

Introduction: An Integrated Approach to Crime Mapping

It is often said that a picture is worth a thousand words. If that is true, then a map is worth a million, and maybe more. Even at just a glance, a map can reveal what no amount of description can. Maps are the language of geography, often the most direct and effective way to convey grand ideas or complex theories. (de Blij, 2005:21)

This quote from Harm de Blij articulates precisely how maps are crucial in informing our spatial understanding of human concepts and social phenomena. Maps provide visualisations that are closely tied to how we come to know and understand our surroundings (Muehrcke, 1996). They become historical artefacts that record knowledge representative of the reality it depicts.

As criminology has developed as a discipline, so too had its engagement with maps. Maps of crime and crime control are heavily utilised by law enforcement agencies. Newspapers and news programmes present maps to illustrate the location of criminal events they report on. Maps are often employed by scholars in the field to demonstrate spatial patterns of offending or victimization, littering Criminological research and often promoting policy recommendation. Maps have and still are experiencing a profound growth within the discipline made most notable by the 2009 creation of an academic journal, '*Crime Mapping: A Journal of Research and Practice*', dedicated to the 'crime map'.

Mapping is a vital process in our disciplinary understanding of crime, deviance, and control. Simply, knowledge produced from mapping social phenomena informs spatial patterns of offending and crime control decision-making. For some, maps become necessary entities in narratives of crime and crime control because they express and convey multiple concepts such as patterns of offending, spaces of victimisation, and law enforcement strategies to combat criminal phenomena.

While the use of maps and the practice of mapping crime and crime control are prevalent within Criminology, it remains critically unexamined. This is not to suggest that ample literature does not exist in regards to how maps may *inform* criminological knowledge or how to *construct* these maps in GIS programmes, most notably Keith Harries' (1999) *Mapping Crime: Principle and Practice*. Instead, there is a general lack of appropriate engagement in critique of maps and the mapping process. Most startling is the use and application of maps in studying crime and crime control without considering the problems inherent in cartographic practices.

Often times, crime maps seem simple and rather self-explanatory. As with other forms of knowledge and power, this sort of ‘uncritical’ read perhaps best exemplifies the average person’s interaction with “crime maps”. Typically, crime maps are absent of critical questions or a critical presentation of data. Rather, most convey a sense of comfort and ease when viewing a map that visualised the statistical patterns listed on pages of some impenetrable journal article typically discussing ‘hotspots’ of crime. One chapter by Marcus Felson (1986) on ‘Predicting Crime Potential at Any Point on the City Map’ is particularly difficult to comprehend with an equation that supposedly forecasted crime in any location, as written below:

$$C_i = \sum_{j=1}^{E_j} \frac{E_j}{D_{ij}}$$

E_j refers to events occurring at the j^{th} point in space.

We can define crime risk at a point in space which may never itself have been the exact scene of a crime, if we assume: (1) surrounding incidents make a given point risky, since offenders may easily get there; and (2) people living at one point often travel to proximate points, hence exposing them to nearby risks.

After taking years of social statistics precisely to understand and calculate the answers to these sorts of equations, ‘thankful’ is an understatement for how a map could aid visually to my understanding of the literature on ‘hotspots’ of crime. Perhaps Pinder (2007: 459) captures that feeling more adequately when he states, “one of the reasons for making a map is in response to feeling ‘uncomfortable in an uncomfortable world’”. Popular in criminology are approaches to mapping crime that draw from collected statistics which are then contorted into equations that claim to calculate criminal phenomena. Areas of criminology, specifically cultural criminology, have challenged the use of numbers to determine human behaviour. Jock Young (2004:19) contends in ‘Voodoo Criminology and the Numbers Game’ that criminology is progressively turning to positivism, which “entails the belief that the crimes of individuals can be predicted from risk factors and that rates of crime can be explained by the changes in the proportion of causal factors in the population”. Though exposing the flaws inherent in the ‘scientific method’ embraced by conventional criminology, rarely (if ever) are the resulting maps ever brought into question.

