Special Issue: Homicide Research in Europe

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Editor’s Introduction—and Farewell

Nearly 7 years ago, the idea for a scholarly journal devoted to the study of homicide was discussed over a dinner at the American Society of Criminology meetings in Miami (see Smith & Corzine, 1997). Within months, the idea had become a reality; the Homicide Research Working Group (HRWG) agreed to serve as the sponsor, a contract was signed with Sage Publications, and I had the honor of serving as editor of a new journal called Homicide Studies. The first issue was submitted to Sage in November 1996, with Volume 1, Number 1 appearing in print in February 1997.

Now, some 5 volumes, 20 issues, 96 articles (excluding editor’s introductions), and 166 authors later, Homicide Studies has reached a milestone: the naming of a new editor. Or, in this case, editors. I am pleased to announce that at the HRWG workshop in Orlando, Florida, this past June, Thomas Petee (Auburn University) and Jay Corzine (University of Central Florida) were named the new coeditors of Homicide Studies. Tom, in consultation with Jay, will edit the journal from Auburn for the first 3 years; the roles will reverse for a second 3 years, with the journal shifting to Jay’s direction at the University of Central Florida. We were fortunate, and, indeed, grateful, to have significant support for the journal pledged by the administrations of both institutions. By the time this is read, the journal’s day-to-day operations will have been turned over to Tom and Jay, and the next issue will appear under their names. New contact information for the journal is shown on the back cover of this issue.

I leave the editorship knowing that the journal is in good hands. Jay has worked closely with the journal from its inception, being instrumental in its founding and serving as associate editor. Tom, a member of the editorial board, has provided tremendous support to the journal through his reviewing efforts and by serving as a guest editor of the special issue devoted to analyzing violent serial offending. Together, these two editors will bring new
energy, ideas, and directions to the journal, all of which are sorely needed to move it into the next phase of its existence.

The new editors will inherit a journal with a solid foundation and a growing reputation. However, they will continue to face a number of the same challenges that have persisted throughout the life of the journal. These include, but certainly are not limited to, the development of a steady stream of high-quality manuscripts, further inclusion of works that are directly relevant to practitioners, expansion of the journal’s interests into nations of non-Western culture, and a broadening of the institutional subscriber base. However, as I discovered, editors can only do so much, so let me take this final opportunity to encourage the readers of Homicide Studies to be a part of the effort it will take to successfully meet these kinds of challenges.

I wish that I could thank all my colleagues who, over these past 5 years, have helped to sustain Homicide Studies through their reviewing efforts, submission of their work, subscriptions, and recommendations of the journal to colleagues. In addition, I have had the pleasure of working with some great production staff at Sage Publications. However, attempting to construct that list would inevitably run the risk of omitting some important people. So, I hope all of you good people will read this and let it serve as a very sincere, heartfelt “thank you” for the many fine contributions that you have made. In so many ways, the journal exists for you and because of you. Don’t plan on relaxing, though, because Tom and Jay are going to need your help every bit as much as I did.

On second thought, I’ll take the risk. One person in particular deserves more mention than can be expressed in a simple “thank you.” Terry Hendrix, senior acquisitions editor at Sage Publications, was instrumental in establishing Homicide Studies and has been unwavering in his support throughout these past 5 years. Quite literally, we couldn’t have done it without you, Terry, so please know how much your efforts have been appreciated.

Being the initial editor of Homicide Studies has been a privilege, honor, and very special time in my professional life. Tom and Jay: May it be the same for you. To all, goodbye and best wishes.

M. Dwayne Smith

Editor
REFERENCE

A European Perspective on the Study of Homicide

Guest Editor’s Introduction

C. GABRIELLE SALFATI
University of Liverpool

The first issue of Homicide Studies (February 2000) of this new millennium started with an introduction from the editor, M. Dwayne Smith, who focused on what a homicide research agenda for the next decade might be. The question was posed to several leading scholars within the area of homicide research, and a number of diverse answers were offered regarding what we still need to explore within homicide research to develop this field. Some of the pertinent issues that came out from this solicitation of ideas focused on culture, subcultures, locality, the offender-victim interaction, issues of classification, and issues regarding the need to examine in more detail what the actual homicide interactions and events consist of in terms of actions and motivations.

In particular, Derral Cheatwood stated that “I think that the field is weak in studies of international homicide, whether in stand-alone studies of specific countries or in comparative studies to examine how the United States is doing relative to other countries” (Smith, 2000, p. 9). Simha Landau extended this thought by suggesting that scholars in the field “should make an effort to widen their scope of interest beyond the American scene” (Smith, p. 10). He further stresses that a stronger emphasis in future research on cross-cultural and cross-national research would be of both theoretical and applicable value and that, in addition to increasing our knowledge of homicide studies in different countries, research such as this would also allow American- and Western-based theories and methodologies to be tested in other countries and other cultural contexts.
EUROPEAN ISSUES IN
THE STUDY OF HOMICIDE

Much of the research in North America that deals with culture and subculture has focused on understanding homicide based on a North-South divide (e.g., Corzine, Huff-Corzine, & Whitt, 1999) or from a racial subgroup perspective (see Hawkins, 1999, for a discussion). Even with the relatively few differences there are, and the history of these differences spanning but a few hundred years, many authors have highlighted the complexity of examining these influences on homicide.

The situation in Europe is even more complex, even from a purely definitional point of view. What we call Europe can be defined in a number of different ways. First, there is the definition of Europe as the European Economic Union, which is composed of 14 countries (in alphabetical order): Austria, Belgium, Britain, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Luxemburg, Portugal, Spain, and Sweden. Then there is Europe as a geographic entity, which spans from Scandinavia in the north to Greece in the south—or even as far south as Istanbul in Turkey—and includes the Eastern European countries. Within this geographical area, there are huge differences in terms of culture, ethnicity, language, politics, and economics, some of which is based on a West/East or North/South distinction, or even a distinction of whether the country is an island like the United Kingdom or part of mainland Europe. Mixed into all of this are many differences within each of the countries themselves due to regional variations, the historical changes of boundaries, and the recent increase in the mobility between the different countries. In addition, all of these differences are but a few hours and a few hundred miles of one another.

Trying to find reliable rates that would show the differences between different countries in Europe, however, is difficult, as different sources show different numbers. Again, this highlights the problem that LaFree (1999) discussed when evaluating the problems of definitions of homicide across different countries and different statistics found in various homicide databases that are most often used for cross-national comparisons, especially the databases of Interpol or the World Health Organization.
To illustrate homicide rates in Europe, I have used figures provided by Leyton (1995) that are based on statistics from available countries reported in the 1993 World Health Statistics Annual. These figures, presented in Table 1, clearly show that despite the differences outlined above, the homicide rates within Europe are relatively small compared to those found in North and South America. However, within Europe itself, there are marked differences. More important, and the reason why I used these statistics as a basis for comparing the different rates, is that Leyton provides an interesting breakdown of victimization rates for males and females, which adds an additional dimension to what these differences mean within a country, as well as across nations. As Leyton states:

Note the international phenomenon that the lower a nation’s overall homicide rate, the closer the rates of male and female victimization. This appears to be because in low homicide nations, there are proportionally fewer stranger killings, and more provoked by the most intimate relationships such as spouses and lovers. (p. 23)

