

**Book Review: Leslie W. Kennedy, Joel M. Caplan, & Eric L. Piza, *Risk Based-Policing: Evidence-Based Crime Prevention with Big Data and Spatial Analytics*. California: Oakland. 2018. ISBN: 978-0520295636 (Paperback). 168 Pages. \$29.99.**

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Risk-based policing combines academia with policing knowledge and resources to increase public safety while reducing crime. Authors Leslie W. Kennedy, Joel M. Caplan, and Eric L. Piza explore this endeavor in the book *Risk Based-Policing: Evidence-Based Crime Prevention with Big Data and Spatial Analytics*. Through the exploration of risk and big data, the authors explain to readers the concept of risk-based policing strengths and weaknesses. They also include suggestions and adoption strategies for police agencies through real-life examples and implementations.

The authors introduce the main concepts of risk-based policing immediately. Risk-based policing, in general, examines the contextual factors that increase the risk of crime. The big takeaway is that risk-based policing focuses on the locations of crime as opposed to the criminal. There are three necessary steps to this idea: assess the risk, deploy resources, and check for success. The goal is for more efficient use of police forces by looking at reducing risk-factors and monitoring at-risk places instead of "arresting the problem away." The authors advocate for using technology and data in order to find patterns and clusters of crime. Risk terrain modeling (RTM) is one of these developing technologies and is explored throughout the book. One of RTM's uses is to find hot spots or concentrated areas with unusually high levels of crime. The authors claim hot spots result in "self-fulfilling"

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policing (if one expects to find crime in a specific location, eventually crime will appear) (7). Instead, the authors investigate how environmental factors lead potential offenders to commit a crime. Large and small cities alike are adopting geo-based technology; thus, there is a need to manage and analyze these "big data."

The history of policing, while relatively new in terms of human history, has undergone many changes. Policing strategies are continuously evaluated and modified, and macro and micro-goals have shifted. Since the beginning of the 911 operating system (1968), there has been an explosive use of technology worldwide. Modern policing has particularly embraced its advances, especially in crime-analysis techniques and data collection. However, one of the caveats to policing is its political nature and influence, even during the professionalization era and state of current affairs. Despite the necessity to appease political leaders, the authors claim that policing has embraced criminal theory and evidence-based policing, and is "at the cusp of a new era of policing" (22). However, with immense data collection options and analysis, this era requires refinement in these regards to improve policing strategies and public safety. The authors tackle these issues using risk terrain modeling (RTM). RTM has the potential to inspire more effective, well-rounded, and efficient policing. It can help police isolate hot spots, then identify the social and environmental factors that lead to high crime rates. Identifying and understanding these hot spots is more effective than researching offenders who theoretically commit a crime when there is a suitable target, lack of capable guardianship, and motivated, which can be location-specific (Cohen & Felson, 1979).

The book also lists the requirements for effective risk-based policing, which is timely in an era of heightened scrutiny involving excessive police aggression or tactics (Roithmayr, 2016). The aim of risk-based policing is tuning in with community goals and its stakeholders, which involves "the need for transparency and accountability" (32). In this process, accurate information and data can help guide police leaders in officer deployments and community engagement. RTM is a big part of collecting and disseminating these crime data by looking at key features of high-crime locations. There are three main processes of RTM explained by the authors. The first is standardizing datasets for geographic comparisons, followed by identifying the spatial risk factors and finally specifying spatial weaknesses. Spatial influence is a critical factor in identifying environmental factors for geographic comparisons. The second step involves appropriate statistical analyses and weighing certain environmental factors differently. Sequentially, the third speaks

to accurate communication within the spatial contexts. Each of these steps helps identify crime risk at the microlevel, across suburban, urban, and rural areas. RTM, in combination with social media and public complaints, can also help narrow down the riskier areas and enhance the transparency between police and the community. Within the book, these steps are clearly laid out with concrete examples and sustenance, making each step understandable and reliable.

