllers” and theorized that “super controllers” could further impact the actions of controllers. While supercontrollers were theorized to have different dimensions, they were generally defined as “people, organizations and institutions that create the incentives for controllers to prevent or facilitate crime” (R. Sampson, Eck, and Dunham 2010, p. 40). Overall, motivated offenders, suitable tar-
gets, places, controllers, and supercontrollers make up the well-known crime triangle used to visualize the routine activities perspective.

Crime Pattern Theory

Crime pattern theory spatialized routine activities theory and posited that the environmental backcloth shapes where the three basic elements of crime events converge (P. J. Brantingham and Brantingham 1993; P. L. Brantingham and Brantingham 1981, 1993). The environmental backcloth is composed of the physical, social, cultural, and legal environments. Each situation is embedded in the environmental backcloth. The likelihood of convergence is due to the influence of the environmental backcloth. The physical environment consists of residential housing, stores, restaurants, offices, and so on. These “nodes” are destinations that people travel to, such as their homes, work/schools, and recreation locations. The transportation systems such as streets, buses, trains, and subways are also part of the physical environment (termed “pathways” in crime pattern theory). Pathways are used to travel to and from nodes.

People have both activity and awareness spaces (P. L. Brantingham and Brantingham 1981). Activity spaces include all the parts of the environmental backcloth people use during their routine activities, such as their homes, workplaces, and favorite recreational sites and the transportation routes between those locations (Horton and Reynolds 1971). Awareness spaces include all the parts of the environmental backcloth people know about. Awareness spaces are typically larger than activity spaces because they include nodes that are not visited very often.

Edges are a third important feature of the physical environment. Edges are places, usually along a pathway, where two distinctly different areas meet. Edges typically have many people who are visiting or passing through. This mixing of people who are not routinely part of the setting makes it more difficult for informal social control to function effectively.

Overall, crime is hypothesized to be higher around nodes and along pathways and edges that facilitate the greatest convergences of the three basic elements of crime events. For an overview of the theoretical perspectives described above, we suggest Andresen (2020) or Wortley and Townsley (2017).

Social Control Theories

Together, rational choice, routine activities, and crime pattern theory have been largely grouped under the umbrella terms “opportunity theory” or “environmental criminology.” Additional crime and place work has focused on the concepts of social control, both informal and formal. Whereas environmental criminology has emphasized more microgeographic units, earlier studies of social control and informal social control, focused on larger geographic units, such as “neighborhoods” or “communities.”

First, the social disorganization approach for the study of crime and place focused on the importance of informal social control via residents (Shaw and McKay 1942). Rooted in the Chicago School and early ideas on the development of cities, social disorganization theory suggested high-crime neighborhoods would be places where residents exerted little control over citizen behavior—including delinquency and crime. Drawing from ecology to explain city development and change, these researchers held
that cities grew outward from the urban core in “concentric circles” (Park and Burgess 1925). The innermost circles were characterized by commerce, manufacturing, and high residential population density in poor housing conditions. The people who lived in the innermost circles did so because it was all they could afford. Among the working class, the goal was to move away from the urban core toward the outer edges of a city once the financial means to do so were available. As such, urban core neighborhoods experienced quite a bit of residential mobility. Additionally, these neighborhoods were dominated by immigrants coming to the United States who were often very poor. As residents gained more resources, they left the innermost circles and moved toward the outer circles. Neighborhoods in the urban core were filled with persons of diverse races and ethnicities, thereby creating communication barriers and anonymity. Over time, concentrated disadvantage, residential mobility, and racial heterogeneity—as proxies of social disorganization—became common predictors of community crime levels. While sociodemographics were convenient proxies for social disorganization, a seminal paper by R. J. Sampson and Groves (1989) emphasized the importance of directly measuring informal social control mechanisms.

Over time, theories emphasizing informal social control for understanding crime at places were refined. Bursik and Grasmick’s (1993) systemic model expanded on how social control is organized at places. The systemic model noted the importance of three levels of social control: (1) primary, (2) parochial, and (3) public (see Hunter 1985). Primary control is derived from individuals’ immediate peer networks, such as family and friends. Parochial control is exerted by individuals’ immediate social environment—outside their homes. In effect, parochial control represents the social control exhibited by neighbors, local community groups, and so on. Public control is exerted by institutions from outside the community, such as the police. Bursik and Grasmick (1993) laid out an intricate theoretical model, whereby community sociodemographic structure impacts the three levels of social control and thus neighborhood crime. Readers are urged to review that original work.

