

The Criminological Inspection on the “Geographical Crime Scene”

Domingo Magliocca ¹

¹(Independent researcher, Applied Criminology for Investigation and Security, Geographic Profiling Analyst, Police Investigator, ITALY)

ABSTRACT: The article introduces the criminological inspection of the crime scene, its relationship with a geospatial structure, which we have defined as a "geographical crime scene", and with a specific investigative technique called Geographical Offender Profiling. **The criminological inspection differs from the technical-judicial inspection, as it focuses on a different object of research.** The technical-judicial inspection reconstructs the objective dynamics of the crime by "fixing" the traces of it. The criminological inspection is a careful cross observation carried out both through the careful examination of the criminalistic data and its intrinsic value and through the search for the extrinsic value of the forensic evidences present on the site of the crime, aimed at discerning the less evident meaning of details aspects of crime.

Keywords – Crime Scene, Geographical Crime Scene concept, Criminal Investigation, Geographic Profiling, Serial Crime.

I. THE CRIMINOLOGICAL INSPECTION AT THE CRIME SCENE

The only certainty in any crime is that the offender and the victim/target have come into contact with each other at a certain time and in a specific place. Any evaluation of a criminal event starts mainly from the "physical" and technical observation of this place of contact and from the behaviour assumed by the offender in relation to the places of the crime.

The crime scene is the set of places where a crime is committed, it's the product of the interaction between the victim, the aggressor and the environment; it's the container of material evidence and behaviour of the aggressor and traces that should not only be observed for what they are but also for what they might suggest and indicate. Therefore, a criminalistic analysis of the crime scene is mandatory, following the procedures of the technical-scientific inspection; however, it's even more favourable, for the investigation, to carry out a criminological inspection at the crime scene, to go in search of the criminological traces, the psychological imprints of the victim-offender relationship. **The criminological inspection differs from the technical-judicial inspection because of the object of research.** The technical-judicial inspection enhances all those elements capable of reconstructing the objective dynamics of the crime through the "fixing" of the traces of the crime; the criminological inspection is a careful cross observation carried out through both the careful examination of the criminalistic data and its intrinsic value and through the search for the extrinsic value of the circumstantial and forensic traces present at the crime scene, from which it's possible to discern the behaviours of the criminal at the time of the fact and its characteristics.

Forensic science experts attach great importance to reading the crime scene, because the data contained therein form the basis for the criminological inferences on which modern criminal profiling techniques rest. In fact, the reconstruction of a scene is characterised as a well-targeted activity on the scene of the crime conducted through the various surveys relating to criminalistics (descriptive, planimetric, photographic, fingerprinting, biological, ballistic, consultancy by the coroner) and as an indirect activity based on a critical analysis procedure aimed at searching for the typical and particular traces of the crime scene useful for understanding the criminological characteristics of the offender. The criminological inspection is part of the phase following the technical reconstruction of the scene and, while using the physical and concrete data that emerged from the examination of the crime scene, it moves beyond the perimeter delimited by the yellow tape of the physical crime scene to try to determine why and who committed that crime.

In the phase of criminological inspection of the crime scene, the trace takes on a broad meaning as it does not only refer to the criminalistic trace, but also to the behavioural trace, or to "the traces of meaning, those elements of the crime scene crime that refer to the author's style, to the possible motive; those indicators which, through the actions carried out and the methods of implementation, contain elements referable to subjectivity in action" [7]. Locard's Exchange Principle is not just about the physical size of the tracks. In fact, the offender may have transferred some patterns of behaviour that make it possible to recompose the logical sequence and modality of the actions left at the

crime scene, the type and level of risk of the criminal, the control exercised over the victim, the motive, the planning of the crime, the expressiveness of the offender, in which it's possible to glimpse the emotional drive that dragged the criminal towards acting out in that particular way, the mobility between crime scenes and the choice of that specific place and not another one.

The criminological inspection, integrating with classic investigative techniques, aims to reveal the hidden meaning of the more complex aspects of a crime contained in the *modus operandi*, in the criminal signature, in the history of the victim and in the possible relationships existing within and between the social actors of the crime (victim/offender), and, last but not least, in the people-places transaction, in the geographical interrelationships of the sites involved in the serial criminal event.

II. THE MODUS OPERANDI

The *modus operandi* constitutes how a crime was committed and indicates a behavioural style, a set of actions that act as tools for the perpetration of the crime and have the purpose of protecting the identity of the author, of carrying out the crime with success and facilitate the criminal's escape. The *modus operandi* is a constantly evolving crime scene action, it's a behaviour learned from the experience, from the maturity of the offender and his own upbringing.