<table>
<thead>
<tr>
<th>Country</th>
<th>Males</th>
<th>Females</th>
</tr>
</thead>
<tbody>
<tr>
<td>United States</td>
<td>15.9</td>
<td>4.2</td>
</tr>
<tr>
<td>Italy</td>
<td>4.8</td>
<td>0.6</td>
</tr>
<tr>
<td>Scotland</td>
<td>4.7</td>
<td>0.9</td>
</tr>
<tr>
<td>Finland</td>
<td>4.6</td>
<td>2.4</td>
</tr>
<tr>
<td>Poland</td>
<td>4.5</td>
<td>1.4</td>
</tr>
<tr>
<td>Canada</td>
<td>2.9</td>
<td>1.6</td>
</tr>
<tr>
<td>Greece</td>
<td>2.0</td>
<td>0.9</td>
</tr>
<tr>
<td>Australia</td>
<td>1.9</td>
<td>1.3</td>
</tr>
<tr>
<td>Sweden</td>
<td>1.7</td>
<td>0.9</td>
</tr>
<tr>
<td>Switzerland</td>
<td>1.6</td>
<td>1.3</td>
</tr>
<tr>
<td>The Netherlands</td>
<td>1.6</td>
<td>0.8</td>
</tr>
<tr>
<td>France</td>
<td>1.5</td>
<td>0.7</td>
</tr>
<tr>
<td>Denmark</td>
<td>1.4</td>
<td>1.3</td>
</tr>
<tr>
<td>Germany</td>
<td>1.4</td>
<td>0.9</td>
</tr>
<tr>
<td>Spain</td>
<td>1.4</td>
<td>0.5</td>
</tr>
<tr>
<td>England and Wales</td>
<td>0.6</td>
<td>0.5</td>
</tr>
</tbody>
</table>

SOURCE: Adapted from Leyton (1995).
a. Included for purposes of comparison to European rates.
b. Countries with high levels of private firearm ownership.
c. Countries included in articles within this issue of Homicide Studies.
Because of their interest to a number of researchers in the United States, I have also included another aspect of Leyton’s figures by noting those countries he determined to have particularly high levels of private firearms ownership. Clearly, there is ample variation in these factors to be of interest to a number of researchers.

With Europe becoming more integrated, and with people in Europe starting to move more frequently across national boundaries, it becomes more important to establish a basis with which to understand the influences on trends of violent crime, including homicide, within the European continent. There is a need to develop our understanding of differences and similarities in national trends, to understand what causes these differences and similarities, and to predict the implications of these differences on the investigation of homicide and the prevention of violence and homicide. Out of this springs the impetus for a special issue of *Homicide Studies*.

**EUROPEAN STUDIES IN HOMICIDE**

This special issue is devoted to the topic “Homicide Research in Europe” and aims to give a flavor of some of the most current work that is being undertaken in Europe at present and how these efforts have endeavored to address some of the issues pertinent to research in Europe. It is, however, by no means an exhaustive representation of European research, nor of the European situation itself.

The first article in the issue, by Smit, Bijleveld, and van der Zee, highlights the problem of much of the homicide research in this field, and that is, namely, the lack of a thorough understanding, beyond mere national rates, of what actually constitutes homicide in the Netherlands. Based on 202 cases of homicide that occurred in 1998 that include both single and multiple victim and offender cases, the authors provide a demographic and descriptive examination of the nature of these cases.

The second article, by Harbort and Mokros, looks at a subset of homicide, notably, serial homicide, in examining 61 serial murderers who were convicted between 1945 and 1995 in the Federal Republic of Germany. This study specifically focuses on sociodemographic characteristics, family background, social integra-
tion, intellectual capability, and personality disorders among offenders. The issues of consistency and change in the offense behavior are also analyzed in terms of modus operandi and signatures.

The third article in the issue is by Salfati and Haratsis and examines the nature of Greek homicide through an analysis of 210 (solved and unsolved) cases. This study also aims to investigate whether homicide, committed and investigated within different national contexts, can be usefully compared as a first step toward standardizing systems for classifying homicide across countries.

In the fourth article, Santtila, Canter, Elfgren, and Häkkänen use evolutionary psychological models of the contexts and psychological models of mechanisms that trigger aggression. This provides a background for their analysis of 502 cases of homicide in Finland from 1980 through 1994.

It is my hope that this issue will help provide more knowledge of the nature of European homicide and also knowledge of the type of homicide research that is going on in Europe. As mentioned earlier, the topics covered here are by no means exhaustive and represent only a sample of the work that is currently underway in Europe. It would be a pleasure to see much more of this research—especially from countries not covered in this issue—appear in future editions of *Homicide Studies*.

**REFERENCES**


C. Gabrielle Salfati is a lecturer at the University of Liverpool in the United Kingdom and the course director for the master of science in forensic behavioral science. Her main areas of interest are homicide and violent crimes, particularly with reference to offender profiling, classifications of crime, and cross-cultural comparisons. She has presented widely both nationally and internationally on homicide crime-scene pattern analysis and has assisted the police in several homicide investigations.
Acknowledgment of
M. Dwayne Smith

This special issue on European studies of homicide, the last for Dwayne Smith as editor of *Homicide Studies*, was very much one that he encouraged and supported. His work has become a catalyst for what I hope to be the development of an important future research agenda in the area of homicide, and I would therefore like to dedicate this farewell issue to him.

C. Gabrielle Salfati
*University of Liverpool*
Homicide in the Netherlands
An Exploratory Study of the 1998 Cases

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Rechtshandhaving
Institute for the Study of Crime and Law Enforcement
SIMONE VAN DER ZEE
National Criminal Intelligence Service

There has been little systematic information presented about homicides in the Netherlands. To address this scarcity of literature, an exploratory, descriptive survey of all homicides in 1998 in the Netherlands is presented. Following the tradition of classic U.S. studies, characteristics of offenders, victims, and characteristics of homicide incidents are presented. After a description of the characteristics of the incident, the offender, and the victim, a number of relations between these characteristics are investigated. Suggestions are made for future research, especially complex analyses to determine more precise, and perhaps more meaningful, descriptions of homicide types.

Homicide is an offense that attracts, as in many other countries, much attention. However, unlike in countries such as the United States, relatively little scientific research has been devoted to homicide in the Netherlands. The research presented here seeks to expand that literature by providing a detailed look at the nature of homicide in the Netherlands for the year 1998.

AUTHORS’ NOTE: We thank Niels Uijee, Femke Heide, and Wieger van der Heide for collecting substantial parts of the data on which this article is based. We also thank Gerben Bruinsma, Henk van de Bunt, the editor of this volume, and two anonymous reviewers for their helpful comments.

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Homicide in the Netherlands: An Overview

Homicide, defined as the unjustifiable (i.e., not out of self-defense), intentional killing of another person, is covered in Articles 287 through 292 of the Netherlands penal code. Not covered in these articles are euthanasia, assistance to suicide, and abortion, any of which are considered crimes only in exceptional circumstances. Apart from trivial offenses, the clearance rate for homicide is the highest of all crimes; according to unpublished data by the Dutch Central Bureau of Statistics (also known as Statistics Netherlands), the rate has consistently hovered between 70% to 80%.

At least part of the reason for the lack of research on homicide in the Netherlands is the fact that the number of homicides on a yearly basis is relatively low. As shown in Table 1, since 1980, the number of homicides has, after an initial rise, fluctuated between 200 and 250 each year and has even receded slightly over the past 2 years.

Some researchers have suggested that the numbers of homicides in the Netherlands might be somewhat higher than shown in Table 1.