R. J. Sampson, Raudenbush, and Earls (1997) introduced the notion of collective efficacy as an explanation of how communities might control behavior within them. Collective efficacy is a measure of residents’ social cohesion and trust among each other and their willingness to intervene in unwanted behaviors in the community. Similar to social disorganization theory and the systemic model, collective efficacy is shaped by community sociodemographics (for a comprehensive overview, see R. J. Sampson 2012).

While the mechanisms and links among mechanisms for each collection of theories are quite complex, all three perspectives support the notion that ties and social control by local residents are important for shaping spatial crime patterns. Further, Taylor (1997) argued that residential social control likely operates at the microlevel, whereby residents can exert informal social control on (potentially) criminal behavior. Recent theorizing and empirical work supports that perspective (Weisburd, Groff, and Yang 2012), but exactly how informal social control mechanisms might work at the microlevel and fit into the “opportunity” theories described is not yet well understood (Groff 2015).

Nonetheless, formal social control in the form of place-based policing has been an important policy stemming from crime and place research. Two major policing strategy innovations, problem-oriented policing (Hinkle et al. 2020) and hot spots policing (Braga et al. 2019), fall under the term “place-based policing.” Other place-based crime con-
control policies, including tactics like CCTV cameras (Piza et al. 2019) or acoustic gunshot detection systems (Mares and Blackburn 2020), are often implemented as result of efforts taken by formal control mechanisms, such as municipal governments or police departments. For scholars and policy makers seeking to understand how to address crime at places, understanding how formal social control mechanisms can be effectively deployed is of particular importance. Finally, we note that, while situational crime prevention tactics may be implemented by anybody and technically may not be formal social control in some applications, understanding the impacts of situational crime prevention is also an important area for crime and place researchers (Clarke 1980). For overviews of social control theories, we recommend R. J. Sampson (2012) and Taylor (2015).

**Big Questions**

From our perspective, the above conceptual and theoretical ideas naturally led to at least five “big questions” in the crime and place research conducted over the past forty years:

1. How are crime events committed?
2. How is crime concentrated?
3. Why is crime concentrated?
4. How do motivated offenders move through space?
5. How can crime and place research inform crime control policy?

**How Are Crime Events Committed?**

Event decisions within the rational choice perspective have brought on the importance of understanding crime events. If the rational choice perspective is “right,” then crime and place researchers would expect to observe very specific crime “types” in practice (Felson and Clarke 1998). Identifying and understanding specific crime events has considerable implications for crime prevention via the ideas behind situational crime prevention (Clarke 1980, 1995, 2008). Crime templates (P. J. Brantingham and Brantingham 1993; P. L. Brantingham and Brantingham 1993) and crime scripts, which are reviewed in Topic 10.2, have been important analytic techniques for advancing crime and place theory. Additionally, the use of specific crime types is an important consideration for crime and place researchers (Haberman 2017; Weisburd et al. 1993).

**How Is Crime Concentrated?**

Humans’ routine activities are spatially structured by the environmental backdrop (P. L. Brantingham and Brantingham 1993) and temporally structured by various constraints (Hägerstrand 1970; Miller 2005; Ratcliffe 2006). Environmental criminology assumes people motivated to commit crime (who have made a positive involvement decision) have routine activities and travel behaviors that are similar to people unmotivated to commit crimes. As such, crime concentrates in space and time (Haberman, Sorg, and Ratcliffe 2017; Ratcliffe 2004; Weisburd 2015) when and where peoples’ activity spaces overlap; however, different crime types may concentrate in different places due to different opportunity structures (Haberman 2017; Weisburd et al. 1993).
Within this context, different types of spatiotemporal concentrations obviously have been a key aspect of crime and place research. In the context of crime and place, repeat victimization involves repeated crime at the same location over a short period, such as when a house is burglarized several times in a year, whereas near-repeat victimizations represent multiple crimes within a short spatial and temporal distance of each other. The flag and boost hypotheses underpin both phenomena, and the methods for identifying and quantifying repeat and near-repeat victimization and testing the flag and boost hypotheses have evolved and grown more complex over time. Topics 5.1 and 5.2 review repeat and near-repeat victimization conceptually and their accompanying methods.