Actions associated with Modus Operandi	Purpose of the Modus Operandi
Age, gender and race of the victim	Protect the offender
Moving options of the offender	Facilitate the escape
Transport of the victim's body to facilitate concealment	Ensure the success of the crime
Time of the crime	
Type of the chosen home/property	Evidence derived from the Modus Operandi
Day of the week	Possible level of education and intelligence
Location of the crime	Profession
Weapon	Experience of criminal activity
Tools to immobilise the victim	Possible contacts with the prison system
Masking	
Various methods to approach the victim	

III. THE CRIMINAL SIGNATURE

In investigative criminology, the signature is a non-functional action to carry out a crime, it represents a necessary ritual to satisfy an inner and psychological need of the offender, a real psychological statement left by the criminal at the crime scene.

In the State V. Fortin case [17], FBI agent Roy Hazelwood, called to provide his criminological opinion on a violent crime, regarding the “signature”, reported to the Court: *"the violent offender who repeats his crimes typically demonstrates a second type of conduct that can be defined as ritualistic conduct, often identified with what experts call signature. This conduct goes beyond what is necessary to commit a crime. The only purpose of these acts is to mentally and emotionally gratify the offender...In my opinion both crimes are motivated by anger, and anger is expressed in the two crimes through the following ritualistic behaviours..."*.

Actions associated with ritual / signature behaviour	Purpose of the signature
Leaving the victim in an “open and display” position - pose	Anger
Leave the victim in a sexually degrading position	Sadism
Insertion of foreign objects	Pleasure

Actions associated with ritual / signature behaviour	Purpose of the signature
Complex use of bindings, bondage with a sexual meaning	
Scripting, coprolalia	Evidence derived from the signature
Grouping of knife wounds in a certain region of the body - eg. piquerism	Lifestyle
Postmortem actions on the victim's body	Personality traits
Mutilation of body parts	Type of paraphilia
Rage on the victim’s pubic area	Type of psychopathology
Overkilling - more than one blow or unnecessary wounds to cause death	
Overkilling - using more than one weapon to cause death	
Post-mortem sexual activity	
Signs of torture	

IV. GEOGRAPHICAL OFFENDER PROFILING

Geographical Offender Profiling is an investigative procedure based on induction that contributes, through the study of the places affected by the crime, to delimit a geographical area in which to concentrate the research of the unknown offender, in particular where the perpetrator of the crime may reside. It’s a method that shifts the investigation on the temporal and geographical information of the offensive events and provides a priority area where it’s possible to better invest and manage each investigative resource as well as general indications about the movement pattern held by the offender in the geographical space. In particular, the main investigative objective of the geographic perspective of the crime will be:

- understand the geographical location of the crime scene in relation both to several criminal events and to one with several connected crime sites;
- examine the mobility of the offender;
- reduce the research area of the offender on the basis of the crimes committed and the related locations;
- establish the probable geographical area of residence or the anchor point of the offender, in the case of a serial crime;
- establish the order of priority in a list of suspects based on their place of residence, or work place;
- suggest possible investigative strategies together with the output of the geographical profile and manage police activities.

The geographic profiling technique is generally applied to various types of crimes with multiple offences, characterised by seriality of the conduct that involves several geographically dispersed crime scenes, no less than five, committed by the same offender in the same geographical area and with a relatively possible cluster close to a single area/location that would involve an alleged geographical anchor, compared to the usual configuration of a "hot spot": burglary, robbery, murder, car theft, rape, arson, bomb attacks, shoplifting, vandalism, kidnapping, sending threatening letters; very often the profile is used in cases of murder, burglary.

The main source of information used to generate a geographic profile are the locations of the criminal events. The technique analyzes spatial data linked to an identified series of locations, in particular the places where the victims' bodies were found/abandoned, the places where the victim was abducted, the point where she was last seen, the places of the fires, the scenes of the robberies, but also every other geographical place associated with the crime.

The geographic profiling technique is based on a double component:

- *qualitative*, which represents the analysis of various factors useful for evaluating the spatial pattern of the offender, which can be conditioned by the victim's activity, by the physical and psychological barriers present in the research area, by zoning, by the transport routes from the socio-demographic aspects of the area and from the presence of the police forces in the crime area; it also analyzes the cognitive and behavioural processes of the offender in order to reconstruct his mental map, why he was in that specific area, if the choice is random, if it’s dictated by practical reasons, if it’s linked to psychological reasons;
- *quantitative*, which uses mathematical and algorithmic techniques to interpret and analyze the geographical space (geo-profile) within which the offender is very likely to have an anchor point or operational base, represented, for

the offender, by the most relevant places (place of residence, previous residence or work, meeting points) which are decisive for the choice of criminal locations.

