



Harald Dern
Roland Frönd
Ursula Straub
Jens Vick
Rainer Witt

Geographical behaviour of stranger offenders in violent sexual crimes

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A project devoted to optimising assessments
of geographical criminal behaviour within the
context of offender profiling in operational
case analysis

Wiesbaden, August 2005 (translated reprint of the 2004 version)

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1. Introduction

“The perpetrator isn’t from here!” This claim is an understandable defensive response exhibited by local people following a sexual homicide,¹ particularly in cases involving a child victim. The contention is grounded more in belief than in knowledge, however, as very few of the perpetrators who are later identified travelled a great distance to the crime scene. One occasionally encounters this notion in police circles as well, and it often makes the process of identifying the perpetrator even more difficult.

When cases of this kind remain unsolved, the investigating unit in charge frequently requests the appropriate operational case analysis unit to perform a case analysis.² As a rule, such cases analyses include the development of an offender profile containing, to the extent possible, statements about the unidentified perpetrator’s probable age, prior criminal record and place or region of residence. These criteria within the offender profile are of utmost importance to local investigative authorities. On the basis of a combination of these criteria, which can be researched in databases, analysts can, for example, identify a group of potential suspects and/or establish a scale of priorities within a known group of suspects (keyword “profiling”).

The Operational Case Analysis Unit of the BKA published a study on the prior criminal records of rapists and sexual killers in August 2002.³ A study on the biographical histories of these offenders focused on the criterion of “age” is to be initiated in 2004.⁴

¹ As a rule, a sexual homicide is a homicide in the course of which the offender attacks sexually relevant areas of the victim’s body. In 1999, the term “sexual homicide” was replaced in the Police Crime Statistics (PCS) by the more appropriate term “*homicide accompanied by sexual offences*”. In the interest of simplicity, these offences are referred to in the following discussion as “*sexual homicides*”.

² Please note, that the German term *Operative Fallanalyse* literally means *operational case analysis*, but in a broader sense comprises approaches and methods of *behavioural analysis*.

³ Straub & Witt, *Prior Police Records of Rapists*, Wiesbaden 2002 (see e.g. www.bka.de).

⁴ The concept for this study has already been developed. The project is scheduled to begin during the second half of 2004.

As will be demonstrated below, relatively good progress has been made in research and in the articulation of criminological theory on the subject of criminal offenders in general and perpetrators of violent sexual crimes in particular in the Anglo-American regions. Questions regarding crime distribution patterns, potential criminogenic factors specific to given geographical regions or specific geographical patterns which could possibly influence criminal behaviour are of fundamental concern to criminologists.

A discussion of the criminological principles underlying the present study cannot be separated from its goals. These goals relate to the *criminalistic*⁵ and case-analysis objectives pursued in the investigation of unsolved sex-related crimes. The umbrella term of *operational case analysis* (OCA) also encompasses methods used in the analysis of such cases in which the evaluation of geographical parameters is often important (as is true of “standard” case analysis as well) and frequently crucial (as in the case of geographical case analysis).⁶

Previous studies on the geographical behaviour of sex offenders have focused primarily on serial offenders. Given the goal of providing effective consulting support in actual practice, this must be regarded as a deficiency. For sex offenders are only rarely sexually deviant criminals who exhibit a strong potential for repeat offences and thus for serial criminal behaviour. They are much more likely to belong to the category of general criminals who, faced with a favourable opportunity (and possibly in the presence of disinhibiting factors), may also commit an isolated sexual offence.

⁵ *Criminalistic* refers to the German noun *Kriminalistik* which is an umbrella term for criminal reasoning and the tactics of leading a police investigation

⁶ On the subject of operational case analysis see Dern 2000, Hoffmann & Musolff 2000, Witt & Dern 2002, Baurmann 2003 and Baurmann & Dern 2004. The quality standards for case analysis in the German police (see e.g. www.bka.de) outline the minimum quality standards for case analysis tools used in “case analysis” and “geographical case analysis”.

This study focuses on the very specialised group of sex-related crimes in cases in which no prior offender-victim relationship existed and is concerned in particular with identifying the relationships between locations involved in the commission of crimes and offenders' base points. In this sense, it represents a specialised sub-field of geographical criminology.

This project on the "Geographical behaviour of stranger offenders in violent sexual crimes" is devoted in particular to establishing a basis that will enable analysts to make reliable statements regarding relationships between an offender's home base area and the area in which criminal behaviour occurs. The study proceeds from following initial hypotheses:

- ⇒ In general, both rapists and sexual murderers exhibit a specific regional orientation.
- ⇒ A distinction must be made between *crimes of opportunity* (spontaneous decisions leading to commission of a crime by "opportunists") and *crimes based on prior decisions* (known as "premeditated" crimes). While "opportunists" tend to act within a very limited local context (which is related to daily routines), perpetrators of premeditated crimes are more likely to have a larger range of activity (which nevertheless remains regionally limited).
- ⇒ In cases in which a rape victim is moved to a different location, the directions of such movements reflect geographical patterns which enable analysts to draw conclusions regarding a given offender's home region.
- ⇒ There is a close correlation between murder of a rape victim in order to conceal the identity of the perpetrator and proximity to the offender's place of residence.
- ⇒ Movement of the victim's body from the crime scene with the aid of a vehicle also correlates with regional proximity of the offender's place of residence to the scene of the crime.

2. Geography and criminology – a brief overview

2.1 Introduction

The first studies in criminal geography were undertaken in the 19th century. Early work in criminal geography is often associated with the names Lambert-Adolphe Quetelet and André-Michel Guerry de Champneuf. Their most important thesis was that patterns of crime distribution are neither geographically homogeneous nor uniform in terms of types of offences, and that these patterns of heterogeneity can remain stable over time. In the 20th century, the *Chicago School of Sociology* was also highly influential in the field of environmental criminology. The classic studies by *Shaw & McKay* (the first of which appeared in 1929) on crime patterns in Chicago and the methodological approach based on combination and comparison of geographical data with crime rates and the physical environment adopted by *Burgess* (beginning in 1916) became a significant starting point of the corresponding research.

The consequences of this approach can still be observed today in the field of criminological-geographical crime analysis (KRA, Ziercke 1985, Koch 1992). During the 1970s, a differentiating reorientation took place within the context of *environmental criminology* (criminology of spatial behaviour) (Brantingham & Brantingham 1981, p. 18).

2.2 Myths

In the field of criminology – particularly with respect to events of such great emotional impact as sex-related crimes – a number of notions regarding specific types of crimes have emerged which have relatively little to do with reality. This is particularly true of “popular” criminology and its influence on the media, politics, institutions of socialisation and even the organs of formal social control.⁷ Moreover, some studies which appear to confirm a given notion prove upon closer examination not to do so at all (Gottfredson & Hirschi 1990, p. XV). The

abundant literature that has contributed to the perpetuation of an image of the sexual offender as a “compulsive automaton” driven by deviant sexual fantasies is a case in point.

By way of example, we cite an FBI study on sexual homicide⁸ based primarily on a highly selective sample of sadistic sexual killers (most of them serial murderers) which has – intentionally or inadvertently – gained a firm foothold in broad areas within the field of research on sexual felonies through the corresponding standard work entitled *Sexual Homicide*.

Thus a number of myths regarding serious sexual crime have persisted, some of which can be traced to studies of a very selective nature. Some of these myths have also been kept alive by a succession of corresponding fictional products (books, films) and media reporting through processes of social construction (cf. Jenkins 1994).⁹ Among other things, they include the notions that sexual offenders (necessarily) pursue a (compulsion-driven) criminal career and that they are often highly intelligent specialists¹⁰ who plan their crimes systematically or are driven by ultimately uncontrollable fantasies.

With respect to geography, it is generally assumed that serial offenders are often motivated by concern for their own safety to travel greater distances to commit the first crimes in their series but later begin to feel safer and attack closer to their own homes, whereas others tend to distribute their crimes from their home base while maintaining a safety zone¹¹. In this context, the ad hoc character of many sexual crimes is overlooked in geographical studies.

In the final analysis, myths regarding the geographical behaviour of sexual offenders cannot be considered without reference to the myths associated with the sexual offender per se. If we regard the sexual offender as a perpetrator

⁷ Cf. with respect to sexual offences Baurmann 1983 or Gottfredson & Hirschi 1990, pp. 36

⁸ Ressler, Burgess & Douglas 1988 – published in part in the *Journal of Interpersonal Violence* in 1986.

⁹ The subject of myths relating to serious sexual crimes and profiling is discussed in detail by Baumann (2003).

¹⁰ In marked contrast to Meloy (2000), who contends that the banality of the biographies of sexual killers is exceeded only by the ruthlessness of their crimes – a circumstance that was encountered again and again in the course of this study.

who proceeds in an essentially deliberate, planned manner, we will also regard the selection of locations for the commission of crimes as having been given corresponding consideration and assume that such offenders are also intent upon “covering their tracks” in a geographical sense as well. Equally problematic in this context is the fact that, given the presumably high rate of unreported sexual crimes,¹² one can never be sure of having a complete picture of a given series. Similarly, statements regarding geographical parameters relating to the first and/or last crime in a series, (of the kind made by Warren et al 1998, for example) are fundamentally unreliable.

Thus it should be evident that a knowledge of the myths associated with a particular field of crime is a necessary prerequisite for a study whose purpose is to explore the phenomenology of that field with as few preconceived notions as possible.

2.3 General background of geographical criminology

Herold (1977) defines geographical criminology as the “science of the relationships between the specific structure of a geographical space and geographical and temporal aspects of the crime that is committed within it” (*ibid.*, p. 290). He distinguishes it from the “study of crime distribution” with reference to the factor of offender mobility, among others. Schwind (1981) goes somewhat further in his definition, in that he regards geographical criminology as “that branch of criminological-criminalistic research which seeks to explain criminal behaviour in terms of specific spatial-temporal patterns of distribution and interrelationships among demographic, economic, social, psychological and cultural factors of influence, with the goal of combating (and above all preventing) crime (*ibid.*, p. 249).

¹¹ The buffer zone, as defined by Brantingham & Brantingham (1981).

¹² Although this applies primarily to sexual offences committed within the local social context, the problem is indeed virulent (cf. Baurmann & Störzer 1981, Weis 1982, Baurmann 1983, Amelang 1986, Baurmann et al 1991 or Wetzel & Pfeiffer 1995), and there are signs worthy of serious consideration indicating that serious sexual offences also go unreported (cf. Weinrott & Saylor 1991 or Stevens 1998, for example).

Research in geographical criminology is concerned with the effects of structurally incisive factors such as urbanisation processes or the use of specific zones (e.g. for services, education or recreation) on the incidence of crime. Within the framework of this approach, the attribution of criminal phenomena specific to a given zone to the inhabitants of that zone is avoided.¹³ This attribution error can also play a role in the field of special geographical criminological research, when, for example, one infers from the fact that some serial murderers operate across regional boundaries that all serial killers do so as well.

The results of special geographical criminological research can also have direct consequences for criminalistic analysis.¹⁴ These can be particularly fruitful when discriminating parameters within a given class of crime relate in a more than coincidental way to certain geographical factors. It is obvious that, for every unsolved crime, the question of the perpetrator's identity is inherently connected to the question of his place of residence. If one considers in this context the overpowering evidence indicating that criminals operate primarily within regional boundaries¹⁵ and that they tend to commit their crimes in relative proximity to their places of residence or to other base points,¹⁶ it becomes clear this aspect is also of fundamental interest to police investigations.

The question of the distances travelled by offenders in committing their crimes is of key importance in this context. This question has been addressed in what is known as *journey-to-crime research*.¹⁷ Actually, quite apart from the fact that the distances ascertained in the course of such research can be of significant criminalistic and criminological value, the term "journey to crime" is somewhat

¹³ The so-called "ecological fallacy" (cf. Brantingham & Brantingham 1981, pp. 16 and 1984, pp. 228, for example) or "ökologischer Fehlschluss" (Schwind 2003, pp. 300).

¹⁴ Paul Brantingham refers to this explicitly in his foreword to Rossmo's "Geographical Profiling" (*Criminology Comes of Age*).

¹⁵ "Empirical work in criminology has repeatedly demonstrated that most offenders commit a large number of their offences 'close to home.' (Brantingham & Brantingham 1981, p. 30). Bottom & Wiles (1997) express the idea even more clearly: 'It is a commonplace of criminological textbooks that much crime is committed close to offenders' home.' (*Ibid.*, p. 323).

¹⁶ Cf. Rossmo 2000, p. 99 and pp. 105, for example. In Germany, in the city of Bochum research project on unreported crime, designed as a longitudinal study, has shown that nearly 80% of offenders in Bochum reside within the city limits of Bochum. (Schwind et al 2001, pp. 85).

¹⁷ Rossmo provides a comprehensive overview of published studies on this subject (Rossmo 2000, pp. 105).

problematic, particularly when applied to sexual crimes. For the very concept of a “journey” to the scene at which a crime is committed inevitably implies that offenders deliberately “embark” from one point (i.e. from their place of residence, as a rule) and travel to another - the scene of the crime – for the specific purpose of committing the crime in question.

This is not true of the vast majority of sexual crimes, which are generally committed in situations in which the offender seizes an opportunity that arises spontaneously. Although it is conceivable that travel distances (e.g. on the way home from a recreation site to the scene of a crime) have actually been measured, such results would be of only limited interest to criminalistic analysis. It is much easier to localise the place of residence of an unidentified offender than to identify recreation sites he may have visited.

A number of questions relate to distances travelled in the commission of crimes. However, only relatively few of these address aspects that are of particular interest with a view to criminalistic analysis – by virtue of their actual applicability to police investigation – and only few can actually be approached using reliable, empirical methods. These include the offender’s age, the size of the community in which the crime was committed, the degree of planning involved, the aspect of serial behaviour, prior criminal records and variations on the type of offence. The term “type of offence” refers to variations in the method used in committing a crime of a particular class (e.g. rape) which represent clearly distinguishable subtypes (e.g. break-in rape or rape committed in public places involving the immediate use of brutal force). The findings of several studies indicate that there is greater differentiation among the various types of offence than among types of offenders¹⁸ (i.e. personality characteristics which can be inferred from the manner in which a crime is committed).¹⁹

¹⁸ See especially LeBeau 1987.

¹⁹ One problem worthy of note in this context relates to the application of typologies that have not been sufficiently empirically tested. If one classifies offenders – as do Warren et al (1995 and 1998) – according to corresponding typologies of personality and then makes inferences about distances on that basis, the problems inherent in these typologies are also transferred to the statements about distances.

Thus estimates of the size of a community the offender lives in in corresponding studies of the geographical behaviour of (sexual) offenders are problematic and often even impossible, as they relate to a narrowly limited geographical area (ordinarily that of a large city).