### Table 1

<table>
<thead>
<tr>
<th>Year</th>
<th>N</th>
<th>Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>1983</td>
<td>185</td>
<td>1.29</td>
</tr>
<tr>
<td>1984</td>
<td>172</td>
<td>1.19</td>
</tr>
<tr>
<td>1985</td>
<td>151</td>
<td>1.04</td>
</tr>
<tr>
<td>1986</td>
<td>174</td>
<td>1.20</td>
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<tr>
<td>1987</td>
<td>164</td>
<td>1.12</td>
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<tr>
<td>1988</td>
<td>261</td>
<td>1.77</td>
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<tr>
<td>1989</td>
<td>254</td>
<td>1.72</td>
</tr>
<tr>
<td>1990</td>
<td>230</td>
<td>1.54</td>
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<tr>
<td>1991</td>
<td>217</td>
<td>1.45</td>
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<tr>
<td>1992</td>
<td>267</td>
<td>1.76</td>
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<td>1993</td>
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<td>1.74</td>
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<td>1994</td>
<td>235</td>
<td>1.53</td>
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<td>1995</td>
<td>273</td>
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<tr>
<td>1996</td>
<td>244</td>
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<td>1997</td>
<td>276</td>
<td>1.77</td>
</tr>
<tr>
<td>1998</td>
<td>225</td>
<td>1.44</td>
</tr>
<tr>
<td>1999</td>
<td>231</td>
<td>1.47</td>
</tr>
</tbody>
</table>

in official statistics. For instance, a number of people reported missing may actually have been murdered, although the total number of missing-person cases not cleared after 1 year is only 10 to 15. Even in the unlikely case that all these are in fact homicides, they would entail only 5% to 7% of all cases (van den Eshof, Pieterse, Prins, Schouten, & Tromp, 1996). Some missing active criminals, as well as illegal immigrants, are believed to remain unreported as homicides and may also constitute a small number of undetected homicides. In addition, a Dutch pathologist has stated that a number of unnatural deaths (e.g., suicides and accidents) yearly may result from homicides but may not be classified as such (Torenbeek, 1999); there is, of course, no reliable way to validate this speculation. Still, even with these possible additions, the number of homicides in the Netherlands is relatively low.

However, based on 1998 data, the Netherlands occupies a middle position in terms of homicide rates. Countries like the United States, Belgium, Sweden, Finland, Greece, and Canada have higher rates of homicide per capita, but Germany, Great Britain, Ireland, Denmark, Norway, and Japan have lower rates (Smit, 2001). It should be noted that of all these countries, the United States occupies an extreme position.

Previous Studies of Dutch Homicide

As mentioned above, the literature on homicides in the Netherlands is sparse, although Statistics Netherlands irregularly publishes statistics on homicides. The few studies that have been conducted have focused mainly on trends and on deciphering different types of homicides. For instance, Spierenburg (1993a, 1993b) investigated long-term trends in homicide, starting in the 17th century, for the city of Amsterdam. He found slowly decreasing homicide rates over the centuries and theorized that, as in other countries (e.g., England), the decrease reflected a change in mentality regarding violence. Descriptive studies have been published by van den Berg (1998), who reported on homicides as one of several categories of unnatural deaths, and Eggen (2000), who provided a brief overview of homicides from 1996 to 1998.

Van den Eshof and Weimar (1991) have published a more complex study by analyzing the trend in Dutch homicides over the period 1983 to 1989, and they concluded that homicide figures did
not rise over this period. They also compared the Dutch statistics with other countries such as West Germany and England for this same period. Their conclusion was that many characteristics of homicides are roughly the same for these countries. A notable exception was the number of homicides where a gun was used in England: The figure was considerably lower than in the Netherlands.

Following the van den Eshof and Weimar (1991) publication, Berghuis and de Jonge (1993) showed that homicide figures rose between 1989 and 1992, mainly due to an increase in homicides connected with other criminal activities. Their conclusions did not stem from figures published by Statistics Netherlands but emerged after the authors made various corrections to the existing data.

In other studies, van Eck (1997) investigated cases of homicide for family honor among Turkish migrants in the Netherlands. Also, Kleemans, van den Berg, and van den Bunt (1998), and later van de Port (2001), concluded from their work that it is virtually impossible to classify Dutch homicides into homogeneous and distinct groupings. Both studies report considerable variability within fairly well delineated categories of homicide, as well as much uncertainty in classification between these categories.

All in all, relatively little information is available in the Netherlands about the capital offense of homicide. There is sparse data available regarding such aspects of homicide as the relationship between offender and victim, the setting in which the homicide occurred, the extent to which drugs were involved, the kind of weapons used, and whether there are distinct forms of modus operandi.

Unquestionably, a contributing factor to this lack of information is that it is not easy to extract homicide data from the available judicial databases. In these databases, information is mostly aggregated, usually as “life crimes,” a much wider category. One possible source of information is the homicide database maintained by the Korps Landelijke Politiediensten (KLPD), or National Police Agency, a central service and expertise agency within the Netherlands police. However, because this database is maintained for operational purposes, not all of the stored information is updated or validated on a systematic basis, which makes it less useful for research purposes. Another source is the Violent Crime
Linkage Analysis System database (ViCLAS), which is also used by the National Police Agency. This contains information on selected homicide cases that appear to have been committed due to a bizarre, sexual, or psychotic motive.

To extract reliable and valid information on all homicide cases, it is necessary to go back to the police and court records for every event. Court records have the advantage that the available information has been validated; police records have the advantage that they also contain information on unsolved homicides. Unfortunately, this requires a fairly painstaking research effort because neither police records nor court records are stored centrally but rather in different regional jurisdictions.

Aims of the Present Research

The aim of the research presented here is to expand the existing literature on homicide in the Netherlands. To achieve this, findings from a recent study of all homicides committed in 1998 in the Netherlands will be discussed. The research involved collecting data from police records, court records, newspaper clippings, and interview data collected from all involved police teams.

This article does not reflect one single theoretical perspective, nor does it attempt to test a specific theory on homicide. Instead, the framework is primarily descriptive: Much in the tradition of the classic work by Wolfgang (1958), we report on a variety of homicide characteristics that are considered relevant to various theoretical perspectives. In addition, information on the manner in which cases were solved and offenders sentenced will be presented.

DATA COLLECTION

Legal Considerations

Three official institutions deal with homicide cases in the Netherlands: the police, the prosecution authorities, and the courts. These agencies do not always agree on the labeling of a case. For example, a case that is initially labeled a homicide can be scaled down in the verdict by a judge to be an “assault leading to death.”
Or, as was encountered in three cases in 1998, the offender was prosecuted for nonnegligent manslaughter despite the police regarding the case as drunken driving. Hence, a traffic accident victim became a homicide victim.

Recognizing this, we employed a multistep approach to our data collection. Whenever a court decision ruled the incident a homicide, it was included in the sample. However, if only homicides with a court decision were collected, a number of cases would have been lost because some decisions were still pending. For those cases, the label assigned by the prosecutor’s office was taken. Last, we found some cases that had not yet reached the prosecutor’s office. This may happen when the offender himself has been killed or, more likely, when the case is unsolved so that no offender has been identified. For those cases, police data were used.

Sources of Data

Five different sources were used to collect and verify the data on homicide in the Netherlands in 1998. The starting source was the above-mentioned homicide database constructed by the KLPD. The data in this source was then validated and extended by using various other sources. The second source, therefore, was the ViCLAS database, in which approximately 50% of all homicides are entered. A third source consisted of 350 newspaper clippings collected from all regional and national daily newspapers in 1998. Although we approached their reliability with caution, these clippings had considerable background information about the cases that proved to be useful, especially for checking against information in the police databases. The fourth source, one we found to provide very valuable information, consisted of interviews with the police officers responsible for the investigations. About 230 interviews were conducted, giving us considerable quantitative and qualitative information about the homicides. Thanks to these interviews, many corrections were made in the information provided by the police databases. The last source used was the OMdata database from the prosecutor’s office, one that contains all prosecution and court decisions. In addition to its use in determining whether a conviction had been secured, this database was used to check the data on offenders.
Given legal definitions in the Netherlands, and given the scope of the study, only completed homicides are part of the sample; incidents ruled as manslaughter committed in self-defense were excluded. However, two very young boys who had killed an even younger child were included as offenders even though they could not by law be prosecuted.