Several years of reading and reconsidering the roles maps play in the study crime and crime control lead me to the conclusion that while maps are vital and prolific in criminology, there is no established ‘Cartographic Criminology’ that develops the lessons evolved in the cartographic and geographic disciplines. This thesis is about emerging a Cartographic Criminology driven by cartography and geography, contributing to a more sophisticated and creative understanding about maps of crime and crime control.

Furthermore, it puts crime mapping into the (possible overlapping) context of cartography and geography (social, political, and cultural).

Inspired by a presentation Jock Young delivered at the 2009 annual American Society of Criminology conference in Philadelphia on November 6, I belong to a new generation of scholars that need to appreciate and embrace dangerous knowledge that makes a mess of the field. He rightly expressed that “imagination is one thing, criminology is another”. This thesis hazards the chance of constructing a core, foundational, and most certainly an original exposition of the ways Criminology can grow and improve in its fundamental employment and knowledge of maps. To be sure, it is a risky endeavour this thesis is trying to undertake. The creation of a legitimate Cartographic Criminology, which attempts to consolidate and build a criminology that unites cartographic and geographic literatures, holds promise to advance the literatures of all three disciplines, and dramatically improve how the public comes to understand dangerous places. .

To begin, this thesis reconciles the relevant literatures in three vast disciplines to address the growing use of crime and crime control maps. Perhaps the best approach is to begin with the research in cartography and geography, drawing most notably from scholars such as Crampton (2001), Edney (1996), and Wood (1992) who raise critical questions about maps (as a product) and mapping (as a process). Though their questions are presented to the larger disciplinary audience within cartography and geography, they are adapted for the development of a Cartographic Criminology in this thesis. To this end, the study pursues several broad research questions raised by the geography literature.

- How do (crime) maps work to produce knowledge? What is the discourse of cartography?
- How are (crime) maps constructed to convey intended messages?
- What are the contexts and functions of (crime) maps?
- What are the inherent problems in (crime) maps?
- What are the ethical considerations and consequences of (crime) mapping?

I approach these general questions by exploring and applying geography literatures to informing the many ways we can reconceptualise and design ‘crime maps’. This approach emphasises imagination in the many ways deviance, crime, and control can inform our criminological knowledge. Maps, of all types, sustain many diverse

interpretations and are shaped by shared beliefs and values, social constructions, and social situations.

The goal of this thesis and my contribution to criminology is to ultimately answer: **What does a critical cartographic criminology look like? Additionally, what are the “best practices” in terms of theories that inform and methodologies that build this approach?** With the prolific and growing use of maps in the social sciences in general, and in criminology in particular, the time is ripe for a discussion critical evaluation of maps in the literature and ethical discussions on their application in the field.

Thoughts on Space in a Thesis about Maps

The literature on space itself is vast. Space is a focus of study for those in critical social and anthropological theory, geography, literature, art, epidemiology, political economy, and so forth. To master the topic of space in one form or another is an enormous undertaking for those who engage with it and produce insights that further advance our understanding of the world and social, political, and cultural structures. Wedding literatures on space and cartography is a noble venture and one not to be taken lightly.

Although this thesis is about cartography and its relationship to criminological thought, space and its many multiplicities informs the pluralities that exist in mapping construction and interpretation. Each chapter engages with a geographical perspective (social, political, and culture, see chapters 3-5) to inform approaches of developing a critical cartographic criminology, offering a lens from which case studies with maps are discussed. However, these literatures are not exclusive and limited to the scope by which these case studies provide case studies of how a criminological community can engage with maps to produce critical thought. A mastery of space is not presented here. Instead, the following is a nod to the spatial literature that purveys current thought in the social sciences.

To talk about space and its growth in critical social theory through the mid-to-latter part of the 20th century starts with Henri Lefebvre and *The Production of Space*. Ironically, although Lefebvre’s intention was not to “produce a (or *the*) discourse on space” ((Lefebvre, 2008/1974: 16), his opus has left a lasting legacy on the subject. Like others in this field of thought, Soja (1989: 41-42) attributes “the reassertion of space in critical social theory” to Lefebvre.