It is difficult to establish a correlation between the “degree of planning” involved in sexual offences and distances, because “degree of planning” is a vague concept. Therefore, it is necessary to make strict operational distinctions.

Most of the relevant studies have focused on serial offenders. Given the marked quantitative preponderance of single offences, however, it will be important to compare these with serial crimes.

Factors which can be quite readily assessed with regard to relevant distances are “prior criminal records” and the “age of the offender”. It is astounding to note in this context the persistence of the presumption that there is a positive correlation between offender age and distances (“older offenders travel farther”). Although Rossmo (2000, p. 99), for example, cites the studies by Warren et al (1995) and Garbor & Gottheil (1984) in support of this thesis, no significant correlations between distance and offender age were identified in the course of this study.

Another concept of relevance to criminalistic studies that is closely linked with journey-to-crime research relates to safety or *buffer zones* (Rossmo 2000, p. 102, pp. 119), that is, areas in which perpetrators of certain types of crime do not operate due to the close proximity of their domiciles.

2.4 The decreasing frequency of offences in proportion to the increasing distance from the offender's domicile ("distance decay")

This effect reflects the fact that the tendency of offenders to commit crimes near their own domiciles rather than at distances far removed from their homes is also evident in corresponding geographical distribution patterns. Brantingham & Brantingham (1984) refer in this regard to a "well-established distance-decay pattern in human spatial behavior" (*ibid.*, p. 344), which they attribute to the fact that a decrease in interaction and activity goes hand in hand with increasing distance from an individual's place of residence (Brantingham & Brantingham. 1981, p. 30).

Evidence of this effect has been shown in a large number of studies. In many areas of crime, a disproportionately high number of offences were committed in relative proximity to the offenders' places of residence, thus confirming the regional orientation of the offenders.²⁰

The premise of distance decay is closely related to the principle of least effort.²¹ According to the latter, given an equal distribution of potential possibilities (in which such parameters as the attractiveness of the objective, the use of means and resources and the need for safety play a role), the offender will select the option that involves the least spatial movement.²² In order to apply this principle to the analysis of the geographical behaviour patterns of offenders, it is necessary to consider both the distribution of opportunities for crime²³ and the geographical area encompassed by the offender's range of activity,²⁴ which is therefore also represented as an active, consciously perceived field in his "mental map".²⁵

²⁰ For a comprehensive overview see Rossmo 2000, pp. 105.

²¹ Zipf 1950, quoted from Rossmo 2000, p. 87.

²² See also Brantingham & Brantingham 1984, pp. 237 u. 344 or (from the perspective of environmental psychology) Friedrichs (1990).

²³ The differences in opportunities for crime between very rural and urban areas are particularly marked for sexual offences.

²⁴ Known as the personal activity space, which is part of the individual's total personal awareness space; cf. Brantingham & Brantingham 1984, pp. 349 and Rossmo 2000, pp. 90

²⁵ The subject of mental or cognitive maps is often brought up in connection with questions of crime geography relating to specific cases. A cognitive map is a "mental map, an image of a place, of an environment, an organized representation of reality developed in the brain of an

Another specific aspect is the manner in which distance is perceived. This involves both physical and structural factors within the spatial environment as well as the offender's personal perception of distance (cf. Brantingham & Brantingham 1984, pp. 346).

The principle of distance decay is of particular relevance to serial crimes, and it is more than a statistical effect, since it can be assumed that an accumulation of offences within a series is more likely to suggest proximity to the offender's place of residence than offences that may be assessed as "isolated incidents" on the fringes of the offender's geographical range of activity. It goes without saying that this is also significant for comparative case analyses (series analysis) and subsequent geographical case analysis.²⁶

individual..." as a result of information's being received, stored, recalled, decoded and interpreted (...) and, in some cases, combined with sentiment, feeling, associated with the place or the environment." (Clark 1998, p. 79). According to Lynch (1960), significant features of such representations are paths, edges, districts, nodes and landmarks. The usefulness of this concept for criminalistic analysis is often overestimated. Schneider (1990) rightly criticizes research on cognitive maps for neglecting their influence on behaviour (*ibid.*, p. 271).

²⁶ On the subject of comparative and geographical cases analysis see Baurmann & Dern (2004).

2.5 The concept of environmental criminology as defined by Brantingham & Brantingham

2.5.1 History and description of the concept

The concept of environmental criminology²⁷ is closely associated with the name Brantingham – a man-and-wife team of professors at the Simon Frazer University in Canada. The publication of an anthology entitled *Environmental Criminology* in 1981 (a revised edition was published in 1991), which contains a number of important articles, established the concept of environmental criminology on a firm basis. The book entitled *Crime Prevention Through Environmental Design* published by C. Ray Jefferey in 1971 is generally regarded as the point of departure for this discussion. Scholars from a number of different disciplines have made noteworthy contributions on the subject.

“Environmental criminology studies criminal events as products of the convergence of potential offenders with potential targets at specific points in space-time under specific sets of limiting and facilitating conditions. Studies in this field have focused on spatial patterns in offender and target movement against the backdrop of broader social routines.” (Brantingham 2000, p. V). The approach was initially developed on the basis of studies relating to property crime (Brantingham & Brantingham 1981, p. 240) and was expanded to encompass other areas of crime regarded as particularly relevant to fear of crime within the population (e.g. sexual offences) primarily during the 1990s.²⁸

Key focuses of environmental criminology include geographical methods used to describe and explain the origin of crime, the principle of proximity (offenders usually operate near their base points and, faced with a choice between equally attractive targets, are likely to choose the target nearest their base points), distance decay, rational choice theory and the routine activity principle.

²⁷ *Environmental criminology* is concerned primarily with the interaction between offender and victim within the context of spatial, temporal and psychological parameters which determine the “environment” in which criminal activity takes place (cf. Bottoms & Wiles 2002).

²⁸ *Ibid.*, p. 241

In view of their importance to an understanding of the environmental aspects of criminal behaviour, it is appropriate to take a closer look at the last two concepts cited above.

2.5.2 Rational choice theory

In addition to the concepts of routine activities and opportunities (Cornish & Clarke 1986, Clarke & Felson 1993), rational choice theories are among the most noteworthy approaches to the explanation of criminal phenomena which can be harmoniously joined with environmental criminology to form a promising criminological approach.

With reference to modern economic theories,²⁹ rational choice theories emphasise the cost-benefit ratio as perceived by the individual, who weighs the prospective gain from crime against the probability of being discovered.³⁰

Because the majority of sexual offenders are general criminals who do not concentrate on specific types of offences (cf. Straub & Witt 2003), this is also relevant to the application of the theory of rational choice. For these offenders have gathered experience in several different fields of crime and learnt to recognise opportunities for crime (Carroll & Weaver 1986). That experience also benefits them in the commission of sexual offences.³¹

Cornish und Clarke (1986) point out quite rightly perpetrators of both property crimes and a number of different types of violent crimes – including homicide

²⁹ Gottfredson & Hirschi (1990) express doubt, however, that such theoretical assumptions are appropriate models of offenders specialising initially on a specific type of crime and then on a criminal lifestyle as a main source of income (*ibid.*, pp. 72). They regard such an exclusively criminal lifestyle as a fictional construct, contending that crimes tend to be isolated events which differ from "normal" behaviour primarily by virtue of the illegitimacy of means in consequence of insufficient self-control (*ibid.*, pp. 85).

³⁰ "A person commits an offense if the expected utility to him exceeds the utility he could get by using his time and other resources at other activities." (Becker 1968, p. 176, quoted in Jeffery & Zahm 1993).

³¹ Although Johnson and Payne (1986) question the use of the model of rational, decision-based crimes in cases that can be classified as pathological acts (*ibid.*, p. 172), it is reasonable to consider the possibility that sexual offences which involve the seizing of an opportunity for sexual gratification by force in a specific situation, exhibit fundamental similarities to comparable robbery or property offences committed in comparable situations and should therefore simply be classified within the criminal range of the offenders in question (cf. Gottfredson & Hirschi 1990).

and rape – exhibit a substantial degree of rationality and make decisions on the basis of a weighing of factors (*ibid.*, p. 14).

The perspective involved in theories of rational choice may be regarded as interactionistic³² (Felson 1993, Jeffery & Zahm 1993), as it focuses on the interplay between opportunities for crime, offenders (and victims) and formal social control mechanisms that culminates in the commission of a crime. Naturally, the question of the distribution of opportunities for crime (Rossmo 2000) plays a particularly important role in this context. And the question is also relevant to serial offenders in so far as their range of activity³³ corresponds to the everyday routines of potential victims. However, in view of the frequently opportunistic character of sexual offences, it seems appropriate to speak of what is known as temporal rationality (as defined by Trasler 1993).

Thus within the context of attempts to analyse the geographical behaviour of sexual offenders from the perspective of rational choice theory, the degree of planning (planned vs. spontaneous actions) assumes additional significance as an independent variable and may be an indicator for the extent to which offenders operate outside the range of their everyday routines. This partial (temporary) departure from the sphere of everyday activities would then – according to a related hypothesis – correlate with greater distances between base points and crime scenes.

2.5.3 The routine activity approach and crime

The central premise of this approach introduced by Cohen & Felson (1979) is that the vast majority of crimes are committed in the area in which the individuals involved perform their daily routines. From the perspective of the routine activity approach, the minimum prerequisite for the commission of a crime is the presence of an offender who is prepared to commit the crime, a suitable target and the vulnerability of the target, whereby these three factors must coincide in

³² “Interactionistic” in this context means that the commission of a violent sexual offence is determined less by internal processes in the offender (e.g. accumulated frustration) than by social interactions (cf. Baumann 1983).

³³ Even serial offenders ordinarily commit their crimes from within this activity space, which is linked to everyday routines.

space and time (Felson 1986, p. 121).³⁴ In light of this (often empirically confirmed) approach, a crime is therefore essentially an event which does not categorically deviate from “normal” behaviour.

2.5.4 Rational choice and routine activity – contradictory approaches?

“Rational choice” and “routine activities” would appear at first glance to represent contradictory approaches to the explanation of crime. However, the contradiction can be resolved if one considers that some temporary rational consideration involving an assessment of potential costs and benefits generally precedes the commission of a crime and that offenders are likely to leave the area in which they perform their everyday activities in acting upon the resulting decision only in very rare cases. The situation looks different in cases involving certain specific targets of crime (e.g. rapes committed in nurses’ dormitories or post-office robberies), yet the underlying relationship per se appears to apply in most cases. Here again, the question of the effort the offender is willing and able to expend to achieve his criminal goal is a crucial consideration. Thus it is reasonable to expect that sexual offenders will tend to be regionally oriented.

2.6 The approach of David Canter

David Canter, Professor of Psychology in Liverpool, England and the founder of Investigative Psychology (Canter 1994, Alison & Canter 1999, Canter 2004), published two articles on the geographical behaviour of serial rapists in 1993 (in collaboration with P. Larkin: *The Environmental Range of Serial Rapists*) and 1994 (in collaboration with A. Gregory: *Identifying the Residential Location of Rapists*) which formed the basis for his approach.³⁵ In light of the significance of these two original studies, the most important findings are discussed below.

³⁴ Thus the crime opportunity structure as defined by Rossmo (2000, p. 112) can be described as follows: crime = (offender + target – protection) (place + time).

³⁵ Canter had previously published other articles on aspects of environmental psychology. Later studies related primarily to the geographical behaviour of serial killers (cf. e.g. Godwin & Canter 1997 and Lundigan & Canter 2001) and the development of decision support sys-

The point of departure for the author's investigations was the hypothesis that the sites of crimes were "in some way" connected with the residential locations of the offenders. With regard to rape, they cited the study by Amir (1971) in support of the hypothesis of a fixed starting point as a base of operations for rapists. Additional findings of significance to Canter's model related to the geographical behaviour of burglars whose crime scenes lay along routes that led to locations of importance to them (Rengert & Wasilchick 1985), Brantingham and Brantingham's postulate of a buffer zone, the distinction among different types of robbers established by Capone & Nicholas (1975) and the finding – significantly confirmed by the latter and by LeBeau (1987) – that information about modes of operation (e.g. "break-in rapists") was more likely to lead to conclusions about such geographical parameters as distances than about types of offenders (e.g. so-called anger-retaliatory rapist).

The authors' initial premise is that it is only reasonable to assume the existence of a fixed spatial base for serial offenders that is encircled by a space that is non-coincidentally related to this base. They referred to this space as the "*criminal range*".³⁶ Canter and his colleagues developed two models to describe the relationship between the area in the centre of which the offender's residence is located ("home range") and the geographical area in which the offender commits his crimes ("criminal range").

2.6.1 The commuter hypothesis

The offender travels from his home base to an area in which he commits the crimes. This area is either entirely outside the offender's home range or overlaps with it only to a very slight degree. Although the criminal range relates in some way to the offender's residential location, neither its size or position nor the distance that separates it from the offender's home base can be determined.

tems for localising the offender's place of residence (Canter et al 2000 and a critical study by Snook et al 2002)

³⁶ *Ibid.*, p. 65.

This type of commuter behaviour can be the result of a gain in criminal experience or a specific crime-opportunity structure (e.g. the presence drug-related street prostitution or nurses' dormitories).

2.6.2 The marauder hypothesis

This hypothesis conforms most closely with the Brantinghams' model and with the findings of Amir and LeBeau. The offender travels in each case from his home base to the scenes of his crimes. The home base is the focal point, while the crime scenes lie along lines radiating from it. The concept presupposes that the home range and the criminal range overlap completely or at least to a considerable extent. Thus an increase in the distance between individual crime scenes is indicative of an (average) increase in the distance from the home base.

2.6.3 The two circle hypotheses

With respect to the sample examined in the 1993 study, the distance between the two crimes scenes that are farthest from one another is taken as the diameter of a circle which contains, with a certain degree of probability,³⁷ all of the crime scenes. The second hypothesis is that the offender's residence lies within this circle.

2.6.4 Results of studies by Canter and others

The first circle hypothesis was found to apply to 91% of the serial offenders (41 out of 45 offenders).³⁸ Of the 30 crimes committed by four offenders to whom the hypothesis did not apply, 23 were nevertheless committed within the range described by the first circle hypothesis.

The second circle hypothesis applied to 87% of offenders (39 out of 45 offenders), that is, 39 offenders resided within the circle whose diameter was described by the distance between the two crimes scenes which were farthest

³⁷ With the exception of "unusual geographical patterns" (Canter & Larkin 1993, p. 66).

³⁸ *Ibid.*, p. 67

from one another. The circle model did not apply in six cases, meaning that the offenders in question commuted to the area in which they committed their crimes.