It should be noted that the term offender used throughout this study is not used in a strictly legal sense and is comparable to its American use in arrest data to describe offenders. Whenever the police identified someone as an offender, he or she was treated as the offender in the case. Strictly speaking, some of these persons are still only defendants as no judge has yet proclaimed them guilty. However, we did exclude from the offender database those defendants who had been ruled not guilty in court.

These five sources resulted in a database with substantial information on all homicides that occurred in 1998 in the Netherlands. A more detailed report on this database can be found in Smit, van der Zee, Heide, and van der Heide (in press).²

Variables

Messner and Rosenfeld (1999) have identified four major correlates of homicide that were incorporated into this study’s data collection. These are age, gender, race, and social class. Therefore, information concerning age, gender, and socioeconomic (defined here as employment) status were included in the analyses. Instead of race, which is not a characteristic measured by the police in the Netherlands, ethnicity was included. Ethnicity is important not only because it correlates with socioeconomic status and economic deprivation (Parker, 1989) but also because of the link with social disorganization through immigration (see Wilson, 1987). In addition, cultural differences regarding the role of violence may influence homicide involvement (Wolfgang & Ferracuti, 1967; for an overview, see Corzine, Huff-Corzine, & Whitt, 1999). As a note, about 17% of the population in the Netherlands is considered nonethnic Dutch. Almost all of these are first- or second-generation immigrants, mostly from Surinam and the Netherlands Antilles, Africa, Turkey, or Eastern Europe.

In addition, we attempted to decipher the role of alcohol and drugs for victims and offenders alike. From work by Goldstein,
Brownstein, and Ryan (1992), Parker (1993), and Parker and Rebhun (1995), it can be inferred that alcohol and drugs are important not only for understanding dynamics of the homicide incident but also for the classification of the homicide. In addition, drug addiction and alcohol addiction are relevant indicators of social integration (or disintegration), socioeconomic status, and family problems and similar situational precursors to the event.

Finally, an important aspect of the homicide event is the relation between offender and victim, one that has received much attention in other literature (for an overview, see Flewelling & Williams, 1999). Consequently, an effort was made to determine the nature of the relationship between the offender and the victim prior to the homicide incident. In line with classifications adopted by other researchers (Flewelling & Williams), but restricted by the way police in the Netherlands register homicides, a general and pragmatic way of classifying homicides was developed. Two main dimensions were used to classify homicides: the motive of the offender and the relation between offender and victim.

The motive of the offender had four main categories: criminal background, where the homicide is related to criminal activities in which offender and victim are involved; sexual; robbery, where the basic motivation of the offender is to steal property from the victim; and dispute, a broad category that revolved around arguments over a number of issues. Where a homicide conceivably fell into more than one category, it was assigned to the category judged to be the primary motive.

If a homicide was classified in the category of criminal background, a further division into three subcategories was made: liquidation, meaning a planned killing between criminals; drug related, for example, when a drug dealer is killed by a customer in a dispute; and criminal, other, when neither of the previous applied. In the case of the category of dispute, a further classification into three subcategories based on the relation between offender and victim was made. These three categories are intimate (usually family), acquaintances, and strangers.

Homicides that could not be classified in the four main categories were divided into the following three categories: other, with another motive than the aforementioned; psychotic, a seemingly random act with a bizarre or unclear motive; and unknown, when there was not enough information available to confidently classify the homicide into one of the existing categories.
FINDINGS

General Characteristics of the Homicides

Our data collection revealed that during 1998, 202 homicide incidents, claiming a total of 225 victims, occurred in the Netherlands. These incidents involved 230 offenders, only one of whom was involved in two homicide incidents. For 176 of the victims (in 155 homicide incidents), at least one offender was identified, yielding a clearance rate of 78% (77% clearance of homicide incidents). (Note that in the Netherlands, a case is considered cleared when a suspect has been identified; an arrest is not required for a case to be declared as cleared.)

Also revealed was that the majority \( n = 166; 82\% \) of homicide events were a single-victim incident. The remaining 36 incidents had more than one victim, more than one offender, or both. Thus, apart from two cases in which a father killed his entire nuclear family, mass murders, serial killings, and group murders were not a part of 1998 homicides in the Netherlands.

The information shown in Table 2 provides a summary of some characteristics of homicides in the Netherlands in 1998. Regarding method of death, it was found that 40% of the victims in 1998 were killed by a gun, 27% by a knife, and 33% by other means, including strangling, hitting, and drowning. When comparing these figures with data from previous years, there appears to be an increase in the percentage of gun killings from 32% in 1989 (van den Eshof & Weimar, 1991). One possible explanation for this is that the number of criminal background murders may have risen, in which guns are used by 80% of the offenders. However, also in the intimate homicide type, where one might expect other methods of choice, about 30% of the killings were carried out with a gun.

Also shown in Table 2 is that just more than half (53%) of all the homicides were committed inside a house. Thirty-one percent occurred in some public domain, whereas 10% took place in an outdoors setting (e.g., in water or in the woods). The place of occurrence could not be determined for 6% of the cases.

Table 2 also presents the distribution of the various ways a homicide was discovered. In 12% of cases, the offender himself reported the homicide to the police, a pattern found mainly
among intimate homicides. Family and friends of the deceased reported the incident to the police in another 13% of cases. However, the most usual (30%) means by which the homicide came to the attention of the police was through witnesses to the incident and by tips from citizens. In a slightly smaller number of cases (28%), the body was discovered, and the police notified. The police themselves discovered the homicide in 2% of cases (e.g., while a defendant was being interrogated for another crime). It is interesting that in 14% of the cases, we could not determine how the police had found out about the homicide.

Once police became aware of a homicide, it was usually solved within a fairly short time. For homicides solved (an offender identified) in 1998 ($n = 155$), 50% were solved the day of the homicide itself, 75% had been solved within a week, and 87% within a month.

Results of our categorizing types of homicides are shown in Table 3; percentages are calculated from the total number of victims ($N = 225$). Nearly a third (32%) of these homicides were found

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Method of death</td>
<td></td>
</tr>
<tr>
<td>Gunshot</td>
<td>40</td>
</tr>
<tr>
<td>Stabbing</td>
<td>27</td>
</tr>
<tr>
<td>Other</td>
<td>33</td>
</tr>
<tr>
<td>Place homicide occurred</td>
<td></td>
</tr>
<tr>
<td>House</td>
<td>53</td>
</tr>
<tr>
<td>Public domain</td>
<td>31</td>
</tr>
<tr>
<td>Outside location</td>
<td>10</td>
</tr>
<tr>
<td>Other</td>
<td>6</td>
</tr>
<tr>
<td>How homicide came to police attention</td>
<td></td>
</tr>
<tr>
<td>Reported by offender</td>
<td>12</td>
</tr>
<tr>
<td>Reported by family or friends</td>
<td>13</td>
</tr>
<tr>
<td>Reported by witnesses and tips</td>
<td>30</td>
</tr>
<tr>
<td>Discovery of body</td>
<td>28</td>
</tr>
<tr>
<td>Discovery by police</td>
<td>2</td>
</tr>
<tr>
<td>Unknown</td>
<td>14</td>
</tr>
</tbody>
</table>

NOTE: Percentages are rounded to the nearest whole number; therefore, total percentages may not equal 100.

a. Includes strangulation, use of blunt object, and drowning.
to be disputes involving intimates, whereas disputes involving acquaintances accounted for another 15%. Homicides committed in the course of criminal activity were found to characterize 21% of the incidents, whereas the information for 10% of the cases was not sufficient to allow for a clear-cut assignment to a specific category, resulting in a classification of “unknown.” A particularly interesting point is that the homicides generally receiving the most publicity in the Netherlands, sexual and dispute between strangers, each constituted only 4% of the total. Even with psychotic homicides included, those homicide events that dominate the news accounted for only 10% of Dutch homicides in 1998.