As dense as Lefebvre’s work is, his central claim is simple; (social) space is a (social) product. Emerging from this proposition is a conceptual triad; three dimensions

of social space Lefebvre argues are distinct albeit analogous. Summarised in Table 1.1, these three dimensions – spatial practice, representations of space, and representational space – encompass all of social space and how it is indeed a social product. First are spatial practices, the *perceived*, the physical space one inhabits, the infrastructure and organization of space that outlines the paths, networks, and trajectories of everyday life. Secondly are representations of space, the *conceived*, a mental or abstract space imposed on the physical or concrete. Thirdly are the representational spaces, the *lived*, the social space. It is imbued with meanings, “directly lived through its associated images and symbols” (Lefebvre, 2008/1974: 38). Representational space resides somewhere between and between the perceived and conceived, creating “a means of living in that space, of understanding it, and of producing it... [bringing] together verbal signs and non-verbal signs” (ibid.: 47-48).

Concepts	Spatial Practice	Representations of space	Representational Space
	The Perceived	The Conceived	The Lived
	The Physical (nature, cosmos)	The Mental (logical and formal abstractions)	The Social (symbols, codes, meaning)
Lefebvre’s description of each concept (Lefebvre, 2008/1974: 33)	Embraces production and reproduction, and the particular locations and spatial sets characteristic of each social formation. Spatial practice ensures continuity and some degree of cohesion. In terms of social space, and of each member of a given society’s relationship to that space, this cohesion implies a guaranteed level of <i>competence</i> and a specific level of <i>performance</i> .	Tied to the relations of production and to the ‘order’ which those relations impose, and hence to knowledge, to signs, to codes, and to ‘frontal’ relations.	Embodying complex symbolisms, sometimes coded, sometimes not, linked to the clandestine or underground side of social life, as also to art (which may come eventually to be defined less as a code of space than as a code of representational spaces).

Table 1.1. Lefebvre’s Conceptual Triad of (Social) Space

In sum, space is a means of production and not a thing or a product. It produces the daily routines of lives through organization; it creates order; and it has a symbolic force that communicates meanings and invokes the imagination. It is intertwined in social life, spatial structures and relations are the manifestations of social structures and relations evolving over time. It is multifaceted and (re)produced through a process of production.

“Social space” is the generic for the infinite social spaces that are not and cannot be counted. In any single moment in time, the infinite social spaces are themselves multifaceted. These infinite social spaces, however, do not remain static. They are

defined and redefined; produced and reproduced; transformed when old relations dissolve and new relations emerge. Our knowledge of it must remain fluid and flexible to the forever changing nature of this process of social production. Indeed, as Soja (1989: 122) argues, “spatiality exists ontologically as a product of a transformation process, but always remains open to further transformation”.

In *The Practice of Everyday Life*, de Certeau (1998) presents compelling narratives of everyday stories and routines as treatments of space. Building on to Lefebvre’s proposition that space is a means of production that is open to transformation and interpretation, de Certeau proposes that space is composed of intersections of elements and there are as many spaces as there are distinct spatial experiences. The work of de Certeau, while valuable and informative to a variety of thought and theory, speaks to this thesis in a particular way. In his introduction, de Certeau comments on the growth of the visual in modern day society and ‘the impulse to read’. The fetishism of maps, as argued throughout this thesis, addresses that impulse to read and to have a view of space that can be consumed and digested. He writes,

“The map, a totalizing stage on which elements of diverse origin are brought together to form the tableau of a "state" of geographical knowledge, pushes away into its prehistory or into its posterity, as if into the wings, the operations of which it is the result or the necessary condition. It remains alone on the stage. The tour describers have disappeared.” (de Certeau 1998, 121)

Maps stand alone as visual communicators of represented space. When they are consumed, they are done so without a verbal narration explaining the lived experience, the spatial practices informing its creation, or its intent. There is much that takes place in space prior to the map, but it is the maps themselves that remains the focus of this thesis.