Thus the commuter hypothesis was found to apply only in very special cases.³⁹ The marauder concept proved to be a suitable approach to determination of the types of offenders examined in the study.

Expressed in somewhat simplified terms, the following assumption can be derived from the circle hypothesis: Crime scenes that are separated by great distances are probably also farther away from the offender's home base than crime scenes that lie closer together.⁴⁰

Another assumption derived from this circle model is that "the largest distance between offences will be greater than the largest distance between any offence and the offender's home."⁴¹ Furthermore, clear indications of the existence of a buffer zone encircling the offender's home base were found.

The authors contend that the search area described by the circle is likely to be very large and therefore difficult to cover in actual investigations but suggest that there are other factors which can be used to narrow the range in question. According to the authors, the most important of these are emotionality and impulsiveness (which may tend to reduce distances) as well as a rural environment (which may favour greater distances).⁴²

³⁹ Canter & Larkin also include offenders who pick up their victims, drive them to a different area and then rape them in this category. In these cases it would be worthwhile to determine whether the site of initial contact (cf. LeBeau 1987) is or is not located within the offender's home range.

⁴⁰ This is presumably relevant only in series involving larger numbers of offences.

⁴¹ *Ibid.*, – otherwise the offender's place of residence would not be located within the circle.

⁴² *Ibid.*, p. 69.

2.7 Studies by Anne Davies and Andrew Dale

This study published in 1995 entitled “Locating the stranger rapist”⁴³ was carried out by the Research Group of the Home Office in London. As a part of the Offender Profiling Research Programme, the study was devoted to gathering significant empirical data in support of the offender profiling method in the UK.

The sample comprised rape cases documented in police records and included both one-off and repeat offenders. A total of 79 rapists and 299 cases were analysed (offenders’ home addresses at the relevant points in time were known). The majority of cases involved crimes committed in the Greater London Metropolitan area.

Fig. 1:
Distribution of distances from the home bases of stranger rapists to initial contact sites. Percentages for individual distance ranges and cumulative distances (in brackets).
Source: Davies and Dale 1995, p. 8.

Distance Home base – Point of contact (shortest measurable dis- tance)	Rapes by stranger offenders	
	Number (n) And individual percent- age	Percent- age (cu- mulative)
0 to 0.5 miles	52 (17.4 %)	17.4
0.51 to 1 mile	35 (11.7 %)	29.1
1.1 to 2 miles	67 (22.4 %)	51.5
2.1 to 3 miles	25 (8.4 %)	59.9
3.1 to 4 miles	26 (8.7 %)	68.6
4.1 to 5 miles	21 (7.0 %)	75.6
5.1 to 10 miles	39 (12.9 %)	88.6
more than 10 miles	34 (11.4 %)	100.0
Total:	299	100.0

⁴³ The “stranger rapist” was defined as follows: “An offender who has attacked a female with whom he had no prior relationship before she was approached and raped, or one who met his victim very shortly before the assault occurred, and who could not be easily traced through mutual friends or contacts.” (*ibid.*, p. 2).

No evidence was found in support of the concept of buffer zones (as defined by Brantingham & Brantingham). The findings of the study supported the often expressed assumption that older offenders travel farther than younger ones or that younger offenders operate closer to home.

According to these findings, 79% of offenders 26 years of age or younger travelled 1.8 miles (approx. 2.9 km) or less. This was true of only 32% of the offenders over the age of 26. Of the latter group, 68% travelled farther than 1.8 miles, as compared to 21% of those 26 years old or younger (*ibid.*, p. 9).

Nearly all of the rapes committed by prolific serial rapists with five or more sequential rapes took place near the base points of the offenders. In contrast to the present study, these base points were broadly defined. With respect to serial rapists, the study confirmed the existence of a phenomenon previously identified by LeBeau (1987 und 1992): Serial offenders do not progressively increase the distance between their homes basis and the scenes of their crimes but instead operate within a limited geographical range and are more likely to reduce distances from the first crime scene in the series over time (Davies & Dale 1995, pp. 14).

The findings of the study did not support the model developed by Canter based on the classification of serial offenders as marauders or commuters. Instead, it was assumed that “marauders and commuters probably represent extreme cases within a spectrum of behaviour patterns that is determined by topography and the availability of target objects” (*ibid.*, p. 16).

2.8 The approach developed by Robert Keppel

Robert Keppel, former Director of Homicide Investigation for the State of Washington and Associate Professor of Criminal Justice at Sam Houston State University, has also gained attention as the co-author of scientific studies (Han

fland, Keppel & Weis 1992) and relevant articles in learned journals (e.g. Keppel & Walter 1999).

His extensive and complex study on case management in child-abduction cases⁴⁴ involving the murder of kidnapped children also contains a number of important statements relating to geography and time. He found that 44% of the children in the cases examined were killed within one hour of being abducted, 94% within three hours, 91% within 24 hours and 99% within one week. Nearly eight out of every ten children were already dead by the time they were reported missing.

Of crucial importance was a knowledge of the point of initial contact (contact site).

- In 80% of cases, the contact site was within 400 metres of the place at which the child had last been seen.
- The distance between the contact site and the site of the murder was less than 60 metres in 31% of all cases studied. Children were killed within 1.5 miles of the contact site in 57% of cases and more than 12 miles from the contact site in only 18% of cases (*ibid.*, p. 84).
- The distance between the site of the murder and place at which the body was deposited was less than 60 metres in 72% of the cases.
- In two-thirds of the cases studied, the offender's presence in the area of the contact site was justified (29% lived in the area, 19% were involved in normal informal social activities and 18% were employed or engaged in formally organised social activities nearby).
- Only 53% of the offenders were strangers to the area, and 57% of the offences were pure crimes of opportunity.

⁴⁴ Most of the cases covered by this study were found to have been sexually motivated in some way. "Children" were defined as "less than 18 years of age" for the purposes of this study. The victims in 79% of these cases were younger than 16 (Hanfland, Keppel & Weis 1992, p. 27).

- In 40% of all cases, there were witnesses to the situation at the contact site who were not aware of what occurred.⁴⁵
- Of all offenders, 18% lived less than 60 metres from the contact site, while 35% lived within 400 metres of the contact site.⁴⁶

The findings produced in another study⁴⁷ on the significance of time and distance to the probability of solving homicide cases indicated strong correlations between temporal and spatial parameters that had an impact on the prospect of solving homicide cases. The crucial importance of the first 24 hours following the crime⁴⁸ with respect to the likelihood of solving a case was confirmed.

One opinion ventured by the authors, which conforms with the findings of the present research project (see below), expresses criticism of the overemphasis of the site at which the body is left. The importance of this aspect to prospects for solving a case within the framework of traditional concepts of investigation was overstated. Actually, the authors contend, it is extremely important to establish the specific temporal relationship between the individual locations involved in the commission of the crime (*ibid.*, p. 399). The farther apart these locations are, the lower the probability of solving a case.

Thus this study shows that precise knowledge of geographical (and temporal) data plays an extraordinarily important role in the successful management of homicide investigations.

⁴⁵ This fact, the higher percentage of offenders with justifiable reason to be at the scene of the crime and the logical requirement of asking what normal and unremarkable occurrences took place within the vicinity of the crime scene (*ibid.*, p. 85) can be regarded as evidence of the applicability of the routine activity approach to this area of crime as well.

⁴⁶ Unfortunately, the authors provided no further statistics on the correlation between the offender's place of residence and the contact site. However, the figures that are available may safely be regarded as a strong indication of a strong regional orientation among offenders in this context as well.

⁴⁷ Robert D. Keppel & Joseph D. Weis (1994): "Time and Distance as Solvability Factors in Murder Cases": The study was based upon a sample of 967 murder cases from the years 1981 to 1988 in the U.S. state of Washington. Among other matters, the authors discuss the possibility that falling clearance rates may relate to the quality of investigative work, complaining at the same time that previous studies neglected the handling of murder cases by law enforcement authorities in favour of clinical studies or studies based on aggregate data (*ibid.*, p. 386).

⁴⁸ Cf. Egger 1990, p. 177.

2.9 The study by James L. LeBeau

The study entitled “The Journey to Rape: Geographical Distance and the Rapist’s Method of Approaching the Victim” is a typical example of journey-to-crime research.

The study is based on a sample of 320 rapes committed in the greater San Diego, California metropolitan area between 1971 and 1975. Of the total, 156 cases involved one-off offences, while 164 were serial offences (committed by 39 offenders).

Based on an understanding of the existing state of research, it was initially assumed that most rapists are regionally oriented in the commission of their crimes. With regard to the mode of operation known as “break-in rape”, it was assumed that offenders travel greater distances as it is normally the case in comparable property crimes.

Finally, the author posed the hypothesis that the category of “mode of operation” provided for more pronounced distinctions with respect to relevant distances and thus favoured more reliable conclusions than the category of “offender personality”. The study produced the following findings on the subject of distances:

Fig. 2:

Distribution of offences by distances from base points to contact sites by stranger rapists using various methods of approach.

Figures in kilometres as mean (geometric) values; numbers of offences in brackets.

Source: LeBeau 1987, p. 134

Distance from base point to contact site (shortest measurable distance)	Methods of Approach to the Single and Serial Offenders					
	Illegal entry	Kidnap-Attack	Accept Ride	Meet outdoors	Public building	Party/Bar
All offenders ≈ 4 km (319)	≈ 1.8 km (126)	≈ 5.4 km (69)	≈ 13 km (44)	≈ 9.1 km (24)	≈ 7.35 km (24)	≈ 3.1 km (32)
Single offenders ≈ 5.6 km (156)	≈ 2.6 km (31)	≈ 8.5 km (32)	≈ 11.3 km (32)	≈ 8.5 km (13)	≈ 6.8 km (16)	≈ 3.1 km (32)
Serial offenders ≈ 2.85 km (163)	≈ 1.58 km (95)	≈ 3.7 km (37)	≈ 18.9 km (12)	≈ 11.7 km (11)	≈ 8.95 km (8)	--

Overall, the hypothesis of limited regional orientation on the part of rapists was confirmed. On average, serial offenders travelled shorter distances between their domiciles and the contact sites.

It is clearly evident that the type of approach known as illegal entry (which corresponds de facto to break-in rape) was associated with the shortest distances, whereby serial offenders travelled even shorter distances, on average.⁴⁹ This recognisable specialisation among serial offenders⁵⁰ suggests that this particular mode of operation enables offenders to reduce their "travel time" due to the fact that they are better able to maintain control in such situations. Thus the hypothesis that break-in rapists – like burglars – travel farther to commit their crimes was refuted within the context of the area covered by the U.S. study.

The hypothesis that the category of "type of offence" provides for stronger differentiation with respect to distances travelled than that of offender type was therefore confirmed (*ibid.*, p. 135).

⁴⁹ The problem of the high percentage of burglars among serial rapists is also addressed by Davies & Dale (1995).

⁵⁰ This recognisable "specialisation" with a view to approaching the victim – which may also include the "kidnap-attack" approach – is evident in sudden, surprising, rapid actions used to overpower victims (*ibid.*, pp. 133 f.). Yet there is no indication of such specialisation among one-off offenders, as most of their offences are crimes of opportunity.

All in all, this study, which is one of the few in which a significant number of one-time offenders were considered, produced three important findings:

1. Rapists are regionally oriented.
2. The type of crime provides for a more differentiated approach to the analysis of geographical behaviour of the offender than the type of offender.
3. Break-in rapists exhibit a stronger regional orientation than other rapists.

2.10 The experiment conducted by Brent Snook

Brent Snook, a PhD candidate at the University of Liverpool (Department of Psychology), conducted a remarkable experiment on the advantages offered by geographical computer systems in the process of identifying offenders' home bases. His findings were initially presented at a conference in San Diego in 2000⁵¹ under the title "Utility or Futility? A provisional examination of the utility of a geographical decision support system".

For the purposes of the experiment, a control group and an experimental group, each comprising 21 students of both genders, none of which had prior knowledge of geographical profiling or related disciplines, were formed.

Each group was first assigned the task of entering – without outside assistance – the presumed residential locations of offenders (serial killers) on a map on which the crime sites had already been inscribed. The experiment was repeated with both groups.

⁵¹ This study, together with its implications, has been published by Brent Snook in 2002 (together with David Canter and Craig Bennel) in the learned-journal *Behavioral Science and the Law* under the title "*Predicting the Home Location of Serial Offenders: A Preliminary Comparison of the Accuracy of Human Judges with a Geographic Profiling System.*"

However, the experimental group was given two rules⁵² to be applied to the geographical behaviour of criminal offenders prior to the second session. This group achieved significantly better results. The results attained the same level of precision achieved by the *Dragnet* decision-support system.⁵³

It is interesting to note that *Dragnet* encountered the same problems experienced by the human experts in certain situations (e.g. where an offender had shifted his range of action into a different area as a commuter). The authors saw this as evidence of the fact that distance decay and the circle hypothesis are the basic premises underlying the *Dragnet* algorithm (*ibid.*, p. 117). And thus they expressly question the necessity of purchasing expensive computer systems for geographical profiling⁵⁴ (*ibid.*, p. 110), while emphasising the need to counsel police officers tasked with locating offenders' home bases in concrete cases on the basis of a systematic objective assessment of the relevant heuristic systems (*ibid.*, p. 117).

⁵² The first was the principle of distance decay; the second was Canter's circle rule, according to which the offender's place of residence is usually located within a circle whose diameter is equal to the distance between the two crime scenes located farthest apart.

⁵³ Cf. Canter et al (2000).

⁵⁴ Of which the most noteworthy is the "Rigel" system based upon the studies of Kim Rossmo (Rossmo 2000). While the authors mention the possibility that such systems are capable of showing gradations of probability, there is undoubtedly a need for further research on the effectiveness of such systems (as Snook et al also emphasize explicitly: Snook et all 2000, p. 118).

2.11 Preliminary criminological conclusions

Criminology offers empirical observations and analyses and – building upon them – basic theories that address the question of the geographical behaviour of sexual offenders. These theories focus on criminal offences as acts in which an offender seizes an opportunity after weighing the potential costs and benefits. The criminal act is preceded by a decision on the part of the offender, and the decision is the result of the offender's assessment.

At the same time, the majority of crimes are committed within ranges of activity that are closely connected to the offenders' everyday routines. The apparent contradiction between largely automatic everyday routines and elements of rational choice is also a meaningful aspect of the analysis of geographical behaviour of criminals. For like other people, their centre of gravity will clearly be located in their own homes.

If this regional orientation can be accepted as the rule, it is reasonable to ask how strong this regional orientation is and whether there are specific characteristics associated with changes in regional orientation. It is important above all to examine those characteristics that are *believed* – without empirical evidence – to be of significance to regional orientation.