**Characteristics of Offenders and Victims**

A composite of offender (n = 230) and victim (n = 225) characteristics is shown in Table 4. The data show that 58% of all offenders (63% of offenders whose ethnicity was determined) were identified as not ethnically Dutch. However, victims were divided almost equally between Dutch and non-Dutch persons. In both cases, there is a considerable overrepresentation of involvement by those of non-Dutch background who, as mentioned earlier, are about 17% of the population of the Netherlands.

<table>
<thead>
<tr>
<th>Type</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Criminal</td>
<td></td>
</tr>
<tr>
<td>Liquidation</td>
<td>9</td>
</tr>
<tr>
<td>Drug related</td>
<td>8</td>
</tr>
<tr>
<td>Other</td>
<td>4</td>
</tr>
<tr>
<td>Dispute</td>
<td></td>
</tr>
<tr>
<td>Intimates</td>
<td>32</td>
</tr>
<tr>
<td>Acquaintances</td>
<td>15</td>
</tr>
<tr>
<td>Strangers</td>
<td>4</td>
</tr>
<tr>
<td>Robbery</td>
<td>10</td>
</tr>
<tr>
<td>Sexual</td>
<td>4</td>
</tr>
<tr>
<td>Other</td>
<td>2</td>
</tr>
<tr>
<td>Psychotic</td>
<td>2</td>
</tr>
<tr>
<td>Unknown</td>
<td>10</td>
</tr>
</tbody>
</table>

NOTE: Even in some cases where offenders were not identified, it was possible to assign an apparent type of homicide. Percentages are rounded to the nearest whole number; therefore, total percentages may not equal 100.
### TABLE 4
Selected Characteristics of Offenders and Victims

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Offenders</th>
<th></th>
<th>%&lt;sup&gt;a&lt;/sup&gt;</th>
<th></th>
<th>%&lt;sup&gt;b&lt;/sup&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Ethnicity</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dutch</td>
<td>133</td>
<td></td>
<td>58</td>
<td></td>
<td>108</td>
</tr>
<tr>
<td>Non-Dutch</td>
<td>79</td>
<td></td>
<td>34</td>
<td></td>
<td>109</td>
</tr>
<tr>
<td>Unknown</td>
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<td></td>
<td>8</td>
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<td>8</td>
</tr>
<tr>
<td><strong>Age</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Males</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>&lt; 14</td>
<td>2</td>
<td></td>
<td>1</td>
<td></td>
<td>10</td>
</tr>
<tr>
<td>15-19</td>
<td>10</td>
<td></td>
<td>4</td>
<td></td>
<td>7</td>
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<td>20-24</td>
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<td>17</td>
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<td>16</td>
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<td>40-44</td>
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<td>7</td>
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<td>14</td>
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<tr>
<td>45-49</td>
<td>10</td>
<td></td>
<td>4</td>
<td></td>
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<tr>
<td>50-59</td>
<td>8</td>
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<td>3</td>
<td></td>
<td>14</td>
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<tr>
<td>≥ 60</td>
<td>7</td>
<td></td>
<td>3</td>
<td></td>
<td>9</td>
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<td>210</td>
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<td>166</td>
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<tr>
<td>Females</td>
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<td></td>
</tr>
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<td></td>
<td>0</td>
<td></td>
<td>7</td>
</tr>
<tr>
<td>15-19</td>
<td>1</td>
<td></td>
<td>1</td>
<td></td>
<td>4</td>
</tr>
<tr>
<td>20-24</td>
<td>4</td>
<td></td>
<td>2</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>25-29</td>
<td>7</td>
<td></td>
<td>3</td>
<td></td>
<td>9</td>
</tr>
<tr>
<td>30-34</td>
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<td></td>
<td>6</td>
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<td>35-39</td>
<td>4</td>
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<td>2</td>
<td></td>
<td>8</td>
</tr>
<tr>
<td>40-44</td>
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<td></td>
<td>5</td>
</tr>
<tr>
<td>45-49</td>
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<td></td>
<td>0</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>50-59</td>
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<td></td>
<td>0</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>≥ 60</td>
<td>0</td>
<td></td>
<td>0</td>
<td></td>
<td>13</td>
</tr>
<tr>
<td>Unknown</td>
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<td></td>
<td>0</td>
<td></td>
<td>0</td>
</tr>
<tr>
<td>Total</td>
<td>20</td>
<td></td>
<td>9</td>
<td></td>
<td>59</td>
</tr>
<tr>
<td><strong>Employment status</strong></td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Employed, student, or homemaker</td>
<td>63</td>
<td>27</td>
<td>80</td>
<td>36</td>
<td></td>
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<tr>
<td>Unemployed</td>
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<td>28</td>
<td>37</td>
<td>16</td>
<td></td>
</tr>
<tr>
<td>Pensioner</td>
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<td>3</td>
<td>14</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>Criminally active</td>
<td>42</td>
<td>18</td>
<td>31</td>
<td>14</td>
<td></td>
</tr>
<tr>
<td>Other or unknown</td>
<td>53</td>
<td>23</td>
<td>63</td>
<td>28</td>
<td></td>
</tr>
<tr>
<td><strong>Criminal record</strong></td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>100</td>
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<tr>
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<td>42</td>
<td>18</td>
<td>86</td>
<td>38</td>
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<tr>
<td>Unknown</td>
<td>88</td>
<td>38</td>
<td>103</td>
<td>46</td>
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<tr>
<td><strong>Alcohol or drug involvement</strong></td>
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<td></td>
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<tr>
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<td>5</td>
<td></td>
</tr>
<tr>
<td>Alcohol intoxicated</td>
<td>44</td>
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<tr>
<td>Drug addicted</td>
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<td>7</td>
<td></td>
</tr>
<tr>
<td>Drug intoxicated</td>
<td>14</td>
<td>6</td>
<td>9</td>
<td>4</td>
<td></td>
</tr>
</tbody>
</table>

**NOTE:** Percentages are rounded to the nearest whole number; therefore, total percentages may not equal 100.

- <sup>a</sup> Percentages calculated as percentage of total known offenders (n = 230).
- <sup>b</sup> Percentages calculated as percentage of all victims (n = 225).
Sex and age information is also shown in Table 4. Not surprising, given the existing homicide literature, the majority of known offenders were male (91%) and concentrated in the 20- to 34-year-old age span (combined, 57% of offenders). Only 9% of offenders were female, but a substantially higher percentage (26%) were victims. Although 20- to 34-year-old males were a large percentage of victims (31%), it can be seen that the overall sex and age structure of homicide victimization was not as concentrated as it was for offenders.

Table 4 also shows that 17 children (10 boys, 7 girls) under the age of 15 fell victim to homicide in 1998. Thirteen children had been killed by their father, mother, or, in one case, by a stepfather (that only one case would involve a stepparent is different from what would be suggested by theorists such as Daly & Wilson, 1996). One child had been killed by a family friend. The oldest victims were likely to be the victims of homicides involving robberies. Among the oldest group, it was notable that the 6 female victims had an average age of 77 years.