In addition to space being a means of production, it is also a means of control (cf. Chapter 4). Those who control the production of space hold in their hands domination and power. It is in their best interest to conquer and control it. Harvey (1990) outlines a series of dilemmas¹ from Lefebvre’s positions with each consequential in their own right.

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- ¹ Harvey (1990: 254-258) extracts five explicit dilemmas out of Lefebvre’s proposition:
 - If it is true that the only way that space can be controlled and organized is through this ‘pulverization’ and fragmentation, then it behooves us to establish the principles of that fragmentation. If space, as Foucault would have it, is always a container of social power, then the reorganization of space is always a reorganization of the framework through which social power is expressed.
 - What Enlightenment thinkers began to grapple with was the whole problem ‘the production of space’ as a political and economic phenomenon.
 - There can be no politics of space independent of social relations. The latter give the former their social content and meaning. This was the rock upon which the innumerable utopian plans of the Enlightenment foundered. The pulverization of space, which Jeffersonian land politics presumed would open the way to an egalitarian democracy, ended up being a means that facilitated the proliferation of capitalist social relations.
 - The homogenization of space poses serious difficulties for the conception of place. If the latter is the site of Being, the Becoming entails a spatial politics that renders place

However, they all lead to a single fact Harvey (1990) warns us about: **the fact that space can be conquered only through the production of space**. Lefebvre's conceptual triad and strong themes of production of (social) space – its multiplicities, its transformations, and its source of power – emerge time and again. The mapping and dissemination of maps is another form of control explored in this thesis.

The multiplicities of space can help us understand the many ways maps can be constructed and interpreted. Let's for example imagine a map between an unknown location and the city of Cleveland while reading the following humorous exchange from the 1990s American sitcom, *3rd Rock from the Sun*:

Professor: How far away is Cleveland?
Student 1: 52 miles.
Professor: Someone give me another answer.
Student 1: An hour away.
Professor: Cleveland is an hour away. Someone give me another answer.
Student 2: A 9-dollar bus ticket.
Professor: Cleveland is 9-dollars away.
Student 2: A felony charge. The federal court house is there.
Professor: Cleveland is a felonious assault away. Someone else...
Student 3: Cleveland is an eternity away if your heart is there.
(3rd Rock from the Sun, S1:E1)

This illustrates how the space between two locations can be regarded in various ways; through distance, through time, through consumption, through action, and through emotion. When viewing this hypothetical map, many will consider distance over the other elements that can define the space between two pin-pointed places. However, space is much more than distance just as the reads of maps can represent these elements to the reader.

Consider the emergent literature on non-representational geographies, introduced by Thrift (2007) and carried on by his many colleagues and contemporaries². Nonrepresentational geographies focus on the present – the here and now. While the tenets of practice in the discourse on space varies across research(ers), the approach rationale align.

“Non-representational/emotional/affective approaches grew out of dissatisfaction with representational approaches because they drove too big a gap between the object of study and the process of study and because they missed not only the bulk of everyday life in practice, but also its richness, its key registers which are critical to politics, ethnics, culture and economy.” (Glass and Rose-Redwood, 2014: 8)

subservient to transformations of space. Absolutely space yields, as it were, to relative space. It is precisely at this point that the incipient tension between place and space can get transformed into an absolute antagonism. The reorganization of space to democratic ends challenged dynastic power embedded in place.

- This leads us back to the most serious dilemma of all: the fact that space can be conquered only through the production of space.

² Including, but not limited to: Anderson, Dewsbury, Harrison, Lorimore, McCormack, and Wylie.

Literature on non-representational geographies contend that textual representation of space is unable fully capture and convey the lived experience. It is within in this spirit that NRGs identify the need to move away from discursive representations in favor of tenets seeking to present the embodied movements of everyday practice.