3. Scope and analysis of data

This study examines only crimes⁵⁵ in which there was no prior relationship between perpetrators and victims, i.e. crimes committed by so-called stranger offenders. In this context, “stranger” means that a given offender and a given victim had never met before the crime or that they encountered one another for the first time on the day the offence was committed. The primary reason for limiting the study to “stranger offenders” is the fact that offenders who are “known” to their victims come from their victims’ immediate social and geographical environment and are therefore nearly always identified and arrested without significant delay.

Crimes committed against prostitutes were not considered in the study, as the site of physical contact is not chosen by the offenders in these cases but is instead determined by the location at which the victim engages in prostitution.

Also excluded was a small group of homeless offenders whose geographical behaviour could not be evaluated for the purposes of this study.

The crimes examined were rapes⁵⁶ and homicides committed in connection with a sexual offence (committed or attempted). A second group comprised sexually motivated homicides in which the offender transported the victim’s body to another location in a vehicle. “Sexual homicides” committed in the former communist GDR were also included for the purpose of comparing geographical behaviour in two different social systems.

⁵⁵ The study is a case-based analysis in which multiple offences committed by the same offender may be included in the sample, provided they occurred during the selected time frame.

⁵⁶ Rape as defined in the German Criminal Code (Art. 177 II No. 1 StGB).

The national sample included crimes committed by convicted or clearly identified offenders,⁵⁷ for which data was obtained from the following sources:

- ViCLAS⁵⁸ database
- BKA “Homicides” case file
- BKA bulletins for the period 1971 to 2001
- individual follow-up enquiries at investigating police offices
- Birthler-Behörde⁵⁹ (for crimes committed between 1971 and 1989 in the territory of the former GDR)

Information from court rulings in all cases was considered in the study. Case files and criminal records were also analysed as needed. In many cases, follow-up enquiries at investigating police offices were necessary. The process of selecting offences was rendered difficult in many cases by the absence of references to offender-victim relationships in the general police information systems.

The following table shows the actual numbers of cases selected for the respective time periods. They are regarded as representative for the entire Federal Republic of Germany (and the former GDR).⁶⁰

Fig. 3:

Numbers of cases in each of the different offence groups

Offence group	Time frame	Number of offences
Rape	1999 – 2001	348
Sexual homicide	1991 – 2001	99
Sexual homicide, including movement of the body	1971 – 2001	25
Sexual homicide in the GDR	1978 – 1988	46

⁵⁷ Thus the sample also includes offences committed by offenders who committed suicide while in pre-trial confinement, for example.

⁵⁸ Violent Crime Linkage Analysis System.

⁵⁹ The Federal agency responsible for the records of the State Security Service (Staatssicherheitsdienst) of the former German Democratic Republic.

⁶⁰ The figures for sexual homicides presumably represent a nearly complete survey. This applies both to offences committed between 1991 to 2001 and those committed in the former GDR.

The distances between the offenders' "base points" and individual crime scenes were measured ("as the crow flies") with the aid of topographic maps obtained from the mapping offices of the German states. All of the sites selected as base points were locations which could be easily researched by police investigators.

The following locations were selected as base points for the purposes of this study:

- the offender's place of residence
- the offender's prior places of residence
- the offender's place of work
- the place of residence of the offender's primary family (parents, siblings, children)
- other places at which the offender is known to have spent substantial amounts of time (e.g. extended hotel stays during assignments to external construction sites, regular visits to probation officers)

For the purposes of this study, "crime scenes" were defined as all places at which actions related to the offence took place. These include specifically:

- the contact site (point of first physical encounter between perpetrator and victim)
- the site of the attack (the spectrum ranges from verbal threats to the use of a weapon to threaten to actual physical force)
- the site of the rape or sexual offence
- the site of the killing
- the place at which the body was deposited

The compiled data were evaluated for significance⁶¹ with the aid of the SPSS (Statistical Packages for Social Sciences) program.

⁶¹ All values were tested for significance. A significance level of $\alpha \leq 0.05$ (5 %) was selected. Values of $\alpha \leq 0.01$ (1 %) were classified as highly significant. The percentages indicate the

4. Findings

The presentation of findings focuses primarily on the groups of rapes and sexual homicides committed in the Federal Republic of Germany. The findings relating to “sexual homicides including movement of the body” and sexual homicides committed in the former GDR are presented separately.

The presentation begins with general remarks regarding the regional classification of the offences studies. Further discussion of the findings is based on the methodology of the formation and comparison of dichotomous⁶² subgroups.

The findings are presented from the perspective of their relevance to police investigation and their respective applicability.

4.1 General remarks

4.1.1 Regional or interregional criminal activity

The first aspect of interest under the heading of general remarks is the distribution of “regional” and “interregional” offences. For the purposes of this study, “regional” offences were defined as those in which initial contact (contact site) took place within 20 kilometres (shortest measurable distance) of the offender’s base point.⁶³

As a radius, this distance describes a home range in which, as experience has shown, the majority of daily routines are carried out, including, for example, travel to and from work, shopping and leisure activities. Most people have a sense of familiarity with a region within a range of 20 kilometres.

degree of probability (determined through statistical tests) that the findings are based on chance and not on certain causal relationships (so-called error probability)..

⁶² *Dichotomous* → divided into paired terms such as “large vs. small”, “unknown vs. known” or “planned vs. unplanned”.

⁶³ In the vast majority of cases the offender’s base point was his place of residence at the time the crime was committed. This was true in approximately **94% of all rape cases (328 offences)** and in roughly **89 % of all sexual homicide cases (88 offences)**. Other base points were involved in cases in which the offender’s actual place of residence was located farther than 20 kilometres from and the base point within 20 kilometres of the contact site.

In the examination of the aspect of “regional orientation”, emphasis was placed on the “contact site”, since the criminal action originates at this location. This is true even in cases in which the offender may not have developed a definite plan for the offence (keyword: short-term “pub acquaintances”). In the case of these offences (which are most often “spontaneous” crimes) in particular, the “contact site” lies within the range of everyday routines which is usually close to the offender’s base point. Thus this location is most likely to provide clues regarding the offender’s actual place of residence.⁶⁴

Of the rapes covered by this study, 85% (296 out of 348 offences) met the requirement expressed in the definition of “regional offences” cited above. Within the group of sexual homicides, 86.9% of the cases (86 out 99 offences) were classified as regional crimes.

On the basis of these figures alone, it becomes unmistakably clear that both rapists and sexual murderers are indeed regionally oriented in the commission of their crimes. Although all cases involved offenders and victims who were previously unknown to each other, nearly nine out of every ten offenders encountered their victims within a radius of 20 kilometres from their base point.

This finding is supported by the fact that in approximately 66% of the rape cases (228 offences) and in roughly 43% of cases involving sexual homicide (53 offences), initial contact actually took place in the community/city in which the offender’s base point was located.

⁶⁴ Furthermore, Keppel & Weis established the crucial importance of the contact site in the analysis of unsolved homicides. If this site is unknown, the probability of clearance is reduced dramatically. (Keppel & Weis 1994, p. 394)

Thus it comes as no surprise that offenders only very rarely chose crime sites outside the state in which they resided. Such interstate movements were identified in only 5.8% of the rape cases (20 offences) and 5.1% of the cases involving sexual homicide (five offences).

Thus in 95% of all cases, the crime was committed in the state in which the offender's base point was located. This applied to both the large federal states and the smaller city (federal) states. In no single case was it determined that an offender had crossed the German national border before committing the offence in question.

4.1.2 A differentiated view of distance categories

Following this rough classification into groups of regional and interregional offences, it was necessary to break down this classification scheme into smaller distance increments. This was done primarily in the interest of identifying possible geographical patterns within the area near the offender's base point.

As shown in Fig. 4, distances from the contact site to the offender's base point do not differ significantly between the groups of rapists and sexual murderers. This applies as well to distance constellations between the site of attach and the base point and between the site of the rape and the base point.

Fig. 4:

Distances from base points to contact sites in cases of rape and sexual homicide, cumulative percentages

Distance base point to contact site (shortest measurable dis- tance)	Rapes		Sexual homicides	
	Number (n)	%	Number (n)	%
1 km or less	98	28.2	31	31.3
5 km or less	117	61.8	30	61.6
10 km or less	42	73.9	15	76.8
15 km or less	26	81.3	8	84.8
20 km or less	13	85.1	2	86.9
more than 20 km	52	100.0	13	100.0
Total:	348	100.0	99	100.0

In roughly 30% of both rape and sexual homicide cases, the offender's base point and the contact site were separated by no more than one kilometre (shortest measurable distance). This shows that a substantial number of offenders were willing to accept the risk involved in attacking a victim in the immediate vicinity of their (the offenders') homes.

In more than 60% of cases in both offence groups, the base point was located within a radius of only five kilometres from the contact site. In approximately three-fourths of all cases, contact occurred within ten kilometres of the base point. Thus a substantial majority of offences occurred within 10 kilometres even within the regional range.

4.2 Evaluation of different crime scenes

4.2.1 One or more crime scenes?

In approximately 35% of all rape cases (122 offences) and roughly 49% of all sexual homicides, criminal activity was not restricted to a single location. This can be explained in many instances by the fact that many offenders found the contact sites unsuitable for their purposes and thus moved their victims to another location in order to carry out their plans without disturbance. For the purposes of this study, a shift of crime scene was defined as a movement of at least 100 metres from one location to another.⁶⁵ This distance was chosen in order to exclude cases in which the victim was merely forced by the offender to move to a point at which the crime could not be easily observed.

Thus in these cases, the entire sequence of criminal action took place at two or more crime scenes, each of which was examined separately.

4.2.2 Shift of crime scene in rape cases, “voluntary” or “under the influence of force”?

In approximately 57% of the cases (69 offences) in which multiple crime scenes were involved, the eventual victims followed the offender voluntarily, having been persuaded by deception in some instances. In other such cases, the offender and the victim left a location (a pub, for example) together after having become “acquainted” shortly before.

In all other cases (53 offences), the “contact site” was also the “site of the attack” on the victim, who was then moved by the offender to the site of the rape as the events proceeded.

⁶⁵ In most cases in which crime scenes were shifted, two separate crime scenes were involved. This applies to both rapes and sexual homicides. Three crime scenes were identified in a few exceptional cases. The events of the crime took place at four different locations in only two cases of sexual homicide.

In approximately 94% of cases of this sub-group (65 offences) the base point of the offender was located within the region near the contact site in instances in which the victim went “voluntarily” to the site of the attack or the site of the rape. In two-thirds of all cases, the offender’s base point was actually located within the “immediate regional range” of five kilometres.

The most likely explanation for these short distances is that more than 90% of the offences resulted from a spontaneous decision to commit the crime reached by the offender while performing everyday routine activities.

Fig. 5:

Distance between contact sites and base points in cases of rape involving multiple crime scenes, when the victim voluntary moves to a different crime scene or is forced by the offender to move to such a location; cumulative percentages, significant values highlighted

Distance contact site – base point (shortest measurable dis- tance)	Voluntary		Under the influence of force	
	Number (n)	%	Number (n)	%
1 km or less	24	34.8	13	24.5
5 km or less	22	66.7	17	56.6
10 km or less	11	82.6	5	66.0
15 km or less	3	87.0	3	71.7
20 km or less	5	94.2	0	71.7
more than 20 km	4	100.0	15	100.0
Total:	69	100.0	53	100.0

The shorter distances involved in cases in which victims were moved voluntarily differ to a highly significant degree from the distances covered by the control group (victims moved forcibly to a different location). Although the offender’s base point was located in the regional range in more than 70 % of the cases, the distance from the base point was more than 20 kilometres (shortest measurable distance) in roughly 30% of cases.

One likely explanation for this finding is the higher proportion of planned offences (approximately 40%) within this offence group. “Planning” is not understood to mean that the offender anticipated all successive phases of the commission of the offence (such as the selection of the rape site, for example) in advance of the crime. “Crime planning” simply refers to a decision to commit a rape reached by the offender prior to initial contact with the victim.⁶⁶

The following statement can be made in summary: If a shift of location takes place during the course of a rape and the victim initially follows the offender voluntarily, it can be assumed that the offender has a strong regional orientation to the contact site.

4.2.3 Shift of crime scene in sexual homicide cases, “voluntary” or “under the influence of force”?

The figures derived from an analysis of the entire sample of sexual homicides focused on the characteristics of “voluntary” and “under the influence of force”, suggest – as do those for the group of rape cases - a significant difference. This difference is not statistically confirmed, however, due to the low number of cases evaluated.

In nearly nine out of ten cases in which the victim followed the offender voluntarily, the offender’s base point was located less than ten kilometres from the contact site. Analogous to the rape cases, 82% of these crimes were spontaneous offences.

⁶⁶ See also Rossmo 2000, p. 115.

That applies to nearly two-thirds of all cases in which the victim was moved to another crime scene by force. At 31%, the proportion of spontaneous offences is significantly lower than that of the control group (victims who followed offenders voluntarily).

Fig. 6:

Distances between contact sites and base points in cases of sexual homicide involving multiple crime scenes, when the victim voluntary moves to a different crime scene or is forced by the offender to move to such a location; cumulative percentages, significant values highlighted

Distance contact site – base point (shortest measurable dis- tance)	Voluntary		Under the influence of force	
	Number (n)	%	Number (n)	%
1 km or less	12	54.5	3	11.5
5 km or less	4	72.7	10	50.0
10 km or less	3	86.4	4	65.4
15 km or less	0	86.4	2	73.1
20 km or less	0	86.4	1	76.9
more than 20 km	3	100.0	6	100.0
Total:	22	100.0	26	100.0

It is worthwhile at this point to take a closer look at the distance category of “1 kilometre or less”. In more than half of the cases in which the victim moved voluntarily to another crime scene, the offender’s base point was no farther than one kilometre from the contact site (shortest measurable distance).

In roughly only one out of ten of the cases represented by the control group (“under the influence of force”), the offender’s base point was no farther than one kilometre from the contact site. This may be an indication of the offenders’ concern with maintaining a buffer zone. Buffer zones are surrounding areas immediately adjacent to offenders’ base points in which offenders refrain from committing crimes because they perceive the risk of recognition as being too

high due to the fact that they are likely to be familiar to people in the area in question.⁶⁷

This difference is highly significant⁶⁸ and is therefore of particular importance to case analysis and police investigative work. The findings with regard to this issue clearly show that it is important not only to identify the contact site but to establish the circumstances of the contact situation, to include the act of leaving the contact site. Whether the individuals involved left the contact site by mutual agreement or the victim was moved forcibly to another location is a crucial question in this context.

As is true of the group of rape offences, it can be assumed in the case of a “voluntarily” shift of crime scene during the sequence of events involved in the crime that the offender has very strong regional relationship to the contact site (even though that relationship is highly significant only with a radius of one kilometre). In some cases, this strong regional relationship is presumably the reason why the victim was subsequently killed, as the majority of these homicides were committed for the purpose of concealing the offender’s identity.