In terms of lifestyle, largely related to socioeconomic status, a substantial number of offenders were unemployed (28%) or were known to be engaging in some form of criminal activity (18%; e.g., drug dealing) at the time of their offense. Some type of mainstream activity (employment, being a student, homemaking) was indicated for 27% of offenders. For victims, the largest percentage (36%) were found to be employed (or students, homemakers, etc.). For both groups, however, the activities of substantial numbers of both offenders (23%) and victims (28%) could not be determined.

Another indicator of lifestyle proved to be revealing but still leaves unanswered questions. Forty-three percent of offenders were determined to have a criminal record, although the criminal background of 38% could not be established. Only 16% of victims were found to have a criminal record, although criminal record status could be validated for just under half (46%) of the victims. One can only speculate as to how these results might change if full records were available for all offenders and victims, but it is quite plausible that a majority of offenders and a lesser, though substantial, portion of victims would be discovered to have criminal activity in their backgrounds.
Another lifestyle indicator is that of involvement with drugs, alcohol, or both. As shown in Table 4, the evidence indicated that 26% of offenders were chemically addicted, mostly to drugs. Roughly the same percentage of offenders (25%) were said to be intoxicated at the time of their offense; although the addicted and intoxicated groups overlap, they are not one and the same. In addition, 12% of the victim were thought to be addicts, whereas 19% were said to be intoxicated at the time of their death.

**Offender-Victim Relationships**

In Table 5, we list the percentage of various relationships between offender and victim that could be determined from solved (offender-identified) cases. In line with the existing homicide literature, the dominant category was that of friend or acquaintance (47%). Combining partners and spouses (current and ex-) accounts for another 18%, with children, parents, and other relatives characterizing 14% of victim-offender relationships. Stranger relationships were found for only 12% of the homicides, whereas 8% of the homicides involved those with a drug dealer–client relationship.

Not shown in this table is that 60% of the homicides with a criminal context (liquidation, robbery, etc.) involved an offender and victim with a prior acquaintance. Similarly, 7 of the 9 victims of a sexual homicide in 1998 were killed by someone with whom they had a prior acquaintance.

<table>
<thead>
<tr>
<th>Relationship</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Friend or acquaintance</td>
<td>47</td>
</tr>
<tr>
<td>Partner or spouse</td>
<td>12</td>
</tr>
<tr>
<td>Stranger</td>
<td>12</td>
</tr>
<tr>
<td>Parent of victim</td>
<td>8</td>
</tr>
<tr>
<td>Ex-partner or ex-spouse</td>
<td>6</td>
</tr>
<tr>
<td>Other relative</td>
<td>4</td>
</tr>
<tr>
<td>Drug dealer who kills client</td>
<td>4</td>
</tr>
<tr>
<td>Client who kills drug dealer</td>
<td>4</td>
</tr>
<tr>
<td>Child of victim</td>
<td>2</td>
</tr>
</tbody>
</table>

**Table 5**

Relationships Between Offender and Victim

NOTE: Percentages are calculated on the basis of 250 known relationships between offenders and victims that were identified in the 202 solved cases. Percentages are rounded to the nearest whole number; therefore, total percentages may not equal 100.
Legal Outcomes

Finally, we provide some information on legal outcomes of these homicide cases. Overall, 51% of offenders confessed to their crimes when apprehended. However, there were distinct differences between ethnic Dutch and non-Dutch offenders in this regard. Whereas 63% of ethnically Dutch offenders confessed, only 45% of non-Dutch offenders were willing to do so. Regardless of ethnicity, offenders in intimate dispute cases were most likely to confess, whereas those involved in criminal activity related to the homicide were least likely.

When completed, our data indicated that a total of 168 offenders had been sentenced to incarceration. There were various reasons why the remaining 62 offenders were not incarcerated, ranging from suicide to being under the minimum age for prosecution to their cases not yet being decided.

For the 168 offenders who were imprisoned, the average sentence length was 83 months. However, only 13 of the 168 received a sentence of 12 years or longer. A much more typical sentence was between 4 and 10 years.

SUMMARY AND DISCUSSION

This study did not attempt to be theoretical but rather to describe and explore the data. Summarizing some of the major findings, it was found that, in line with previous studies in the Netherlands, as well as a large body of literature from the United States, a large proportion of the 1998 homicides involved one victim and one offender, and many of the homicides occurred between intimates, in the context of a dispute, or both. Women constituted a small proportion of offenders but a larger proportion of victims. Ethnicity was prominent in that 58% of offenders for whom ethnicity was known were not of ethnically Dutch descent, a large overrepresentation relative to the proportion of non-ethnic Dutch in the population. In addition, alcohol and drugs were found to play a prominent role either as a precursor or background characteristic of the offender or during the event. Offenders, more so than victims, were likely to be outside of mainstream participation in the larger society, especially through their
unemployment or participation in criminal activity preceding their involvement in homicide.

It is hoped that the kind of study reported here will be conducted regularly for homicides in the Netherlands. When more waves of data used in the present study become available, it will be possible to conduct further in-depth studies of trends and to learn more about relatively less frequent types of homicides.

One of the challenges of such a monitor-like study is, however, the need to obtain a stable operational definition of the variables of interest over the years. This is especially true for homicide typologies, a promising area that we believe is in need of further research. In the past, homicide typologies were often derived in advance, and homicides were categorized accordingly. In future research, we intend to engage in empirical analyses of the structure of homicides and to derive categories from the results. A cluster analysis on the data may yield the same structure to homicide but could result in a regrouping of homicides into different and more (or fewer) types. Other studies that add to the work reported here, and that explore such new terrain as suggested above, will further enhance our understanding of the dynamics of homicide in the Netherlands, and possibly in other countries as well.

NOTES

1. The Dutch language does not have one word like the English homicide. Homicide encompasses two acts, premeditated murder and nonnegligent manslaughter.

2. In addition to using the database for the present research, we plan to use it for further in-depth studies in collaboration with universities in the Netherlands. The database should be updated annually, during which time information will be added for unsolved cases from previous years. We hope to provide biannual analyses of trends.

3. It turned out to be impossible in the OMdata database to determine whether a homicide offender had been sentenced for murder or for nonnegligent manslaughter. However, we determined that about half of the offenders were prosecuted for the more serious charge of murder.

4. In interpreting this finding, it should be noted that temporary residents, many of whom are of non-Dutch ethnicity, are not included in the population denominator when calculating their representation. Therefore, the overrepresentation of the non-Dutch may be somewhat exaggerated because their base population is larger than shown in available population figures.

5. Because of space considerations, we were not able to include in this article an analysis of the structure of the homicides in our data set. Our preliminary analyses indicate that the cases tend to be structured in an interpretable manner that accommodates the
classifications we used. However, the analyses also indicate alternative structuring so that
homicide types do not constitute distinct groups but instead rank along a circular contin-
umum. We intend to further pursue that line research and expand and elaborate on those
findings.

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Serial Murderers in Germany
From 1945 to 1995
A Descriptive Study

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The total number of serial murderers who were convicted between 1945 and 1995 in the Federal Republic of Germany (N = 61) are described in terms of their characteristics, with reference to sociodemographics, family background, social integration, intellectual capability, and personality disorders. A comparison with a larger sample of German single murderers from a previous study shows that the serial perpetrators appear to constitute a particular class of homicide offenders. In particular, the serial murderers have a higher likelihood of personality disorder, cerebral anomalies, and offense premeditation and are more likely to have had no relationship with the victim prior to the offense. With respect to differentiation among serial murderers, differences become apparent between serial murderers whose offenses have a strong sexual component (n = 22) and the remainder of the sample. Finally, the limited capacity of modus operandi and signature for linking cases in ongoing investigations is discussed.