From a theoretical point of view, the application of geospatial indications to investigation starts from the assumption that the environment exerts a certain action on human spatial behaviour, as the evaluation of the choice of criminal sites by an offender tends to be based on a principle conceptualized by George Zipf [19], called *the least effort principle*, applied to various human activities. Basically, when faced with similar behavioural choices, an individual will usually opt for the one that requires less effort. This consideration, translated into a criminological-investigative framework, is defined as the principle of proximity: a person, having to choose between the different possibilities to achieve a specific goal/purpose, will prefer the option that will involve the least expenditure of time, also intended as the distance to travel. In case of selection of multiple targets, of any route or movement to commit a crime, with the same desirability, an offender will prefer the shortest route and will prefer an easily accessible target located in the vicinity of the residence area.

This principle focuses on the hypothesis that there is a stable relationship between the crimes committed and the home base of the offender. The places where crimes are committed, where the bodies of the victims are disposed or deposited are not chosen by the offender without criteria and are not at all random by virtue of the law of decay of the distance, according to which the crimes committed by a serial criminal decrease as the distance between the place of the offence and his home increases.

Canter [3] developed a model to explain the spatial behaviour of the offender defined as a circular hypothesis, which takes the role of the home base as the inference point of the geographical analysis of a criminal series. From Canter's arguments, supported by various researches also carried out in various countries, emerges mainly a criminal pattern of domocentric displacement, especially in expressive crimes.

V. THE CRIMINOLOGICAL INSPECTION ON THE “GEOGRAPHICAL CRIME SCENE”

In serial crimes, the analysis of the modus operandi and the behavioural signature of the offender makes it possible to connect the crimes to each other, and also to be able to discern an expressive action from an instrumental one, variables that could cause a distancing variation on the geospatial activity of the offender. However, it is necessary to access the geographical, spatial and environmental background of the criminal events to make a valid prediction about the location of the offender.

Geographic profiling exploits the geographic component of crimes and constitutes an appendix to the investigative-behavioral analysis of the crime scene but, compared to the latter, directs the inspection activity towards what we have called the "geographic scene of the crime".

Between the first meeting point with the victim and the place of abandonment of the corpse, the latter site is the classic crime scene as it represents the appropriate place for criminalistic analysis.

Indeed, the two sites (as well as other locations possibly involved in the crime) interact spatially with each other, forming the "geographical crime scene".

Therefore, according to Magliocca [9, 10], the geographical crime scene is a "system of locations", consisting of:

particular level:

- the criminal site corresponding to the specific geographical unit (of analysis) of the environment in which the criminal event occurred (closed place, outdoors, in an urban area, near frequented places);

general level:

- the locations of all the sites involved in the crime, if known by the control agencies (e.g., place where the victim was last seen, place of origin of anonymous phone calls and / or purchase of related offence tools the main crime) and/or the locations of the serial offences, intended as the general geographical structure of the places of events in relation to the actions of the “actors”, the meaning and the physical attributes of the places: socio-demographic-economic context, the presence of physical barriers (lakes, sea, mountains) or psychological (not crossing a neighbourhood inhabited by an ethnic group different from one's own in order not to arouse suspicion), to the road system (presence of city roads, motorways, suburban roads), to the time of the crimes, to background characteristics of the environment within which victims move or targets are placed.

Consequently, **referring to geographic profiling, the criminological inspection aims to analyze the person-places transaction, to identify, especially in serial crimes, the spatial behavioural pattern of the offender within the overall context of all the locations associated with the crimes**, the spatial relationship between them, and between the possible home base area of the perpetrator and the location of the crimes, insisting on the relevance of *where* the victim or a target came into contact with the offender and *where* the crimes occur. First of all, the investigation of the places examines how the seriality of the criminal action is distributed in a given environment and how the offender has carved the offensive action within the urban scenario of crimes. The spatial distribution of the offences describes how the offences are placed within the area of selection of the offender relatively to each other, also in relation to the size of the same and the attributes of the target. There are three types of models: cluster morphology (grouping), uniform and random. The cluster model indicates that the crimes are grouped, positioned in the immediate vicinity of the others; the

uniform model describes events that occurred far from the others and can record a slight agglomeration of offences; in the random model the events are neither grouped nor uniform but are still spatially harmonic and not chaotic, predictable and adaptable to the geographic analysis of the crime. Patchy or irregular dispersion of targets can alter the geospatial pattern of criminal sites. The choice of victims/targets with non-random criteria, based on specific requirements, will require greater research by the offender than a selection of victims based on random models, with non-specific characteristics. Basically, the choice of places to strike will be influenced only by the victim/target's space of activity and not also by the offender's space of activity. On the other hand, a criminal looking for a non-specific victim will have a "widespread" shift and will act between sites scattered everywhere.