4.2.4 In which direction is the crime scene shifted?

4.2.4.1 Rapes

When an offender seeks a new crime scene in the course of committing his offence, his spatial behaviour following initial contact must be examined separately. Of particular interest in this context is the question of whether the offender shifts the crime scene toward his base point (thus “going home”, in a sense) or seeks to put greater distance between his base point and the site of the rape.

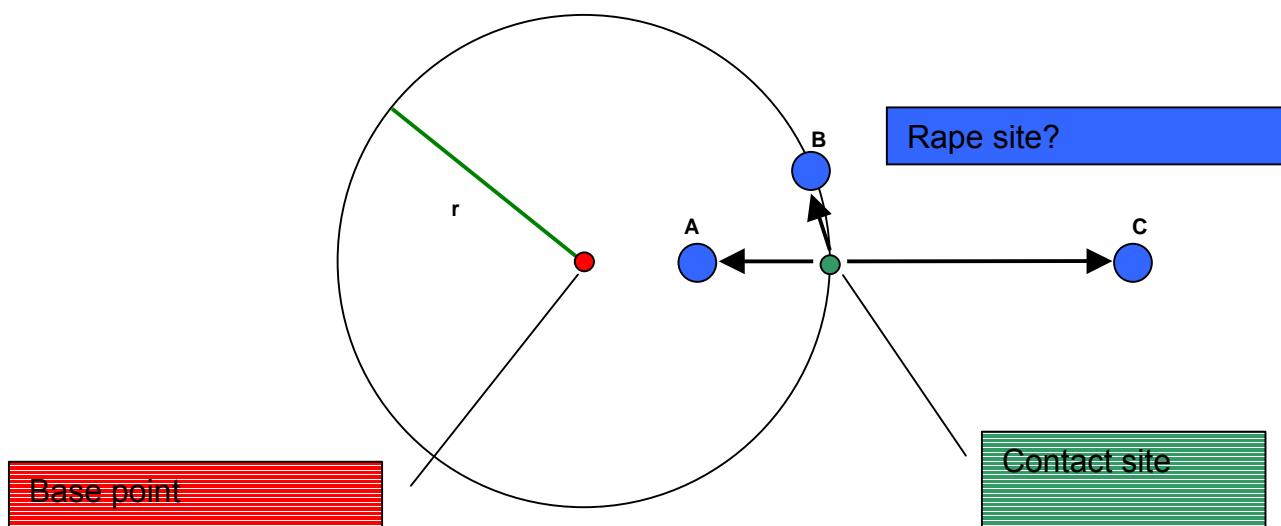
⁶⁷ Such areas of reduced probability of criminal activity have been described by Canter & Larkin (1993) with respect to serial rapists and by Canter & Hodges (1997) for serial killers in Great Britain and the United States.

This question was addressed only with reference to those offences in which initial contact was made within the regional area. It is ordinarily of no importance with respect to interregional offences, since it is virtually impossible to make inferences of relevance to criminal investigation on the basis of such great distances.

The authors have developed a model for the purpose of illustrating this issue, which is shown in Fig. 7 below.

Fig. 7:

Relationship between “distance from the base point to the site of direct contact” and “distance from the base point to the rape site”



In 51% of the cases studied (51 of 101 offences), the site of the rape was closer to the offender's base point than the contact site (designated as rape site "A" in Fig. 7). In 9% of the cases (9 offences), the distance remained the same (designated as location "B" in Fig. 7). In the remaining 40% of cases (41 offences), the distance between the site of the rape and the offender's base point was

⁶⁸ Consideration was given to the fact that only 3 cases were classified within the “under the influence of force” group. However, the values are highly significant nonetheless, and interpretation is justified.

greater than the distance from the contact site to the fixed base point (designated as location "C" in Fig. 7).

However, even this shift "away from the base point" did not involve movements over greater distances. All other crime sites were located within a range of 20 kilometres from the offender's base point.

It is not possible to draw conclusions with respect to favoured directions of shift from the data on the rape cases.

In summary, it is evident that shifts of crime scene associated with rape involve movements over relatively short distances. Offenders are concerned primarily with finding a location at which to rape their victims as quickly as possible. Their objective is not to put as much distance as possible between their base point and the rape site in order to avoid revealing the location of the base point.

4.2.4.2 Sexual homicides

Analysis of cases in the group of sexual homicides revealed no uniform pattern in shifts of location during commission of crimes. As was established for rapes, the scene of the sexual offence was closer to the offender's base point than the contact site (designated as location "A" in Fig. 7) in 35% of the cases studied (12 out of 34 offences).

In the remaining cases (22 offences), the distance (designated as location "C" in Fig. 7) was greater. Yet the majority of offenders in these cases did not travel great distances. In only six instances did the offenders leave the regional area and travel more than 20 kilometres from their base points to commit their crimes.

The primary motive for a shift in the scene of crime is the desire to find a safe location. Investigations devoted to developing a detailed picture of offenders'

movements produced no findings indicating a favoured direction. No uniform pattern of movement during the commission of sexual homicides was identified.

Thus any attempt to estimate a direction of movement relative to the offender's base point on the basis of the positions of the contact site and rape site alone would be futile. In any event, a rigorous examination of each individual case with reference to additional factors, possibly in the form of a case analysis, would have to be undertaken before a geographical assessment can be made.

4.3 Urban and rural areas in comparison

Little attention has been given to relationships between the size of the offender's community of residence and distances travelled in previous studies on sexual crimes. This may be attributable to the fact that such studies frequently relate to a limited geographical area (e.g. large cities in the U.S. or the Greater London Metropolitan area) or that the area under study was not covered in a sufficiently representative manner by the data (as was the case in the studies by Warren et al 1995 and 1998). Another important consideration in this context is the fact that many studies are offender-oriented (e.g. Groth 1979) and that a significant percentage of sexual offences are committed in the offender's immediate social environment (Baurmann 1983).

4.3.1 Rural versus urban offenders in rape cases

The object of investigation in this section relates to the question of whether offenders who reside in rural areas exhibit different geographical behaviour than offenders whose base point is located in an urban setting. For this purpose we obtained population figures for the communities and cities in which each offender's base point was located and assigned them to one of six categories⁶⁹.

Communities with populations of 20,000 or less were designated as "rural areas" (Categories 1 and 2). Cities with populations of more than 20,000 ordinarily have an urban character. They include small regional agglomerations and urban constellations as well as cities with populations in the millions, such as Berlin, Hamburg and Munich.

⁶⁹ Category 1: 5,000 inhabitants or less
Category 2: 5,001 to 20,000 inhabitants
Category 3: 20,001 to 100,000 inhabitants
Category 4: 100,001 to 200,000 inhabitants
Category 5: 200,001 to 500,000 inhabitants
Category 6: more than 500,000 inhabitants

Fig. 8 clearly shows that in 75% of all rapes (75 out of 100 offences) in which the offender's base point was located in a rural area, the contact site was also situated in the regional area. This was true of 89% of offences (221 out of 248 cases) committed in urban areas. The difference is significant.⁷⁰

Fig. 8:

Distances from base points to contact sites in rapes committed in rural areas (communities with 20,000 inhabitants or less) and urban areas (communities with more than 20,000 inhabitants; cumulative percentages; significant values highlighted

Distance base point – contact site (shortest measurable dis- tance)	pop. 20,000 or less		pop. exceeding 20,000	
	Number (n)	%	Number (n)	%
1 km or less	17	17.0	81	32.7
5 km or less	28	45.0	89	68.5
10 km or less	10	55.0	32	81.5
15 km or less	14	69.0	12	86.3
20 km or less	6	75.0	7	89.1
more than 20 km	25	100.0	27	100.0
Total:	100	100.0	248	100.0

On the basis of these results it is reasonable to conclude that offenders whose base points are located in rural areas tend to travel greater distances to commit rape.

However, a detailed examination of the “rural” region shows that Category 2 (5,001 to 20,000 inhabitants) is solely responsible for this significant difference. Category 2 comprises primarily small cities such as Maulbronn, Eggenfelden and Tangermünde.

⁷⁰ Warren et al (1998), who distinguished among “rural, suburban and urban” serial rapists

In contrast, the values obtained for Category 1 (5,000 inhabitants or less) do not differ at all from those of Categories 3 to 6, which represent urban areas. What this means is that an offender who lives in a small village will exhibit the same geographical behaviour in terms of distances travelled in the commission of a crime as an offender whose base point is located in a city with a population of several million.

An explanation for the fact that offenders with base points in Category 2 areas exhibit different geographical behaviour than those of all other categories cannot be derived on the basis of the questions posed in this study. This would require more rigorous research on general population mobility and other demographic factors specific to this regional category, which would go far beyond the scope of this study.

4.3.2 Rural versus urban offenders in case of sexual homicide

In more than 76% of the cases of sexual homicide (42 out of 55 offences) in which the offenders' base points were located in urban regions, the contact site was less than five kilometres (shortest measurable distance) from the base point. This figure differs significantly from that for sexual homicides committed by "rural" offenders.

However, this does not permit one to conclude that the two groups differ significantly on the whole, even though this may be suggested by the statistics in Fig. 9.

(*ibid.*, p. 50) found no significant correlations.

Fig. 9:

Distances from base points to contact sites in sexual homicides committed in urban areas (communities with 20,000 inhabitants or less) and urban areas (communities with more than 20,000 inhabitants); cumulative percentages; significant values highlighted

Distance base point – contact site (shortest measurable dis- tance)	pop. 20,000 or less		pop. exceeding 20,000	
	Number (n)	%		Number (n)
1 km or less	10	22.7	21	38.2
5 km or less	9	43.2	21	76.4
10 km or less	11	68.2	4	83.6
15 km or less	3	75.0	4	90.9
20 km or less	1	77.3	1	92.7
more than 20 km	10	100.0	4	100.0
Total:	44	100.0	55	100.0

The stronger regional orientation in urban areas is presumably attributable in large measure to more favourable crime opportunity structures. Population density is naturally greater in urban areas, which means the number of stranger victims available in the immediate vicinity of the base point is larger.

Furthermore, infra-structural facilities (e.g. workplaces, shops, pubs and restaurants, recreation areas) are concentrated within a small area. This is particularly relevant to the explanation for the incidence of spontaneous offences, which are ordinarily committed in situations that are related temporally and spatially to the offender's daily routines.

Offenders who have already decided to commit a sexual offence and then proceed to the commission phase find sufficient anonymity in urban areas located in relatively close proximity to their base points. They are familiar with the geographical space, and they evidently see no necessity to shift the contact site to another nearby city or a more distant region. As indicated in studies relating to other types of crime,⁷¹ it is reasonable to conclude that offenders' who commit sexual offences near their base points exhibit a certain degree of effort avoidance.

4.4 Planned and spontaneous offences

With respect to both rapes and sexual homicides, it is appropriate to ask about the point in time at which the offender takes the decision to commit a sexual offence. In this study, distinction is made between spontaneous crimes and those based upon prior decisions to commit a crime which enable the offender to proceed systematically in pursuit of his criminal objective, generally referred to as "premeditated crimes". As mentioned above, "crime planning" does not mean that the offender anticipates all of the phases in the entire sequence of events (including, for example, the selection of the rape site) in advance of the crime. These cases are distinguished from those in which the offender acts without having made a prior decision to commit the crime and thus decides "spontaneously" to do so.

We now proceed to the question of the differences between "spontaneous" and "planned" crimes.

⁷¹ Brantingham & Brantingham (1984) point out, for example, that robbers face with equally attractive alternative targets for robbery will ordinarily select the object that is closest to their base point.

4.4.1 Planned and spontaneous rapes

73.6 % of the rapes examined in this study (256 out of 348 offences) were assigned to the category of “spontaneous” offences. Only one-fourth of these crimes were classified as “premeditated” offences.

These two groups differ significantly as a whole. Perpetrators of “planned” offences travelled greater distances between base points and contact sites than offenders who committed “spontaneous” rapes.⁷²

This is not surprising in view of the fact that the perpetrators of spontaneous crimes proceeded primarily from everyday routines, whereas most of the offenders who “planned” their crimes deliberately chose a location at which to establish initial contact with their eventual victims.

One might be tempted to conclude that offenders who “plan” their crimes generally travel very great distances to commit their offences in order to minimise the risk of identification. This is not the case, however. Even among those rapists who “planned” their crimes, nearly eight out of ten selected a contact site located less than 20 kilometres from their base point.

⁷² This significant difference between the two subgroups is also evident in the distances from base points to sites of attack.

Fig. 10:

Distances from base points to contact sites in planned and unplanned rapes; cumulative percentages; significant values highlighted (highly significant values in dark red)

Distance base point – contact site (shortest measurable dis- tance)	Planned		Unplanned	
	Number (n)	%	Number (n)	%
1 km or less	85	33.2	13	14.1
5 km or less	83	65.6	34	51.1
10 km or less	32	78.1	10	62.0
15 km or less	13	83.2	13	76.1
20 km or less	11	87.5	2	78.3
more than 20 km	32	100.0	20	100.0
Total:	256	100.0	92	100.0

As a close examination of the individual distance categories in Fig. 10 clearly shows, offenders who “planned” their crimes were evidently intent upon committing their crimes outside the immediate vicinity of their base points. Thus the number of “spontaneous” offences initiated within one kilometre of the offender’s base point is (highly) significantly lower than that of “planned” offences.

These findings support the conclusion that the majority of rapists who plan in advance establish a buffer zone around their base point.

4.4.2 Planned and unplanned sexual homicides

Approximately 58% of the sexual homicides (57 out of 99 offences) were classified as “spontaneous”. In the remaining 42 cases, the offenders decided in advance to commit a sexual crime. In approximately 45% of these cases (19 offences), the decision also foresaw the killing of the victim following the sexual offence.

In contrast to rapes, no significant differences were found between the geographical behaviour of offenders who “planned” their crimes and those who acted “spontaneously” in cases of sexual homicide.

In nearly 90% of all “spontaneous” offences, the offender’s base point was located in the regional area. This was also true in more than 80% of cases involving “planned” offences.

Fig. 11:
Distances from base points to contact sites in planned and unplanned sexual homicides; cumulative percentages

Distance base point – contact site (shortest measurable dis- tance)	Planned		Unplanned	
	Number (n)	%		Number (n)
1 km or less	21	36.8	10	23.8
5 km or less	17	66.7	13	54.8
10 km or less	9	82.5	6	69.0
15 km or less	4	89.5	3	76.2
20 km or less	0	89.5	2	81.0
more than 20 km	6	100.0	8	100.0
Total:	57	100.0	42	100.0

The presence of a “buffer zone” of the kind established by perpetrators of planned rapes is not evident in cases of planned sexual homicide.