Of course, crime and place researchers are often interested in understanding how crime concentrates across larger units. Topics 5.3, 5.4, and 5.5 review “point pattern” methods to identify concentrations from incident “point” data with just x- and y-coordinates. Topic 6.1 reviews methods of identifying concentrations in data, including “counts” of phenomena, like crime, aggregated to polygon or areal units. Likewise, Topic 7.1 reviews measuring “crime concentration” in a more specific sense, using methods developed and applied specifically by crime and place scholars.

Inevitably, aggregating crime points to polygons or areal units raises the idea of what is the “best” spatial unit. In crime and place research, there has been, generally, a move down the “cone of resolution” to more microgeographic units (P. J. Brantingham, Dyreson, and Brantingham 1976), but there certainly remains much debate regarding selecting units of analysis in crime and place research. Topics 3.1, 3.2, and 3.3 discuss the use of different spatial units ranging from neighborhoods to microunits. Likewise, there are numerous considerations for researchers examining temporal crime concentrations. Topic 10.5 discusses numerous temporal challenges with crime data. Topic 10.6 overviews aoristic analysis—a method for dealing with uncertainty in the recording of time in official crime data.

**Why Is Crime Concentrated in Space?**

The well-established notion that crime is concentrated in space leads to an obvious focus on “why.” The crime and place theories described above lead researchers to different variables that might be correlated with crime. In crime and place research, the crime outcome is most often derived from official incident data (see Topic 4.1), but, certainly, other sources of data like emergency medical services data (see Topic 4.2), victimization surveys (Topic 4.9), self-report data (Topic 4.10), community surveys (Topic 4.11), systematic social observation (Topic 4.12), or video footage (Topic 4.13) may be useful sources of outcome data.

To explain differences in crime levels across geographic units, a number of variables have been used. A large volume of research looks at crime pattern theory’s concept of nodes via land use and facility data (see Topic 4.3); although, there is still much debate about whether these places capture place-type specific routine activities or just “busy places” (Wilcox and Eck 2011). Likewise, past studies have also correlated features of pathways via characteristics of streets with more recent research incorporating measures of street networks via graph theory more directly into explanations of crime concentrations (see Topic 4.4). Land use, facilities, and street network features are effectively proxy measures for differences in human movement patterns, and re-
searchers have sought to develop better measures via other methods. For example, Topics 4.7 and 4.8 discuss crowdsourced and social media data, like tweet locations, for capturing ambient populations. Of course, crime and place researchers may want to measure explanations of crime concentrations, such as informal social control by residents. In these cases, many other data sources will be required, such as census data (Topic 4.5), a variety of open data sources (Topic 4.6), victimization surveys (Topic 4.9), self-report data (Topic 4.10), and community surveys (Topic 4.11). Alternatively, researchers may want to observe places and/or crime events directly. Traditionally, researchers have used systematic social observation to directly capture data from different environments (Topic 4.12). More recently, advances in technology have made it possible to collect environmental and situational data by coding video footage (Topic 4.13). Nonetheless, we would be remiss not to note the lack of research on understanding issues of race and ethnicity and racism in the context of crime and place (Topic 1.2).

After data collection, researchers must decide which is the most appropriate statistical technique for modeling the relationship between geographic crime levels and theoretical predictor variables. Data with a spatial structure often violate the assumption that units of analysis are independent, thus researchers must adjust their analyses appropriately. Topic 8.1 discusses ordinary least squares regression and different variations of incorporating spatial data structures. Because crime and place researchers are often interested in modeling count outcomes, like crime counts in spatial units, Topic 8.2 specifically focuses on how to estimate count regression models given that ordinary least squares models are inappropriate for count outcomes. Topic 8.3 considers how to allow the effects of different predictor variables on an outcome to vary over space via geographically weighted regression. Topic 8.4 discusses how to account for nested data structures, such as people or repeated measures of an outcome nested within places, using a multilevel model (also called hierarchical linear, random effects, or mixed-effects models). Topic 8.5 describes group-based trajectory models that provide an alternative method for classifying changes in crime levels at places over time.

Crime and place researchers have also relied on other tools to address important research questions. Conjunctive analysis (see Topic 10.1) allows crime and place researchers to understand how combinations of different variables explain variations in crime levels across space. Agent-based simulation modeling (Topic 10.3) involves the creation of a simplified artificial society that exists in a virtual world. Important elements in society are represented by agents (e.g., offenders, gangs, and place managers). Each agent acts autonomously and based on elements of the situation. The cumulative effects of individuals’ decisions produce outcomes that can be investigated using the traditional statistical techniques.