The authors also explored ACTION meetings between the public or multiple stakeholders and police. ACTION stands for Assessment, Connections, Tasks, Interventions, Outcomes, and Notifications. Each step is detailed within the chapter, starting with an assessment of the risk narrative, or assessing qualitative accounts of criminal activity or connected events. Second, are connections that investigate factors that draw illegal activities and create crime clusters or hotspots. The third is task management, which considers the practicality and effort needed for appropriate data collection, analyses, while continuously updating the system for RTM. Intervention planning and implementation use the data for problem-solving and how to limit risks within these concerning areas. After implementation, outcome evaluations are used to determine any changes in crime numbers and identify what did and did not work for current policing goals. Lastly, police leaders must present this information to others, including media, social media, and all levels of the policing hierarchy and community stakeholders. An example of ACTION includes identifying areas in need of more patrol, police interacting with businesses in hazardous locations, and focusing on specific areas during periods of high crime. These meetings serve to both guide officers on where to patrol, and what precautions to take once there. They primarily emphasize public engagement for how to handle crime, with the ultimate goal for RTM and ACTION to become part of the standard operating procedure for all police jurisdictions. The authors' expansion and an assertion that keyholder involvement is essential in risk-based policing follow current literature (Bureau of Justice Assistance, 2015).

An essential element of the book expands on the sociological and criminological theories that support risk-based policing. The authors mention environmental criminology, routine activities theory, rational choice, and crime pattern theory to research risk because "risk is calculable" (55).

Certain activities and physical structures such as bars, fast food places, and gas stations are known as crime generators and attractors. Focus on these physical and environmental factors shifts away from blaming

offenders, and instead on offender views of opportunity and risk. Using previous research by Kennedy (1983), the authors explore the crime kaleidoscope, a representation of a city environment, and how its arrangement of physical locations interacts with crime opportunity. In essence, the authors' support for risk-based policing and analysis are validated by previous empirical literature and theoretically consistent.

The purpose of this research is to identify target areas and risk reduction strategies used by police forces using empirical and theoretical evidence. The study takes place in the Brooklyn borough of New York and uses robbery crimes as the units of analysis. Data between October 1, 2014, and September 30, 2015, were collected through the New York City Police Department and spatially analyzed using x-y coordinates. The researchers looked at both vulnerability and exposure of places as predictors of crime, or a prediction accuracy index (PAI). PAI was calculated through the "combined effects of exposure via kernel density estimation (KDE) and vulnerability via RTM" (65). While they found that RTM was more accurate in predicting robberies than KDE, the use of combining the measures had the best predictive power. Overall, they conclude that these results uphold the theory of risky places, and a unified measure can compare different geographic locations. The authors illustrate their argument that spatial vulnerabilities and exposure concepts increase crime predictability power for proper resource allocation and risk reduction strategies.

The authors researched risk-based policing strategies in four cities, Colorado Springs, Glendale, Newark, and Kansas City. They received funding from the National Institute of Justice under the Department of Justice with two research objectives: authenticate RTM in separate areas and across crime categories and assess the effects of these risk-reduction strategies within the cities. They compared cities with intervention strategies to police departments who did not and used propensity score matching (PSM) for appropriate statistical analysis. There were multiple independent variables, including if the street unit intersected a high-risk cell or street unit (calculated by RTM), concentrated social advantage, racial heterogeneity, and others. Each variable was extensively described and empirically backed for appropriate statistical analyses.

Risk-based intervention in Colorado Springs focused on incidents of disorder. There was a significant reduction in motor vehicle thefts during the intervention period, which also diffused to areas outside the targeted area. There was also a significant decrease in motor vehicle thefts associated with increased code enforcement, which follows previous

empirical evidence. The process all occurred without arrests and using only non-punitive approaches such as verbal warnings.

Glendale, AZ, was another city of interest. The Glendale Police Department identified robbery as the target of risk-reduction strategies and had a three-month intervention period. These risk-reduction strategies included "direct patrols, flyer distribution, community meetings, public engagement activities," and more (83). There was a 42 percent decrease in robberies compared to the control area with an extension of benefits beyond the target area. Each of the reduction strategies guided police allocation of resources and how to handle situations when they arrive on the scene.

Newark, NJ, and Kansas City, MO, were also found to have significant decreases in crimes through risk-reduction strategies exercised by their respective police departments. Ultimately, the authors articulate that these strategies, when developed independently and customized to the city's crime priorities, history, and organizational goals, can reduce crime while avoiding arrests or harsher penalties. The authors were tasked with explaining their research in a book format, and the results sections may be confusing to those with an elementary background in statistics. However, the expansion of the results was thorough, lending empirical support to risk-based policing while demonstrating its effectiveness to community stakeholders and police leaders.