A singular pattern that would explain the absence of a buffer zone could not be established on the basis of the categories selected for this study. This would require a separate study in which both situational and personality-related factors should be taken into account.

In conclusion, it is apparent that, applied as a sole criterion to the group of sexual homicides, “crime planning” is not a distinguishing factor with a view to **the geographical behaviour of offenders**. This statement applies regardless of whether “crime planning” was restricted to commission of the sexual offence or also included the decision to kill the victim.

4.5 “Stranger” relationships versus “brief casual encounters”

This section focuses attention on the character of the situations in which contact is established between victims and offenders. It is possible to identify differences in the geographical behaviour of offenders between offences in which victims were physically attacked immediately (by “stranger” rapists) and those which involved prior interaction that appeared harmless from the victim’s perspective?

The standard case of a situation in which victim and offender are strangers to one another is one in which the victim and the offender have never met before the crime is committed. In several of the cases examined in this study, the offender acquired certain detailed knowledge about the victim through clandestine observation. These cases undoubtedly qualify as “stranger relationships” for the purposes of this study as well.

However, cases in which initial contact was established between the offender immediately preceding the sexual offence, in the form of a conversation in a pub, for example, are classified within the category of “brief casual encounters”.

4.5.1 Offender-victim relationships in rape cases

Within the group of rape offences, a “stranger” relationship between victim and offender was identified in 83.3% (290 offences) of the cases examined. “Brief casual encounters” were found to have taken place in the remaining 16.7% (58 offences) of cases.

In examining Fig. 12, it becomes evident that the majority of offences involving both “stranger” offender-victim relationships and “brief casual encounters” were regional crimes. This applies in more than eight out of ten offences in the “stranger” category and in more than nine out of ten cases in the category of “brief casual encounters”.

Fig. 12:

Distances from base points to contact sites in rapes in which victim and offender were complete strangers and those involving a brief casual encounter; cumulative percentages, significant values highlighted

Distance base point – contact site (shortest measurable dis- tance)	“Strangers”		“Brief casual en- counter”	
	Number (n)	%	Number (n)	%
1 km or less	78	26.9	20	34.5
5 km or less	104	62.8	13	56.9
10 km or less	29	72.8	13	79.3
15 km or less	21	80.0	5	87.9
20 km or less	10	83.4	3	93.1
more than 20 km	48	100.0	4	100.0
Total:	290	100.0	58	100.0

Although the values shown in the table appear at first glance to lie quite close together, the differences between the two groups are actually statistically highly significant.⁷³ In offences involving “brief casual encounters”, distances between the contact site and the offender’s base point were typically shorter than those identified for the “strangers” group.

This is primarily attributable to the fact that nearly all of the offences involving “brief casual encounters” were “spontaneous” offences (more than 93%) and that the offenders therefore acted from within the context of their everyday routines (specifically parties or visits to pubs in these cases). As discussed above with reference to the analysis of “spontaneous” versus “planned” rapes, the distances from the base points of offenders in the first category were significantly shorter than those of the second group (see Fig. 10).

⁷³ The highly significant differences between the group of offences committed by “strangers” and those involving “brief casual encounters” are also evident in the distances from base points to “sites of attack” and to “rape sites”. These highly significant characteristics are attributable to the markedly higher mean values for the group of “stranger” offenders and a broader distribution of distances travelled by offenders in that group.

This difference is of no relevance to police investigative practice, however. Whether eight out of ten (as in the group of “stranger” offenders) or nine out of ten offenders (in cases involving “brief casual encounters”) are identified as belonging the regional area is of no consequence in police investigative work.

4.5.2 Offender-victim relationships in sexual homicides

A “stranger” relationship between offender and victim can also be identified in 83% of sexual homicide cases (82 offences). A brief, casual encounter between the offender and the victim was involved in only 17% of the cases studied (17 offences).

More than 80% of the offences in both groups were classified as regional.

Figure 13:
Distances from base points to contact sites in cases of sexual homicide in which victim and offender were complete strangers and those involving a brief casual encounter; cumulative percentages

Distance base point – contact site (shortest measurable dis- tance)	“Strangers”		“Brief casual en- counter”	
	Number (n)	%	Number (n)	%
1 km or less	24	29.3	7	41.2
5 km or less	26	61.0	4	64.7
10 km or less	12	75.6	3	82.4
15 km or less	7	84.1	0	82.4
20 km or less	2	86.6	0	82.4
more than 20 km	11	100.0	3	100.0
Total:	82	100.0	17	100.0

The results for the two groups exhibit no significant differences. The criterion of offender-victim relationship has no bearing whatsoever on the assessment of geographical criminal behaviour in cases of sexual homicide.

4.6 Age

4.6.1 Offender age in rape cases

Based on common experience, one would expect older offenders to exhibit greater mobility in connection with the commission of sexual crimes than younger ones. Offenders in older age groups are assumed to have acquired more extensive experience in different geographical areas in the course of the general socialisation process (e.g. having worked at different jobs and changed their place of residence several times, in some cases). Furthermore, one is more likely to assume that older offenders consider the increased risk of identification associated with operating in geographical area of proximity to their home base.

The average age of rapists in this study was 29. Thus the offenders were divided into two groups: “younger” offenders 29 years or under (191 cases) and “older” perpetrators aged 30 and above (157 cases).

It was actually determined in the course of this study that the group of “older” offenders tended to travel greater distances between their base points and contact sites than those of the “younger” group. The difference is not statistically significant, however, which means that this “tendency” has little relevance for practical police work.

Here as well, more than 80% of the offences committed by both younger and older offenders originated within the regional area. This was true in 86.9% of cases involving younger offenders (166 offences) and in 82.8% of the cases (130 offences) in which crimes were committed by older offenders.

However, significant differences were identified when the sample was divided into two groups comprising offenders who were less than 18 years old and those who were 18 or above, respectively, at the time the offence was committed. The consideration underlying this approach was that offenders under the age of 18 are not entitled to acquire Class 3 driver's permits and are thus likely to be less mobile.

Fig. 14:

Distances between base points and contact sites in the groups of rapists “under the age of 18” and “18 and above”; cumulative percentages

Distance base point – contact site (shortest measurable dis- tance)	“Under 18”		“18 and above”	
	Number (n)	%	Number (n)	%
1 km or less	10	37.0	88	27.4
5 km or less	13	85.2	104	59.8
10 km or less	1	88.9	41	72.6
15 km or less	0	88.9	26	80.7
20 km or less	0	88.9	13	84.7
more than 20 km	3	100.0	49	100.0
Total:	27	100.0	321	100.0

As Fig. 14 shows, the assumptions in question were – to no great surprise – affirmed to a highly significant degree. These values are analogous to those for the “site of attack” and the “site of rape”. Here as well, offenders under the age of 18 travelled distances that were shorter by a highly significant degree.

4.6.2 Offender age in sexual homicide cases

The average age of the sexual killers in this sample was 29. Once again, two groups were formed, one comprising “younger” offenders 29 years old and under (51 cases), the other “older” offenders aged 30 and above (48 cases).

There was no difference in the values for the two groups. No significant deviations were identified.

In 84.3% of the cases involving “younger” offenders, the offences were committed within 20 kilometres of the offender’s base point. This also applied in 87.5% of the cases involving “older” offenders.

Even the division of the sample into two age groups – “under 18” and “18 and above” produced no significant differences of the kind identified for the group of rapists.

These findings clearly indicate that conclusions with respect to the geographical behaviour of offenders in the commission of sexual homicides based solely upon age estimates, within the context of a case analysis, for instance, cannot be justified.

4.7 Prior police records

An offender's prior police record⁷⁴ may influence his geographical behaviour in the commission of crimes, as previous contacts with the police may prompt the offender to exercise greater caution in the selection of future crime sites. This assumption would appear to be particularly applicable to offenders with records of related offences,⁷⁵ i.e. in cases in which sexual offences appear in the offender's police record. In the case of offences committed in regional proximity, these offenders would have reason to fear that they would be automatically included in the group of individuals selected for investigation.

4.7.1 Prior police records in rape cases

In approximately 86% of the rapes cases (299 offences) studied, the rapists had prior police records⁷⁶. Surprisingly, no differences in geographical behaviour were found between these offenders and those who had no prior police records. In both groups, the distance from the base point to the contact site was within the regional range of 20 kilometres in approximately 85% of all cases.

Thus the existence of prior police records does not represent a distinguishing factor **with respect to the question of geographical behaviour**. This also applies to offences committed by offenders with police records of offences in the relevant category.

⁷⁴ For the purposes of this study, prior police records include all information regarding felonies or misdemeanours appearing in police records prior to the rape or sexual homicide analyzed in this study.

⁷⁵ "Relevant" offences include all crimes covered by Section 13 of the StGB (German penal code).

⁷⁶ These values conform to the statements of Straub & Witt (2003) regarding prior police records of rapists. There as well, 85% of all "stranger" rapists had prior police records.

Offenders in nearly 45% of all cases (156 offences) had prior police records of offences in the relevant category. These offenders did not differ with respect to geographical behaviour in the commission of their crimes from the group of offenders without prior police records of relevant offences. The percentages of cases involving regional proximity to the base point are nearly the same: 84.9% (no prior sexual offences) and 85.3% (prior sexual offences).

4.7.2 Prior police records in cases of sexual homicide

The findings for sexual homicides were virtually identical. In 85% of all cases (84 offences), offenders had prior police records. Prior police records of offences in the relevant category existed in only 46% of the cases studied (46 offences).

The question of prior police records as such plays no role in the assessment of the geographical criminal behaviour of sexual killers. Regional proximity between the contact site and the offender's base point was ascertained in more than 85% of the cases studied in both groups (with and without prior police records).

This is true as well of offences committed by offenders with prior police records of offences in the relevant category. The percentages of regional offences attributable to the two subgroups were 84.8% (with prior records of relevant offences) and 86.8% (without prior records of such offences).

In summary, the findings show that no reliable statements with respect to the geographical behaviour of offenders can be made on the basis of prior police records, regardless of whether such records relate to criminal offences in general or to crimes in the relevant category.

4.8 Serial crimes

Another objective of the study was to determine whether differences in distances travelled in the commission of crimes could be identified between serial offences and single offences. This question is of particular interest in view of the widespread assumption that serial offenders plan their crimes carefully and thus tend to travel long distances to commit them. On the basis of this assumption, one is likely to expect that a very high percentage of offences classified in the “interregional category” would be serial crimes.

It is appropriate to begin by defining what is meant by a “series”. The following definition applies to both rapes and sexual homicides.

For the purposes of this study, a “series” is assumed to exist when an offender has been convicted of at least two offences involving rape and/or homicide committed at different times. While there must be a certain temporal correlation between the two offences, the series is also characterised by what is known as an “emotional cooling-off” period during which the offender has an opportunity to recover a measure of emotional balance. The second or subsequent offence is preceded by a separate decision to commit, and the offences must have reached the attempt phase, at a minimum.

4.8.1 Serial rapes

Approximately 37 % of the rapes studied (130 cases) were part of a series. In 54% of these serial offences (70 cases), a prior decision to commit the offence was ascertained. This percentage is significantly higher than the corresponding value for single offences, of which only 10% (22 offences) were “planned” in advance.

With regard to distances travelled, the findings show that serial offenders are significantly more mobile than one-time offenders on the whole. This significant difference is evident in all distances travelled from the base point to the respective crime scene.

Nearly nine out of every ten one-time offences were classified as “regional”, whereas “only” three-fourths of the serial offences met this criterion.

Fig. 15:

Distances between base points and contact sites in rapes committed by serial and one-time offenders; cumulative percentages, significant values highlighted (highly significant values in dark red)

Distance base point – contact site (shortest measurable dis- tance)	Serial offences		Single offences	
	Number (n)	%	Number (n)	%
1 km or less	24	18.5	74	33.9
5 km or less	46	53.8	71	66.5
10 km or less	14	64.6	28	79.4
15 km or less	12	73.8	14	85.8
20 km or less	4	76.9	9	89.9
more than 20 km	30	100.0	22	100.0
Total:	130	100.0	218	100.0

This distance “1 kilometre or less” is worthy of particular attention, as the incidence of initial contact between the offender and the victim within this range is lower to a highly significant degree in serial offences.

As in the case of “rapists who plan their crimes”, serial offenders show a strong tendency to avoid operating in the immediate vicinity of their base point.

The question of whether this “buffer zone” phenomenon is attributable to anticipation of police intervention or to a reaction to such intervention (keyword: “scorched earth”),⁷⁷ is of no consequence in this context. For the purposes of behavioural case analysis, it is important only to determine whether or not such a zone exists for serial rapists.

⁷⁷ As Canter & Larkin also assume (1993, p. 68).

4.8.2 Serial sexual homicides

Among the sexual homicides analysed, 24 out of 99, or roughly 24% of all offences, were identified as serial offences. As in the rape cases, a significantly higher proportion of serial sexual homicides were “planned” offences (75% of serial homicides as compared to 33% of one-time offences).

Although the figures might suggest otherwise, no significant differences were found in the comparison of serial sexual homicides with single offences with respect to distances travelled from the base point to the contact site or other crimes scenes.

Approximately eight out of ten serial homicides are classified as “regional”, whereas nearly nine out of ten single offences met this criterion.

Fig. 16:

Distances between base points and contact sites in cases of sexual homicide committed by serial or one-time offenders;

Distance base point – contact site (shortest measurable dis- tance)	Serial offences		Single offences	
	Number (n)	%		Number (n)
1 km or less	6	25.0	25	33.3
5 km or less	8	58.3	22	62.7
10 km or less	1	62.5	14	81.3
15 km or less	2	70.8	5	88.0
20 km or less	2	79.2	0	88.0
more than 20 km	5	100.0	9	100.0
Total:	24	100.0	75	100.0

In contrast to serial rapes, the maintenance of a “buffer zone” is not evident in the group of serial homicides studied. This corresponds to the findings cited in Section 4.4.2 (Planned sexual homicides), where the absence of a “buffer zone” was also ascertained among “planned” sexual homicides.

The findings show that conclusions regarding the geographical behaviour of criminal offenders cannot be derived on the basis of the criteria of “serial offence” versus “one-time offence”.

4.9 “Break-in” rapes

Offences involving “breaking-into” an area in which the victim is normally secure followed by rape represent a special category of sex-related crimes. As a rule, within this category offenders break into the victim’s domicile,⁷⁸ and the majority of such crimes are committed at night or during the hours of darkness. These offences are frequently preceded by a conscious decision to commit rape. In several cases, offenders claimed to have broken into a residence for the purpose of committing a property crime. It is likely, however, the majority of such claims represent attempts on the part of the offender to conceal their real (sex-related) motives.