Therefore, a uniform distribution of crime locations means that the location of the crimes may have been conditioned by the criminal's space of activity and by the activity nodes; the selection of objectives is a function of the mind map of the offender and not of the environment. In the geographic criminological survey, the concept of specificity is related to the set of victim-environment characteristics. The well-known Italian serial killer called "Il Mostro di Firenze" (The Monster of Florence) assaulted secluded couples during moments of intimacy, certainly specific victims. The victimological specificity may not correspond to the specificity of the underlying theme of the general environment of the crimes, which is, instead, determined by the planned intention to commit particular crimes in that precise and very specific place. As with the case of the Florence murders, that singular type of victim was selected in a random area, in a more distributed space, and not exclusively in a distinct areal sector established by the zonal division of the territory; for the Monster of Florence it was enough to leave the house, at night, to move in known areas or around the place of residence to find isolated places frequented by young couples, without having to move for an unknown time or towards a specific territory to look for them. The criminological inspection on the geographic scene of the crime examines the type of crime committed, the modus operandi of the offender. However, it specifically observes the attractiveness of the target, the offender's familiarity with the communication routes and the greater or lesser ease of travel of the road system, the presence of physical and psychological barriers, the demographic structure of the area, the direction, speed, and all those factors of the crime that can influence the choice and selection of the places of a crime by orienting the offender towards one place/objective over another.

In fact, **the geographic analysis of the crime attributable to geographic profiling is an overall set of retrospective spatial relationships regarding where the crime was committed**, of predictive information on how the offender moves, of the geographical and socio-demographic elements that can limit his displacements, and suggestions on how to capture him. Rossmo [14,15, 16] proposes some fundamental elements for a criminal geographic profile, which take into account the different spatial variables of the crime and the dynamism of the environment in which it was committed, and which, in our opinion, allow a valid criminological analysis of the geographical crime scene:

- the location of the crimes. The geographic location of the crimes, the number and type of scene connected to the serial crime constitute the most relevant information for the construction of the criminal geographic profile as the coexistence of several places broadens the spatial perspective of a criminal event. A homicide or rape case may involve the victim's meeting place, the location of the first attacker, the place where the rape/murder took place, where the murder weapon or vehicle used was left, where the body was abandoned, which is generally the starting point for all criminological and investigative evaluations;
- the type of crime. The type of crime and the number of offenders involved influence the geographical characteristics of the series and also the movements and the distance that separates the home base from the crime sites;
- the modus operandi. The mode of action adopted by the offender during the search for victims and the methods of execution of the criminal act will affect the geographical behaviour of the crimes perpetrated and, therefore, the two "styles" will have to be analyzed. If there is the hypothesis that the perpetrator transports the victim's body, if he meets the victim in one place and attacks in another, if he leaves the body in a certain location, these are all variables that need to be considered also by virtue of research on mobility space of criminals in relation to travel from home base;
- the victim's daily activity. The victim's movement pattern can clarify the decision-making processes carried out by the offender to seek his objectives, also due to the fact that the offender's space of activity may overlap that of the victim; at a given moment of space-time, criminal and victim share a common nodal center in their activities;
- the "background" theme of the crime area. The geographical space within which the crimes are distributed mark the criminal opportunities and the entire space-time framework in which the offender has the opportunity to commit a crime. The environment in which the offender acts is not static since the evolution of an urban context varies from one period to another, from day to night, and is often not always "smooth" so as to present itself without obstacles and with the same physical characteristics in all directions; this eventuality must be evaluated in order to better adapt the analysis to the alleged mobility of the offender: for example, the area of action of the criminal is located near the sea, a stream, or in a series of residential thefts committed by the the same offending the presence of a park or a field in place of the houses forced the offender to move;
- the motorway network and other roads. The design of the road network affects the movement of people within a city or neighbourhood, the permeability in a territory as well as the level of familiarity with certain areas. Offenders tend not to prefer winding roads, less safe, congested by traffic, or characterized by limited access and escape routes. We could believe that, for purely practical reasons connected to the speed of travel and consequently to the perception

of a "safe" area, crimes are consumed to a greater extent in the areas located near the entrances to motorways; however, people do not move from one place to another exclusively "in a straight line" but are forced to use the road network, also characterized by main and secondary roads. These factors influence the spatial distribution of crime also because an author who travels with a car and within an adequate road system is much more likely to "switch" the range of his criminal space. For example, in the case of connected crimes consumed at a long distance, it's possible to make inferences on the type of vehicle used, on the routes chosen, on the places crossed and under video surveillance;