The authors also qualitatively evaluated implementing risk-reduction strategies by interviewing analysts and police in four police departments. They looked at the four phases of police and strategy implementation: problem analysis, project design, project implementation, and project evaluation. They found that crime analysts serve an essential purpose in innovating police action strategies and serve to translate data and crime rates into an understandable form for officers to access. However, crime analysts are sometimes discredited by the police culture and hierarchy because they are not sworn-in personnel. Their input, however, must be bought-in by police managers and supervisors to form a relationship between the academic and police authority for optimal goal achievement, to reduce crime. While police are encouraged to explore and use data they have collected, the authors emphasize that the use of analysts can find patterns and make suggestions. The authors also expand on other problems or observations at each stage of the risk-based policing model, and ways to improve implementation are laid out and understandable to the intended audience.

Another vital aspect supported by the authors for risk-based policing is integrating multiple stakeholders with police agencies. Support for this

claim came from their research in Jersey City and Atlantic City. Each city conducted ACTION meetings with police and community stakeholders to facilitate news and updates from data collection. Quantitative data and public input enhance the overall effect of risk-reduction strategies. For example, while RTM can help policymakers and police identify high-crime areas, predict crime, build intervention strategies, and allocate resources, there is no substitute for community knowledge. Especially when combined with ACTION meetings, it "yields effective and sustainable problem-solving and risk-governance" (125).

Ultimately, the book promotes how RTM and risk narratives can enhance the spatial and situational context of crime but can only succeed with buy-in from both academics and police departments. There are multiple suggestions within the book that are feasible and actionable, even for small or low-budget police agencies, and can be adopted into a standard procedure. Data-driven and evidence-based risk-reduction strategies can enhance community relations by increasing transparency and is financially and politically sustainable. Also, it can empower the community to understand why police officers react and act during their job to enhance their safety. Intervention strategies and data analysis also takes a step back from focusing on offenders and instead on situational and environmental factors that lead to crime. This divergence from offender-blaming and instead on environmental context is a relief for researchers and police departments who realize outdated policies for harsher penalties and incapacitation are not the solution.

Overall, the book has many strengths for both academics and those in the policing occupation. The authors avoid complicated ideas and academic jargon to explain the concept of risk-based policing. The book is also laid out in an intuitive format, beginning with an entire chapter explaining risk, issues of big data, and risk-based policing, before moving onto the history of policing. I appreciate the in-depth discussion about policing because it shows the authors' acknowledgment that police departments are everchanging in their core missions, strategies, and technological advancements. Implementation of risk-based policing is a slow but embraced practice in current policing, and adds to its history. Another strength is breaking down the aspects of risk-based policing, such as RTM, essential practices of risk-based policing, and spatial risk narratives. The authors especially emphasize community and multi-stakeholder involvement, which ties to community policing initiatives throughout the United States. Lastly, they tie risk-based policing to

criminological theories, strengthening their argument for implementation into police departments.

Despite these strengths, the book is not without flaws. One is the explanations of their case studies. While well-written, the format for case study chapters was similar to an academic journal as opposed to also appealing to police supervisors and managers interested in risk-based policing. For example, an expansion of each statistical table could benefit from explaining what statistical significance is and what variables were and were not significant. There are typically word or page limits in research articles, so not every finding can be fleshed out. Interpretation of both significant and non-significant factors would help all readers understand why specific strategies or crime generators impact or are unrelated to crime. Despite these weaknesses, however, each finding was supplemented by suggestions for how any size police department can adopt these practices.

Overall, the book is helpful in multiple ways. It is relevant in a time where there are police criticisms and a community yearning for change in the criminal justice system and its practices. The authors explored possible change using risk-based policing and lay out the format for implementation. These changes include how police officers can work with crime analysts to find spatial crime trends and ways to reduce crime. There is especially a push for cooperation between these occupations along with community participation and input, which previous research has found to be fruitful for community relations while limiting the "tough on crime" mantra and focusing on offenders. The book is a successful push for implementing new methods and entering a new era of policing.

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