The question of differences in distances travelled by offenders in “break-in offences” and crimes which do not involve this mode of operation was addressed only with respect to rapes. The number of cases in the group of sexual homicides provided an insufficiently large basis for such an analysis.

In 6.4% of the rape cases studied (22 out of 342 offences),⁷⁹ the offender gained access to his victim by “breaking into” the victim’s personal domain. Further criminal acts in all of these cases were committed at this location.

⁷⁸ Other personal areas of victims include hotel and hospital rooms, for example.

⁷⁹ Six offences committed by one offender were excluded from the sample. This offender exhibited an extremely interregional mode of operation. As a courier, he committed his crimes in the large region between Hamburg and Hanover. The offences committed by this offender would have distorted the results for this particular question and were therefore not taken into consideration. The exclusion of these cases is permissible within the context of the statistical analysis.

The findings show that “break-in rapists” are offenders characterised by an extreme regional orientation. The values for this group differ to a highly significant degree from those of the control group consisting of offenders who did not break into their victim’s place of residence.

In over 80% of the cases studied, the offender’s base point was located within five kilometres of the crime scene, and no offence was found to have been committed outside the range of 15 kilometres from the offender’s base point.⁸⁰ This is by far the highest value recorded for this distance category in the course of this study.

Fig. 17:

Distances between the offender’s base point and the crime scene in cases of “break-in” rape and rapes in which offenders did not “break into” the victim’s place of residence; cumulative percentages, significant values highlighted

Distance base point – crime scene (shortest measurable dis- tance)	“Break-in offences”		Offences without “break-in”	
	Number (n)	%	Number (n)	%
1 km or less	8	36.4	90	28.1
5 km or less	10	81.8	107	61.1
10 km or less	2	90.9	40	74.1
15 km or less	2	100.0	23	81.3
20 km or less	0	100.0	12	85.0
more than 20 km	0	100.0	48	100.0
Total:	22	100.0	320	100.0

The findings show that rapes in which the offender breaks into the victim’s personal domain occur primarily in the vicinity of the offender’s base point. This

⁸⁰ An examination of specific distances shows that the maximum distance was only approximately 12 kilometres.

conforms with the findings of other related studies which show that break-in rapists tend to travel only very short distances.⁸¹

The most likely explanation for this phenomena is the cover of darkness, which enables offenders to approach their targets without a significant risk of discovery.

Moreover, offenders reduce the risk of identification by their victim by exploiting the cover of darkness within the target object and, in some cases, by wearing masks. The danger of “interruption” from outside, e.g. in the form of intervention by witnesses to the crime, is also reduced when the offender attacks a victim in her own place of residence.

Offenders who employ this method have so many “protective factors” in their favour that they tend to see no need to shift the scene of their criminal acts to more distant, unfamiliar locations. In addition, proximity to the offender’s base point facilitates the process of “checking out” their victim in advance that is frequently associated with such offences.

4.10 Children as victims

The rape and subsequent murder of a child undoubtedly represents a serious violation of a prevailing taboo even within the sphere of violent sexual crime, primarily due to the innocence and vulnerability of child victims. By its very nature, this particular constellation involves one of the most extreme power imbalances that can exist between an offender and a victim. These victims are utterly defenceless in the face of the superior size and physical strength of their attackers.

For the purposes of this study, “children” are defined as victims aged 12 and under. This age restriction, which does not conform to the prevailing legal defi

⁸¹ Cf. LeBeau 1987. This phenomenon was confirmed in the course of this study for a heterogeneous region like that of the Federal Republic of Germany.

nition, was selected because victims in this age group still exhibit a childlike appearance.

4.10.1 Children as victims of rape

The victims in approximately 11 % of the rapes studied (39 cases) were children. In the remaining 309 cases, the victim was at least 13 years of age.

A comparison of these two groups with regard to the geographical behaviour of offenders produced highly significant differences. In 92.3% of cases (36 out of 39 offences) in which the victim of a rape was a child, the crime was committed within less than 15 kilometres of the contact site.

However, the findings show that – despite these highly significant differences – offenders in 84.1% of the rape cases studied (260 out of 309 offences) exhibited a regional orientation (within a range of 20 kilometres).

Fig. 18:

Distances from the base points to contact sites in rapes in which the victim was a child and rapes in which the victim was not a child; cumulative percentages, significant values highlighted

Distance base point – contact site (shortest measurable dis- tance)	“Victim aged 12 or under” (child)		“Victim above the age of 12”	
	Number (n)	%	Number (n)	%
1 km or less	12	30.8	86	27.8
5 km or less	17	74.4	100	60.2
10 km or less	5	87.2	37	72.2
15 km or less	2	92.3	24	79.9
20 km or less	0	92.3	13	84.1
more than 20 km	3	100.0	49	100.0
Total:	39	100.0	309	100.0

One possible explanation for this strong regional orientation is that offenders who “plan” their offences are compelled to give particular consideration to the setting of their crimes. Children are ordinarily only available as victims during the hours of daylight, for example, and the risk of discovery while committing a crime is higher during the day. Offenders may attempt to minimise that risk by selecting a setting in which they are better able to calculate and control it. Familiarity with an area can have a positive influence on risk assessment from the offender’s point of view. Furthermore, offenders are more likely to be regarded as “naturally entitled” to be at the crime scene in such areas and are therefore less likely to be regarded as “intruders”.⁸²

This explanatory model does not apply to offenders who decide “spontaneously” to commit their crimes. However, these offenders are basically very regionally oriented, as shown in Section 4.4.1 above.

4.10.2 Children as victims of sexual homicide

The group of sexual homicides is characterised by a larger proportion of child victims which differs to a highly significant degree from that of the rape group. Children were victims of sexual homicide in approximately 31% of the cases studied (31 offences).

No significant differences with regard to distances travelled were found between the groups of “homicides with child victims” and “homicides with victims who were not children”. More than 85% of the cases in both groups are classified within the regional range.

⁸² See Hanfland, Keppel & Weis 1992.

Fig. 19:

Distances between base points and contact sites in case of sexual homicide with child victims and sexual homicides in which the victims were not children; cumulative percentages

Distance base point – contact site (shortest measurable dis- tance)	"Victim aged 12 or under" (child)		"Victim above the age of 12"	
	Number (n)	%		Number (n)
1 km or less	14	45.2	17	25.0
5 km or less	7	67.7	23	58.8
10 km or less	5	83.9	10	73.5
15 km or less	1	87.1	6	82.4
20 km or less	0	87.1	2	85.3
more than 20 km	4	100.0	10	100.0
Total:	31	100.0	68	100.0

Despite the absence of significant differences, a closer look at the group of sexual homicides involving child victims is worthwhile.

A significant number of offences were concentrated in the immediate vicinity, within 1 kilometre, of the offender's base point. In 11 out of 14 cases, the offender's base point was actually less than 500 metres from the contact site. Relatively few offences took place within the broad area beyond the "1-kilometre boundary", and nearly 84% of these crimes occurred within a range of 10 kilometres.

This spatial proximity of the contact site and the base point could in itself represent a cause of the subsequent killing of the victim for the purpose of concealing the offender's identity. Furthermore, a significantly higher percentage of sexual killers whose victims are children have police records of related offences. In 61.3% of the cases studied (19 of 31 offences), the offender had been previously charged with a sexual crime. These offenders can be expected to have been aware of the legal and social consequences that awaited them in

the event that they were identified as offenders again. And the killing of the child – the only eye-witness to the crime – may well have represented their only hope of avoiding identification.

This finding is of crucial importance to investigative tactics. As a consequence, police investigations of sexual homicides involving child victims should concentrate initially on the immediate vicinity of the presumed contact site.

4.11 Movement of the body following sexual homicide

In the past, Operational Case Analysis (OCA) units have often been called upon to examine cases in which victims' bodies were found at locations that were not identical to the sites at which they were killed and in which there was reason to suspect that the body was moved to the place of discovery with the aid of a vehicle. Offences of this kind pose a major challenge for the investigating agency, as is indicated by the low rate of success in solving cases with this particular constellation. This circumstance prompted the authors to focus special attention on sexual homicides involving this mode of operation.

It should be noted at the outset that cases in which the victim's body is moved from the site of the killing are quite rare. Only 25 solved cases of sexual homicide in which victims and offenders were strangers and in which the victim's body was moved with the aid of a vehicle were identified for the period from 1971 to 2001. In addition, there were 50 cases of "potential movement of the body" in which the offender had not yet been identified.

As a rule, police investigations begin at the site at which the body is found. There is a general tendency to draw conclusions regarding the offender's base point from this location. As shown in Fig. 20, such conclusions often do not contribute appreciably to success in locating the offender and thus should not determine the primary course of action.

Fig. 20:

Distances from the body discovery site to the offender's base point in sexual homicides; cumulative percentages

Distance body discovery site – of- fender's base point (shortest measurable dis- tance)	Sexual homicides involving movement of the body	
	Number (n)	%
20 km or less	11	44.0
50 km or less	7	72.0
100 km or less	3	84.0
more than 100 km	4	100.0
Total:	25	100.0

In less than half of the cases studied, the offender's base point was located within 20 kilometres of the site at which the body was discovered.⁸³ In ten of these eleven cases, however, the entire sequence of events involved in the crime occurred within the regional area around the offender's base point.

In 56% of the cases, the offender's base point was located more than 20 kilometres from the site at which the body was discovered. Distances of up to 400 kilometres (shortest measurable distance) were measured in several cases.

As shown in Fig. 21, the offender's base point was situated within 10 kilometres of the contact site in three-fourths of all cases studied. Comparison between the group of cases involving "movement of the body" and that of sexual homicides in which the body was not moved produced no significant differences. Both groups exhibited the same geographical behaviour.

⁸³ Individual distances were less than 5 kilometres in three cases, less than 10 kilometres in eight cases and less than 15 kilometres in eleven cases.

Fig. 21:

Distances between contact sites and offender's base points in cases of sexual homicide involving movement of the body and those in which the body was not moved; cumulative percentages

Distance contact site – offender's base point (shortest measurable distance)	Sexual homicide involving movement of the body		Sexual homicide without movement of the body	
	Number (n)	%	Number (n)	%
1 km or less	7	29.2	31	31.3
5 km or less	8	60.0	30	61.6
10 km or less	4	76.0	15	76.8
15 km or less	0	76.0	8	84.8
20 km or less	1	80.0	2	86.9
more than 20 km	5	100.0	13	100.0
Total:	25	100.0	99	100.0

In summary, it is evident that the site of contact between offender and victim is of significantly greater importance in the assessment of the offender's geographical behaviour than the site at which the body is discovered. The offender is more likely to be found within the regional area surrounding the contact site than within the area of the location at which the body is discovered. Thus in assessing the geographical behaviour of the offender, emphasis should be placed on the contact site rather than the site at which the body is discovered.

Also relevant in this context is the question of the offender's motivation to go to the effort of moving the body. Two case constellations provide keys that may be of use in answering this question:

- In 32% of the cases studied (8 out of 25 offences), the victims were hitch-hikers who entered the offender's vehicle. In most cases, the victim was killed inside or in the immediate vicinity of the vehicle, but at a location the offender found unsuitable for depositing the body. In this constellation, the effort involved in moving the body was naturally limited, as the offender had his vehicle available "on the scene".
- In 44 % of the cases involving movement of the body (11 out of 25 offences) the offender took the victim to his own place of residence, where he then committed both the rape and the murder. This value is higher by a significant degree than that for the group sexual homicides in which no movement of the body occurred. In this latter group, the victim was killed at the offender's base point in only 6% of the cases studied (6 out of 99 offences).⁸⁴ By its very nature, the killing of the victim at the base point necessitates removal of the body from the vicinity of the offender's residence.

⁸⁴ In all six cases, the victims were already present at the offender's base point at the time the crime began (initial contact). In most cases, the bodies were left in the vicinity of the base point because the offenders had no suitable vehicle with which to move them.

4.12 Sexual homicides in the GDR

Cases of sexually motivated homicides committed in the former GDR are submitted primarily to OCA units in the new German states for analysis. For this reason, the study also addressed the question of whether the sexual homicides committed in the GDR exhibited significant differences with respect to geographical behaviour as compared to those committed in the Federal Republic of Germany.

A total of 43 sexual homicides committed in the territory of the former GDR involving offenders and victims who were strangers to one another during the period from 1978 to 1988 were analysed. In all of the cases studied, the offender's base point was located within the regional area of the contact site (see Fig. 22 below).

Fig. 22:

Distances between offender's base points and contact sites in cases of sexual homicide in the former GDR (1978-1988) as compared to sexual homicides in the FRG (1991-2001); cumulative percentages

Distance base point – contact site (shortest measurable dis- tance)	Sexual homicides in the former GDR		Sexual homicides in the Federal Re- public	
	Number (n)	%	Number (n)	%
1 km or less	16	37.2	31	31.3
5 km or less	15	72.1	30	61.6
10 km or less	2	76.7	15	76.8
15 km or less	7	93.0	8	84.8
20 km or less	3	100.0	2	86.9
more than 20 km	0	100.0	13	100.0
Total:	43	100.0	99	100.0

Although comparison with sexual homicides in the Federal Republic of Germany from 1991 to 2001 produced no significant differences with respect to the geographical behaviour of this group of offenders, a statistical trend toward regional criminal behaviour in terms of the distance between offender's base point and contact site is evident.

With regard to other crime sites, it is important to note first of all that all events involved in the commission of the crimes occurred at a single location in nearly two-thirds of the cases studied (as compared to approximately one-half of sexual homicides in the Federal Republic). In the remaining cases, only two different locations were involved, i.e. no offence was found to have involved three or more crime scenes. Thus the level of mobility was significantly lower. This conclusion is supported by the fact that vehicles were used in the commission of an offences in only two cases (as compared to 42 cases in the Federal Republic). In no case did the distance travelled between the first and second crime scenes exceed 4,300 metres (shortest measurable distance).

In contrast to sexual homicides committed in the Federal Rea public, a significantly larger proportion of offenders in the GDR remained in the vicinity of the contact site, even in cases involving a shift of crime scene. Offenders in the former GDR were significantly less mobile in all phases of their crimes. This is reflected in a significant difference in distances travelled from the offender's base point to the rape and homicide sites. Both of these locations are much closer to the offender's base point in offences in the GDR sample (and all are restricted to the regional area) than is the case for the control group of sexual homicides committed in the Federal Republic.

Furthermore, the findings show that the average age of offenders at the time of the offence in cases of sexual homicide in the former GDR was lower to a significant degree than that of offenders in the Federal Republic. The average age of offenders in the sample for the Federal Republic was 29, while that of offenders in the former GDR was significantly younger, at 24 (the median age⁸⁵ was even younger, at 22). No explanation for this phenomenon could be found on the basis of the data analysed. Separate studies would be required for this purpose.