**How Do Offenders Move through Space?**

Motivated offenders are a key element of crime and place theories and the possibility of a crime event occurring. Obviously, understanding motivated offenders’ movement through space is vital for understanding spatial crime patterns. As such, measuring geographic distances between two points is a commonly used skill among crime and place researchers (Topic 2.4); however, scholars may also be interested in social distance measures as well (Topic 10.7). Additionally, crime and place researchers have developed and applied a variety of other methods for understanding motivated of-
fenders’ movement across space, such as mobility triangles (Topic 9.1), travel demand modeling (Topic 9.2), and discrete choice modeling (Topic 9.3).

**How Can Crime and Place Research Inform Policy?**

Crime and place theory and subsequent empirical support has led to a series of important crime control policy innovations, such as problem-oriented policing, hot spots policing, situational crime prevention, and so on. Many place-based policies have been evaluated using experimental designs, and Chapter 11 provides an in-depth review of important considerations for place-based experiments. Of course, spatial displacement is a long-standing critique of place-based policies, so Topic 12.1 reviews assessing displacement while Topic 12.2 reviews the notion of inverse displacement. Finally, because crime and place policies may be implemented with a variety of nuances and contingencies, quasi-experimental evaluations are often required. In Chapter 13, some specific examples of how place-based policy evaluations inherently create nuances when designing evaluations are covered (e.g., the definition of “place” is discussed in Topics 13.1 and 13.2) and a variety of quasi-experimental designs that may be appropriate for place-based evaluations are reviewed in the context of acoustic gunshot detection systems, in Topic 13.3.

**Future Questions**

A major motivation underpinning this volume was to provide a comprehensive representation of how crime and place research has been conducted in the past. The hope is that this volume will provide a guide for scholars who will advance crime and place research in the future. In these authors’ opinion, there are at least the following major areas for crime and place researchers to focus on in the near future.

First, crime and place scholars, particularly those testing opportunity theories, will want to further explicate and test specific mechanisms for explaining crime and place patterns. For example, a major body of research links facilities to geographic crime counts, but there is little research directly testing the mechanisms linking facilities to more crime. Development of direct measures of crime and place mechanisms will be vital.

Second, future crime and place work should seek to provide empirical support for how opportunity theories and social control theories may work together. Scholars who believe the theories are incompatible might directly compare the effects of different mechanisms from both theories to determine which is the “best” explanation of crime at place. Otherwise, scholars may begin to integrate the theories that have long been viewed as separate into a single theoretical framework.

Third, robust empirical work on testing how and why crime is concentrated across both space and time is necessary. While scholars have begun to explicate how space and time may interact to create crime patterns (Haberman and Ratcliffe 2015; Ratcliffe 2006), more empirical work is needed. Related to our first point, this future work should seek to directly test key theoretical mechanisms.

Fourth, place-based crime control policies in policing have been some of the most promising strategies developed in recent memory. For many policies, like hot spots policing, a rather vast evidence-base exists showing if policies “work.” In the future,
more research will be needed to contextualize place-based policies. Specifically, research that shows why place-based policies are effective (i.e., implementation science) will be important. Additionally, research on whether and how place-based policies have unintended consequences will be important.

Fifth, place-based strategies do not require police and thus should be a core element as many cities reimagine public safety. John Eck (2018) offers a clear blueprint for how this might be accomplished via place management. Increased scholarly investigation of the connection between public and private investment in places and crime is another avenue. This will require the development of new measures and the identification/specification of associated mechanisms. Finally, more explicit recognition of the influence of racist structural policies in shaping crime patterns is needed (see Topic 1.2 this volume).

Overall, crime and place research has advanced tremendously over the past few decades. This volume details a variety of complex methodological and analytic developments that have underpinned this growth. With the proper theory and methods in researchers’ tool kits, it is likely that crime and place research will continue to flourish.

NOTES

1. Although we do not go into detail about it here, we recognize the movement toward crime science as well (Laycock 2012).

2. We note Shaw and McKay’s (1942) original work focused on the home addresses of juvenile delinquents rather than actual crime events.

REFERENCES


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