In 1950, the German forensic expert Barnstorf wrote about the serienmörder (serial murderer) Rudolf Pleil. In addition, Ernst Gennat, then chief of the homicide department in the police headquarters of Berlin, used the term as early as 1930 with reference to the “Düsseldorf Ripper,” Peter Kürten (Gennat, 1930). However, despite the term serial murderer being used for a long time, its exact meaning is not completely clear, especially for purposes of research.

AUTHORS’ NOTE: Parts of this research have been discussed in German language publications. For additional information, see Harbort (1999a; 1999b).
Terminological Issues in Studying Serial Murder

Regarding definitions of the terms serial murderer or serial murderer, many authors have striven for terminological clarity and parsimony, unfortunately, without great success (Egger, 1990; Greswell & Hollin, 1994; Hickey, 1997; Jenkins, 1988; Keeney & Heide, 1995; Kelleher & Kelleher, 1998). On the contrary, there is a lively controversy as to which are the defining criteria of a serial murderer. It is unclear, for example, how many killings constitute a series. The spectrum of opinions ranges from including all those who have “[committed] a second murder and/or subsequent murder” (Egger, 1984, p. 348) to denoting only “those who kill others in 10 or more separate incidents” (P. Dietz, 1986, p. 483; see also M. Dietz, 1996; Jenkins, 1989; O’Reilly-Fleming, 1992; Prentky et al., 1989; Stote & Standing, 1995).

In addition, the serial murderer is assumed to be “a single perpetrator” (Warren, Hazelwood, & Dietz, 1996, p. 79). However, occasionally, teams of murderers (“one or more individuals,” Egger, 1984, p. 348) are subsumed under the definition as well (see also Geberth & Turco, 1997).

There is further dissent concerning the locations of the killings. In some definitions, the murders have to be “committed in a different geographic location” (Egger, 1984, p. 348; see also M. Dietz, 1996), whereas others demand that the murders occur “within the same area” (Leibman, 1989, p. 41).

Similarly, the time span that has to elapse between homicides is defined differently. Some argue for “more than hours” (Rappaport, 1988, p. 42), others insist that the period be “as minimal as two days” (Busch & Cavanaugh, 1986, p. 6; Geberth, 1986, p. 492) or the homicides occur “over a greater period of time than seventy-two hours” (Jenkins, 1994, p. 23). Other researchers have broadened the interval and defined serial murder “as a chain or sequence of killings spanning a few days, weeks, months, or years” (Hickey, 1986, p. 73) or simply as a series of homicides happening “over a period of time” (Holmes & DeBurger, 1985, p. 30; Skrapec, 1996, p. 158).

Another point of controversy is the motivational background for the crimes. On one hand, they should happen “without rational motive” (Jenkins, 1989, p. 381) or be “seemingly motiveless” (Norris, 1989, p. 15; see also M. Dietz, 1996), whereas on the other hand, only sexually motivated killings are included (Brown, 1991;
DeHart & Mahoney, 1994). A third option is that a case should be excluded if “the offender acted primarily out of political motives or in quest of financial profit” (Jenkins, 1994, p. 23; see also Giannangelo, 1996). There is, however, one area of agreement: that the time immediately after the offense is characterized by an emotional “cooling-off period” (DeHart & Mahoney, p. 30; Geberth, 1986, p. 492).

In some countries, the term serial murderer has found its way into the legal system. Within a special clause on the death penalty in the state of New York in the United States, for example, capital punishment may be applied to those who killed “three or more people within two years according to the same pattern or a preconceived plan” (“New York,” 1999).

The most often cited definition of serial murder was contributed by Ressler and his colleagues (Ressler, Burgess, & Douglas, 1988) from the Federal Bureau of Investigation’s (FBI’s) Behavioral Science Unit. They define serial murder as “three or more separate events with an emotional cooling-off period between homicides, each murder taking place at a different location” (p. 139).

This definition, however, opens up more questions than it answers. Which forms of homicide are meant by “events”? Would one attempted and two completed murders or three attempted murders be sufficient to qualify as a series of murders within this framework? Why would the murders have to be committed at different locations? How are such crimes to be separated temporally? Which kinds of homicidal incidents (i.e., alone vs. with an accomplice) are permissible within this definition? Can a mentally handicapped or disturbed perpetrator, who is incapable of comprehending his guilt, be referred to as a serial murderer? Moreover, referring to an area of agreement among researchers, what exactly is meant by “emotional cooling-off”? How could such a state be verified? Hence, for all of its utility, one of the most commonly cited definitions of serial murder leaves much room for debate.

Due to these shortcomings, we have adopted a definition of the serial murderer that informs the present research: The fully or partially culpable perpetrator commits alone or with accomplice(s) at least three completed murders, each of which have to be premeditated and characterized through a new, hostile intent. This definition assumes that the perpetrator has to be at least partially culpable because a
severe mental disorder or disturbance would not render him accountable for his deeds. (By virtue of this criterion, one perpetrator suffering from a severe hallucinatory schizophrenic psychosis was excluded from the sample for the present study.) In addition, the crimes have to be committed either alone or with an accomplice or accomplices so that indirect perpetrators, instigators, and assistants can be differentiated. Apart from that, at least three murders should have been committed to fulfill the prerequisite of a series. Webster’s Dictionary defines the term series as “a group of usually three or more things or events standing or succeeding in order and having a like relationship to each other” (Gove et al., 1971, p. 2073).

A further characteristic of this definition is that the necessary differentiation into separate crimes is not achieved through a temporal component but with respect to the specific intent. In this way, serial murderers can be distinguished from so-called mass or spree killers. Of particular importance in this regard is the assertion that the series of murders consists of at least three homicides that can be judged as intentional or premeditated. Hence, not only those individuals who fulfill the (more severely punishable) criteria for first-degree murder can be deemed serial murderers but also those who commit acts of intentional manslaughter. This allows the exclusion of cases of serial homicide where the death of the victim was caused accidentally or through negligence, for example, in conjunction with robbery or rape. Furthermore, this definition seems indispensable to distinguish other forms of intentional homicide, such as serial killing of patients on their request that are not compatible with the criterion of hostility.

The Scope of the Problem

Prevalence

The inspection of various German print media over the last 5 years reveals reports of approximately 212 serial murderers that have presumably killed more than 2,400 victims worldwide. According to estimates published in the literature, the prevalence of serial murder has (arguably) increased considerably in the United States as well as in Eastern European states in the last decades (Gilbert, 1983; Godwin, 1978; Hewitt, 1988; Jenkins, 1991;
Lester, 1995; Stote & Standing, 1995; Zahn, 1980). It is, however, not feasible at present to make really reliable statements on the actual frequency of this type of violent crime. To date, there are only a few official statistics that explicitly address the category of serial homicide (Copeland, 1989; Geberth & Turco, 1997). The other estimates are difficult to compare due to incompatibilities in definition or terminology.

In the Federal Republic of Germany, 54 men and 7 women were convicted as serial murderers (i.e., fulfilling the criteria of the above definition) within the period from 1945 to 1995. According to our own research, apart from these, there are at least 21 series of homicides (79 individual offenses) that could not be solved. This was established by the first author through direct contact or correspondence with police officers or through analysis of investigation files. In these cases, the police treated the individual cases as parts of a series but were unable to identify the perpetrator. This yields an estimated total of 82 serial murderers, to whom the police attributed a total of 453 homicides. An additional 12 suspects could be identified between January 1996 and April 2000 who are deemed responsible for at least 50 killings.