⁸⁵ The median is the number in the middle of a series. In other words, half of the numbers are lower than the median, while the other half are higher than the median.

5 Summary of key findings

5.1 Individual offence groups

5.1.1 Rapes

- ⇒ In nearly nine out of every ten rape cases studied, the contact site was located no more than 20 kilometres (shortest measurable distance) from the offender's base point.
- ⇒ In approximately two-thirds of all rape cases, initial contact between the offender and the victim took place in the community/city in which the offender's base point was located.
- ⇒ In approximately 95% of all rape cases, all events involved in the commission of the crime occurred in the federal state in which the offender's base point was located.
- ⇒ A close regional relationship to the contact site on the part of the offender can be assumed in rape cases in which the scene of the crime was shifted and the victim initially followed the offender voluntarily.
- ⇒ As a rule, only short distances were travelled in cases involving shifts of a crime scene. It is not possible to draw conclusions with respect to a favoured direction in such shifts.
- ⇒ Offenders with base points in communities or cities with populations of between 5,001 and 20,000 exhibit greater mobility in the commission of their crimes than all other offenders.
- ⇒ Offenders in "planned" rapes travel greater distances between their base points and the contact sites than offenders who commit "spontaneous" rapes.
- ⇒ The majority of rapists who have taken a prior decision to commit their crimes maintain a "buffer zone" around their base points. They avoid making initial contact with their victims within one kilometre of their base points.

- ⇒ Offenders under the age of 18 travel shorter distances to commit their crimes. Otherwise, the criterion age plays no role in the assessment of a rapist's geographical behaviour.
- ⇒ The existence of prior police records as such and of records of relevant offences in particular is not a discriminating factor in the assessment of an offender's geographical behaviour.
- ⇒ Serial rapists are more mobile than "one-off" offenders, and the majority of serial rapists maintain one-kilometre buffer zone around their base points.
- ⇒ "Break-in rapists" exhibit an extreme regional orientation.
- ⇒ In 90% of cases in which a child was the victim of rape, the offender's base point was located with 15 kilometres (shortest measurable distance) of the contact site.
- ⇒ No significant correlations (patterns) were identified within the group of rapes involving inter-regional movements by offenders during commission of their crimes.

5.1.2 Sexual homicides

- ⇒ In nearly nine of every ten sexual homicide cases, the contact site was located within 20 kilometres (shortest measurable distance) of the offender's base point.
- ⇒ In over half of the sexual homicides studied, initial contact between the offender and the victim took place in the community/city in which the offender's base point was located.
- ⇒ In approximately 95% of all sexual homicide cases, all events involved in the commission of the crime occurred in the state in which the offender's base point was located.
- ⇒ A close regional relationship to the contact site on the part of the offender can be assumed in sexual homicide cases in which the scene of the crime was shifted and the victim initially followed the offender voluntarily. In more than half of the cases studied, the offender's base point was located less than one kilometre (shortest measurable distance) from the contact site.
- ⇒ In sexual homicides in which the victim was forcibly moved to another crime scene, the vast majority of offenders maintained a "buffer zone" around their base points.
- ⇒ It is not possible to draw conclusions with respect to direction in cases involving a shift of crime scene. In the majority of cases, shifts in crime scene did not involve travel over great distances.
- ⇒ In more than three-fourths of all sexual homicides in which the offender's base point was located in an urban region, contact between the offender and the victim took place at a distance of less than five kilometres from the offender's base point. This value differs significantly from that for homicides committed by "rural" offenders.
- ⇒ No significant differences were identified within the group of sexual homicides between offences committed on the basis of "prior decision" and those that were "spontaneous".

- ⇒ In contrast to the rape cases, the existence of a “buffer zone” around the offender’s base point could not be ascertained among “planned” sexual homicides.
- ⇒ The criterion of age plays no role in the assessment of the geographical behaviour of offenders in sexual homicide cases.
- ⇒ Prior police records in general and records of relevant crimes do not represent a distinguishing factor in the assessment of the geographical behaviour of offenders in cases of sexual homicide.
- ⇒ Serial killers do not differ in terms of geographical behaviour from one-time killers. In contrast to the rape cases, the existence of a “buffer zone” was not ascertained.
- ⇒ In nearly half of the cases of sexual homicide in which the victims were children, initial contact took place less than one kilometre from the offender’s base point.
- ⇒ No significant correlations (patterns) were identified within the group of sexual homicides involving inter-regional movements by offenders during commission of their crimes.

5.1.3 Sexual homicides involving movement of the body

- ⇒ The site of initial contact between the offender and the victim is significantly more relevant to the localisation of the offender's base point than the site at which the body is discovered. The offender is more likely to be found within the regional area of the contact site than within that of the site at which the body is discovered.
- ⇒ In 44% of the cases studied, the offender took the victim to his own residence, where he committed both the rape and the murder.

5.1.4 Sexual homicides in the former GDR

- ⇒ Offenders in the GDR were significantly less mobile during all phases of the commission of their crimes than those in the Federal Republic. This is reflected in a significant difference in the average distance travelled from the offender's base point to the sites of both the murder and the rape.
- ⇒ The average age of sexual killers in the former GDR (24) was significantly higher than that of offenders in the sample for the Federal Republic (29).

5.2 Verification of hypotheses

- ◆ *Both rapists and sexual killers exhibit a fundamental regional orientation.*

This hypothesis was confirmed on the basis of the findings in this project. As a rule, a regional relationship to the contact site was established for both rapists and sexual killers in between eight and nine out of ten cases. A lesser regional orientation was identified in only one subgroup (rape involving forcible movement of the victim to another crime scene), in which “only” 71% of offenders had regional ties to the contact site.

The contact site was located in the immediate vicinity of the offender’s base point in a significant number of cases.

- ◆ *Crimes of opportunity (spontaneous decision to commit taken by “opportunists”) differ in certain ways from crimes committed on the basis of a prior decision (so-called “planned” offences). While “opportunists” operate in a highly regional manner in committing their crimes (orientation to daily routines), offenders who proceed on the basis of a “plan” tend to operate within a larger range of action (yet remain within the regional area).*

This hypothesis was confirmed only for the group of rape cases. Offenders who proceeded on the basis of a “plan” actually travelled greater distances from their base point to the contacts site than offenders who acted “spontaneously”. However, in nearly 80% of the “planned” offences, offenders selected contact sites within 20 kilometres of their base point.

The hypothesis proved false for the group of sexual homicides. The question of whether an offender proceeds on the basis of a prior plan or decides quickly and “spontaneously” to commit an offence plays no role in the assessment of geographical criminal behaviour of sexual murderers.

- ◆ *In cases in which a victim is first overpowered and then taken to a different location, it is possible to identify patterns which enable the analyst to draw conclusions about the offender's regional origin.*

This hypothesis was confirmed neither for the group of rapes nor for the group of sexual homicides. In cases involving a shift of location during the commission of a crime, the distances travelled were relatively short, and most offenders were primarily concerned with proceeding as quickly as possible to a safe location at which the sexual offence could be committed without disturbance. The direction pursued during such shifts of location depended primarily on the specific circumstances prevailing at a given crime scene and did not reflect the offender's intention to conceal the location of his own place of residence.

- ◆ *The murder of a victim following rape for the purpose of concealing the offender's identity correlates to the regional proximity of the offender's place of residence.*

This hypothesis was confirmed only with respect to sexual homicides in which the victims were children, and then only to a limited extent. In this group of crimes, the short distances between the offender's base point and the contact site identified in nearly half of the cases studied may represent one of several reasons for the subsequent murder of the child.

No other correlations could be verified in any of the other cases.

- ◆ *The movement of a victim's body with the aid of a vehicle after commission of the crime correlates with the proximity of the offender's place of residence.*

Offenders in a large number of cases took their victims to their own domiciles, where they raped and killed them and were thus compelled to remove the body from the immediate vicinity. Consequently, the hypothesis was confirmed for a significant number of cases involving movement of the body.

6. Summary and conclusions

As described in the introduction, such factors as prior police records, data relating to the geographical location of an offender and information about the presumed age of the offender play a key role in systematic searches for unidentified offenders in sex-related crimes. Following publication of the study on prior police records of rapists and sexual killers in 2002, this study addressed questions regarding the geographical behaviour of this group of offenders.

The primary objective was to provide support for police investigators in the form of empirically verified findings that could be generally applied to the Federal Republic of Germany. Particular emphasis was placed on the applicability of findings to practical police investigations and operational (behavioural) case analysis. Thus, for example, the authors chose neither to focus on a highly selective sample (e.g. serial offenders alone) nor to limit the selection of locations designated as offender base points.

As in the Anglo-American studies, the findings produced within the framework of this study confirmed that – even in mobile societies – the majority of both “stranger” rapists and “stranger” sexual killers operate within a regional context. Within the group of rapes, most of the differences identified between various (dichotomous) subgroups were found to be significant. This was true of the group of sexual homicides only in isolated cases. In contrast to the group of rapists, a greater degree of heterogeneity with regard to geographical behaviour was found in the group of sexual killers, a phenomenon which makes it difficult to recognise geographical patterns.

In considering the high proportion of regional offenders among perpetrators of crimes in which offenders and victims were “strangers” to one another, it is important not to overlook the fact that a large number of sexual offenders are based in the social vicinity of their victims and that even greater geographical proximity is necessarily given in these cases. Thus the hypothesis that sexual crimes are essentially offences of a local nature (Baurmann 1983) is confirmed in impressive manner.

This also corresponds with the principle developed by Cohen & Felson (1979), according to which the majority of crimes are committed within the context of routine activities and thus involve geographical proximity in the majority of cases.

With regard to theories of rational choice (Cornish & Clarke 1986, Clarke & Felson 1993), it was determined in a large number of cases that offenders weighed the potential gain from criminal activity in a specific situation against the probability of identification and/or apprehension. Thus these offenders are less likely to be acting upon a long-term, compulsion-driven motivation but tend instead to seize what they regard as a favourable opportunity in a given situation.

Although elements of rational choice are indeed evident, this does not imply that most offenders plan their offences thoroughly (including, for example, the selection of a suitable crime location). Thus the journey-to-crime concept that is often cited in criminological literature is imprecise, as the majority of sexual offenders do not deliberately “set out” to commit a sexual offence but tend instead to commit such crimes spontaneously.⁸⁶

⁸⁶ The concept of commuting sexual offenders proposed by Canter & Larkin played no quantitative role in this study (cf. also Davies & Dale 1995, who did not find it necessary to place special emphasis on “commuters” as an offender category).

Rapists who seek out a specific victim (“prior decision to commit”) are less regionally-oriented than offenders who do not meet this criterion. This altered regional orientation is most clearly reflected in the maintenance of a so-called buffer zone around the offender’s base point.⁸⁷ The concept of buffer zones (Brantingham & Brantingham 1981, Canter & Larkin 1993, Rossmo 2000) was confirmed only in the group of rapes committed on the basis of prior decision and those committed by serial rapists.

No such correlation was found within the group of sexual killers, due to their heterogeneity. Rapists and sexual killers exhibit strong similarities with respect to prior criminal records (Straub & Witt 2002) and regional orientation, although in the case of sexual killers – in contrast to rapists – individual criteria such as the degree of planning, seriality or the occurrence of brief casual encounters are not distinguishing factors with regard to the geographical behaviour of these offenders.

For these reasons as well, the results of this study should not be regarded as instruments in the sense of “if-then rules”. Geographical behaviour must be assessed on a case-by-case basis, especially in cases of sexually motivated homicide.

The authors are well aware that the strong probability that an offender is to be found within a regional area within 20 kilometres of the site of contact, especially in urban regions, does not represent a particularly distinctive discriminating characteristic. However, viewed in combination with other research criteria (e.g. prior police records), this principle can be helpful in describing a group of potential suspects and in establishing priorities within an existing circle of suspects.

⁸⁷ Nevertheless, the percentage of regional offenders within the group of offenders who made prior decisions to commit was 87.5% (crimes committed within the 20-kilometre radius).

However, the study also confirms the presence of an extreme regional orientation within several subgroups, on the basis of which it should be possible to assess the possible anchor-points of these offenders more precisely. This applies in particular to the categories of "break-in rape" and offences in which the victims are children.

Traditional offender typologies such as those developed by Groth, Burgess & Holmstrom (1977) are probably unsuitable for use in assessing the geographical behaviour of offenders. More relevant to the purposes of such assessments are such categories of offender behaviour as recognisable elements of crime planning.

Contrary to popular opinion and to the conclusions presented in several studies in the field – especially Davies & Dale 1995 – the findings of this study did not confirm the assumption that the factor of "offender age" has an impact on the geographical behaviour of a given sexual offender.⁸⁸

The findings of this project confirm once again that a substantial majority of sexual offenders have prior police records.⁸⁹ However, the fact that an offender possibly had a police record prior to commission of a sexual offence, regardless of the type of crime of which he stood accused, does not allow for the derivation of geographical statements.

In cases involving multiple crime scenes, it is often considered desirable to draw conclusions regarding the offender's base point from information about directions of movement. On the basis of the findings of this study, it is not possible to make reliable statements about preferred patterns of movement (e.g. "the offender moves closer to his base point"). In such cases, it may be possible to reconstruct the offender's directions of movement and thus to draw conclusions

⁸⁸ Apart from the distinction between offenders above or below the age of 18 (i.e. the importance of the driver's permit).

⁸⁹ Offenders in 86 % of the rapes and 85% of the sexual homicides had prior police records. Grubin & Gunn (1990), Davies & Dale (1995), Jackson, van den Eshof & de Kleuver (1997), Davies, Wittebrod & Jackson (1998) and Straub & Witt (2002) found almost identical values. Similar values were identified by Haas & Kiliias (2000).

regarding the location of his anchor-point through individual behavioural case analysis in which other factors are considered as well.

The site of initial contact between the offender and the victim is of particular importance **to an assessment of geographical behaviour**, not only because the crime was initiated there but also because the probability of links between the offender's actions and his daily routines is highest at this location. Particularly in cases involving movement of the victim's body, knowing the contact site increases the probability of localising the offender's base point. Thus the authors agree with Cohen & Felson (1979) with regard to the importance of routine activities and with Keppel und Weis (1994) regarding tendency to overemphasise the significance of the body recovery site.

This study offers an opportunity to make differentiated statements about an unknown offender's geographical behaviour and may, in combination with other criteria, enable analysts to narrow the range of possible suspects in some cases. Future research will need to focus on other relevant criteria, including especially that of offender age.

7. References

Note: The English translations of German titles provided in square brackets are intended as aids to understanding and not as complete, literal equivalents of the original titles.

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