Inherent in nonrepresentational geography is a temporal suspension; a removal of time from the practices of space in favor of being in the present. However, the role of time when studying space is important since time is a facet of being and becoming. Although there has been a traditional prioritization of time over space, life is both space and time together. The histories of space, as informed and influenced by memory, are what add to the experiences of spatial practice. Jones' (2011) spots the neglect of memory in NRG perspectives, in turn arguing that memory should be included since memory is “fundamental to becoming, and a key wellspring of agency, practice/habit, creativity, imagination, and thus of the potential of the performative moment that so interests nonrepresentational geographies.” (ibid. 1-2) This builds on de Certeau's claim that memory ties us to place; “It's personal, not interesting to anyone else, but after all that's what gives a neighborhood its character... This is a sort of knowledge that remains silent. Only hints of what is known but unrevealed are passed on "just between you and me" (de Certeau 1998: 108). Per the purpose of this thesis – understating the how a critical cartographic criminology can fully and ethnically engage with maps – one must account for meaning and memory working in tandem to produce social and collective meanings.

There is always more to understand about space and its representations (or non-representations or more-than-representational)³. And while acknowledging there is a solid place for NRGs within the larger body of research on space, agreeing that the world is more excessive than we can theorise, we still have to rely on representation when constructing maps.

Maps are inherently representations of space. Even though there are multiple spatial itineraries informing the construction of a map, the end product is cleansed from the practices that produced it. The limitation of maps is the limitation of the discursive and (re)represented. A critical cartographic criminology appreciates the role of spatial

³ There is a link between representational space, nonrepresentational geographies, and representation more broadly. However, this link falls into the old trap of the ‘real’ and the ‘represented’. For this, the best course of action is to refer to Majir Yar (2014:3) and his arguments on ‘representations; *“Representations cannot and should not simply be dismissed as instances of ideological misdirection or “false truths”, but should instead be taken seriously as socially situated and contextually relevant forms of sense-making that both reflect and shape our shared world views. It is precisely in their resonance with common existential and moral concerns that they find their purchase in the imaginations of their audience and offer us an important window into collective sensibilities.”*

practices in the mapping process and NRGs can help speak to mapping practices, but not necessarily to a cartographic criminology.

Massey (2005) helps provide context in the relationship between space and maps. She says, “Maps are about space; they are forms of representation... representation is understood as spatialisation. But a map of a geography is no more than geography – or that space – than a painting of a pipe is a pipe” (106). Maps are and represent many things; they are pragmatic (practical uses), epistemological (communicative), ontological (brings things into question), and aesthetic (artistry). Maps confront challenges similar to that of space. However, unlike space, cartography is not as wholeheartedly engaged with at the same level and across the same spectrums. It is for that reason and rationale that space is respected and awed for the depth it offers but left to those who wish to master it.

The Plan of Study

To explore the lines of inquiry detailed above, this study makes use of a variety of literatures, data sources, and various kinds of maps as types of case studies. Compared to more conventional research theses, this thesis is unique because it employs creative albeit precarious navigation through relatively uncharted territory in Criminological literature. Allegorically, small islands of mapping research bodies exist in the literature; it is just a matter of carving the path between these bodies to create a cohesive appreciation of crime maps, as such this study makes use of maps from various sources within Criminology, Sociology, Geography, and Cartography. The types of maps used as case studies range from classical to contemporary maps, critiquing maps from published academic works, government sources, popular culture, Google Earth, and self-drawn mental maps from ethnographies. These maps range from basic maps, technological maps, and cognitive maps. For the most part, these case studies focus on the contexts of maps, politicised understanding of maps, and the ways maps (de)emphasise meaning.