- bus, metro and train stops. It's also essential to consider the location of bus stops, subways, and railway stations in the vicinity of the areas affected by the crimes, both to implement classic investigative strategies (patrol, acquisition of information) and because they can be useful for understanding the patterns of movement of criminals due to the fact that it's possible that there are perpetrators who move from one location to another using public transport that would guarantee them greater opportunities, convenient access to the most crowded urban centers, an easy and fast means escape and even long distances;

- urban planning, zoning. From the dominant characteristics of the area between the criminal sites, further clues develop that reinforce the geographical analysis of the crime series, because information would be obtained on why a person may be in a place at a certain time or on the type of place that the offender might use as a geographical basis. What is the subdivision of the area affected by the crimes (residential, rural, commercial, industrial area, popular area with a high crime rate, parking areas)? What is the structure of the area (for example, the presence of shopping centers, public places, shops, parks, green areas, government offices, police)? Are there railway stations, bus stops or subways?;

- physical and psychological barriers. The movements of criminals are completely limited by physical boundaries (rivers, lakes and highways) and also modified partially by permeable barriers defined by Rengert, which can partially alter the criminal activity and which are divided into cultural barriers (for example, occupied areas by residents who have a different economic level or from ethnic groups different from that of the offender) and psychological (committing a crime too close to their home, or near a police station);

- the socio-demographics of the area. The existence of ethnic and racial dissimilarities between the home base area and the places where the offender could commit a crime would constitute an additional condition that would influence the spatial decision-making process, limiting and diverting the offender's movements. Pettit [13] found that 65 percent of the perpetrators of thefts and robberies, residing within the "black ghetto" of Milwaukee, committed their crimes within that ethnic territory, with a percentage of 57.6 for robbers and 74.1 for theft perpetrators; however, black offenders were able to overcome the ghetto barrier effect with relative ease compared to other white criminals. Further empirical research by Bernasco [2] demonstrates a preference, among perpetrators, of victimizing areas similar to their own area of residence in terms of ethnic composition, an aspect that relates to the ethnic structure of the area of residence of the offender; in addition, they attack areas where the majority of the resident population corresponds to the same ethnic origin as the perpetrators themselves, a circumstance referable, however, to the individuality of the offender in relation to his or her race and ethnic origin. In demographically "closed" areas, individuals who move within or between racial or ethnic borders have difficulty in blending with the socio-urban context, are easily exposed to being recognized as outsiders to the community, and are more subjected to the "Eye on the road" of the resident population;

- the "relocation/displacement of crime". Spatial analysis must also consider the possible relocation of crime from a place, from a condition of time, from a goal, from one strategy to another. The main form of relocation is the spatial displacement of the offender from one area to another, which is the consequence of the investigation of the offender by the investigative agencies. When the police begins to increase checks in the priority areas processed by the profile, the offender could subsequently move to another location to avoid being arrested. Similarly, the pressure exerted by the mass media, which pushes people residing in the crime area to take a greater interest in the facts and to be on their guard about what happens in the territory, would influence the decision-making processes of the offender on the risk of operating in that area.

All these elements act on the mobility of the offender in the scenario of criminal events and on the selection of the crime scene, which could not otherwise be observed and "used" if the offender had not previously had knowledge and familiarity. The criminological analysis of the geo-territorial indicators of the geographic crime scene makes it possible to practically evaluate the how and what influenced the spatial pattern of the offender and to be able to strengthen, from a strategic and operational point of view, the predictive capacity of quantitative geographic profiling systems.

VI. CONCLUSIONS

The observation of the geographic scenario of the crime, supported by the criminological inspection, would make it possible to provide better theoretical references from which inferential ideas of an operational nature on the conduct of the offender can be derived, taking into account the assessments of the violent behaviour held by the offender. The geographic analysis of a crime may be subject to less personal interpretation, the violent conduct held by the offender is referable to a particular segment of his life (the one taken at the crime scene), but, overall, from a geographic investigative perspective, is intrinsically correlated and subject to how the offender interacts with the environment in which he operates, where he is, where he lives, where he possibly works.

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