To date, the criminological literature has not fully employed a critique of its intention of crime maps and the consequences of their publications. Criminology undervalues, underestimates and fully lacks the knowledge of cartography and geography. Therefore, this thesis first needs to establish a fundamental appreciation of Cartography. After all, cartography is ‘a major structural pillar of all forms of geographical knowledge’ and ‘provides one thematic point of convergence from which ‘strong’ ideas about the role of geographical knowledges’ (Harvey, 2001:219-222). The first chapter offers a brief review of Cartography and identifies the insights that this field

offers as a framework for situating crime maps. The second chapter offers an overview of Criminology's engagement with maps. The remaining chapters focus on maps depicting a variety of criminal and deviant activity, the acquisition of the maps, and the general consequences of their use.

Chapter 1 - *Cartography: the development and critique of maps and mapmaking*. This chapter provides both a brief history of cartography and an introduction to the debates that surround critical cartographic discourse. Like a map, the literature reported in this chapter covers large areas with relatively few details, highlighting the core features (arguments) pertinent to the terrain (my overall thesis). Finally, the chapter will conclude with some key cartographic lessons that set the stage for subsequent chapters; the ultimate goal being the development of a more thoroughgoing and reflexive cartographic criminology.

Chapter 2 – *Towards a Cartographic Criminology?* This chapter poses a series of questions about how cartography and mapping practice have been used within criminology. More specifically, it introduces the history of cartography within criminology, arguing that, whilst there is a field of study known as the 'cartographic school' of criminology, the discipline has yet to employ cartographic methods with any real sophistication or understanding. By focusing on a series of key historical moments when criminologists sought to place (crime) maps at the very heart of their analysis, this chapter will assert that, not only has criminology tended to reproduce the type of mistakes outlined in the critiques of cartography but that it has also created a further set of problems that have detrimentally affected the discipline.

Chapter 3 – *The Social Geography of Crime and Deviance: Reading Structure and the 'Other' in Maps*. This chapter intends to give a taste of how cartography with the help of social geography can further expand criminology's awareness of the value and magnitude of maps. A brief review of relevant social geography literature and two case studies of social geographies of crime and deviance, specifically canonised ethnographies and maps of registered sexual offenders, are explored to offer perspectives in the building of a Cartographic Criminology.

Chapter 4 – *The Political Geography of State Crime and Violence: Reviewing Genocide and Resistance*. This chapter explores cartographic possibilities utilising a political geography of state crime and violence. Since maps are powerful tools that aid in the development, preservation, and growth of the State, an analysis of the political messages within the map allows for a greater understanding of the roles that maps can play in governance. Criminology of the State is not as well developed as other literatures

in the discipline. Critical criminologists, such as Richard Quinney (2000), argue that the state maintains order by being a coercive and repressive force. Analysing maps of genocide and police violence strongly provides support for this theory and are the case studies utilized in this chapter. Under the umbrella of the “Criminology of the State” are crimes of government and crimes of control. This chapter seeks to explore how maps can be used to depict both of these areas of interest.

Chapter 5 – *The Cultural Geography of Crime Tourism: Psychogeographies and Spectacles of Transgression*. This chapter explores the pluralities of maps and demonstrate how they provide the opportunity to recreate thrill in a mundane world. Integrating cultural criminology and its alternative construction and mapping of deviant spaces, with the literature on new cultural geography, this chapter pushes beyond traditional criminological sights of cartography. Exploring maps of ‘crime tourism’, such as historical city walks of violence and crime as well as grassroots efforts mapping community graffiti, exemplify how maps construct or elicit thrills as part and parcel to cultural narratives of crime and deviance.

Chapter 6 – *Reflections on a Cartographic Criminology and Ethical Considerations and Consequences to Crime Mapping*. Reflecting on the lessons learnt in the prior chapters on how to further develop a Cartographic Criminology, this chapter summarises and discusses ultimately what a Cartographic Criminology looks like and how it can be further explored and developed. Additionally, this chapter considers general ethical issues and consequences as modelled and instructed by Crampton (2001), questioning how mapping knowledge and practice becomes a widely accepted science. In the end, this is a study incorporating multiple literatures and examining a range of maps to best comprehend and define the steps towards a Cartographic Criminology. It also seeks to rediscover an imaginative approach in our understanding of crime, deviance, and control.