These figures, however, do not reflect the true magnitude of the phenomenon. Another 19 individuals were under strong suspicion of having killed three or more victims but could only be convicted for two homicides. Moreover, one should not overlook a further 89 perpetrators who were convicted of double sexual or robbery-related homicides. The individuals in this group can be seen as potential or prevented serial murderers due to their personality structure and motivation and their pattern of victim selection. Furthermore, they demonstrated a high risk of reoffending.

Clearance and Conviction Rates

If the prevalence rates of serial homicide in Germany are compared over time, it becomes evident that they show a continuous increase since 1965. From 1986 to 1995 alone, our data indicate that there were 62.7% more serial murders than in the previous decade. From the total of 1,855 sexual and robbery-type homicides that the figures published annually by the German Federal Police Bureau (Bundeskriminalamt, 1953) denote for this period,
serial perpetrators have committed an estimated 8.4% of these crimes.

According to our research, the overall clearance rate for serial homicides between 1945 and 1995 is 82.6%. This figure is slightly below the comparison figures for homicides in general. Between 1986 and 1995, for instance, a suspect could be identified in 91% of all registered homicide cases (Bundeskriminalamt, 1999).

For 68.4% of the serial murderers, an arrest could only be made because of tips from the public, pure chance, or the offender turning himself in. A further limit is put on the police’s success by the modest rate of convictions: 63.7%. As far as sexual murders are concerned, only 56.4% of such crimes led to a conviction. Summing up, it appears that every fifth serial murder offense remains unsolved, whereas every third offense remains unpunished.

The Present Research

The surprising prevalence of serial murder in Germany over the last 55 years, combined with the limited success in apprehending and convicting the perpetrators, coincides with a lack of knowledge about the phenomenon. No empirical study of German serial murderers had been conducted previously, nor were there any monographs published on the topic in the last 50 years in Germany. To help to remedy this lack of knowledge, the first author started in early 1995 to develop an outline for a study that would further the understanding of serial murder with respect to the following: The primary research questions pursued were “What are the characteristics of serial murderers?” and “Can these individuals be differentiated offenders who committed single or double homicides?”

METHOD

Sample

As a time period, the years from 1945 (the end of World War II) until the end of 1995 were chosen. The sample of participants are all serial murderers who have been convicted within this period in Germany. Excluded are those from the territory of the former
German Democratic Republic—the eastern part of Germany—prior to the reunification in 1990. The prosecution files and the court verdicts, including psychiatric and psychological reports, were used as the primary data sources for the study. Additionally, data were collected from police files about all cases of presumable serial homicide where either no suspect could be identified or the evidence did not suffice to prosecute.

To this end, the complete issues of the Federal Criminal Investigation Update, which is a daily publication issued for the police forces by the German Federal Police Bureau, the Bundeskriminalamt, were analyzed. Apart from that, the criminological and criminalistic literature and printed media were examined. Any instances of serial homicide reported in the latter sources were verified through personal communication with the police forces that had been responsible for the investigation of the respective series.

Additionally, standardized interviews were carried out with 8 participants, whereas another 10 participants engaged in correspondence through letters with the first author, some of them over several years. Because there are some severe discrepancies between the self-reports of these participants and the factual statements of the law courts, the self-reports were not included in the descriptive part of the study.

These procedures yielded information for a total of 61 individuals. These persons represent the whole population of individuals convicted for three or more homicides in the Federal Republic of Germany between 1945 and 1995 who conform to the definition of serial murder discussed above.

Procedure

The analysis of the prosecution files was approached in three steps. First, 232 variables were identified. They represent the total of relevant and applicable criminological, criminalistic, psychological, psychiatric, sociological, and medical issues that have been defined in accordance with accepted judicial, clinical, and diagnostic standards. This information includes, as examples, age at the time of the offenses, socioeconomic and family background, education level, employment, previous convictions, IQ score,
diagnosis of mental or personality disorder, victim-offender relationship, and crime-scene activities.

Then, the data were collected and scored in a standardized manner for every individual. This means that the presence and form of these variables was coded for each of the 61 individuals. Finally, descriptive and inferential statistical analyses were conducted.

RESULTS

As mentioned above, the final sample consists of 54 male and 7 female individuals. An overview of the characteristics of these serial murderers is shown in Table 1. Notably, the average number of homicides for which each has been convicted is 5.1 (SD = 2.9), ranging from a minimum of 3 to a maximum of 16. The mode is 3 homicides, with 41% of the individuals falling into this category. As might be expected, this distribution shows a pronounced positive skewness (skewness statistic = 1.92), that is, the corresponding frequency curve has a long right tail.

It was tested whether the distribution of IQ scores in the sample approximates a normal distribution. The goodness-of-fit test indicates that the observed IQ scores are not consistent with a normal distribution ($\chi^2 (1) = 4.57, p < .05$). This is primarily due to a greater number of individuals in the IQ range of 100 to 110 ($n = 24$) than would be expected if the scores were normally distributed (the expected frequency would be $n = 16.64$ for this category). Hence, a serial murderer from the sample is slightly more likely to be of above average intelligence than someone who is randomly picked from the general population. Surprisingly, the less intellectually capable offenders were able to evade apprehension twice as long as those individuals with an IQ greater than 100. The average values are 8 years, 3 months for those with lower IQ scores compared to 4 years, 2 months for those with higher IQs.

Although most of the individuals are endowed with sufficient intellectual capability, the majority failed at school and in employment. Nearly two thirds (63.8%) had a bad school record, 43.1% had to repeat a class at least once, and 39.7% left school prematurely. Only 51.7% of the individuals had completed job training, and none of them achieved a senior employment position.
Dysfunctional development in primary socialization processes could be observed for 89.1% of the sample. This is likely to have increased the risk for social maladjustment. Later psychological and behavioral anomalies were facilitated by the misconduct of incompetent parents. In 32.7% of cases, there was a general conflict between parents and child; in 27.3%, there was a severe conflict between father and child; and 20% of the individuals had a disturbed relationship with their mother.
About two thirds (65.5%) of the individuals came from families with low economic status. On average, the individuals had more than three siblings. Although many of the individuals were subject to physical and psychological maltreatment by parents or siblings, only 3 individuals (5.2%) reported sexual abuse. Salient aspects in the social behavior of these individuals, according to the clinicians (psychiatrists and psychologists) who assessed them for court proceedings, are the lack of orientation, a deficiency in forming and maintaining attachments or bonds to others, a lack of social impact, deficits in conflict competency, and a passive, at times hostile, basic emotional state paired with a lack of empathy. Of course, these clinical opinions result from post hoc assessments. Hence, it is not clear whether they are—at least in part—the causal factors or the outcome of committing serial homicide. We do believe, however, that the aforementioned aspects of social alienation and maladjustment are likely to represent some of the precursors to serial homicide to some degree because some of the aspects, such as deficits in forming and maintaining attachments to others, date back to the early childhood and adolescence of the individuals in the study. Similarly, the experience of low economic status and the frustration of the need for social recognition have been discussed in the literature as important factors that contribute to extreme aggression (Leyton, 1986).

The average age at the time of commission of their first homicide is 27.5 years, \( \bar{X} = 27.5 \) years, with a minimum of 14 and a maximum of 53 years. The distribution is positively skewed (skewness statistic = 1.02), that is, it has a long right tail. This means that the majority of the individuals are found in the lower end of the age range: three quarters (74.6%) of the individuals were 30 years old or younger at the time of their first homicide.

Psychological, psychiatric, or both types of assessments of the individuals were analyzed to obtain an indication of the degree of personality disorders and clinical symptoms in the sample. These assessments represent expert opinions that were given during the trial proceedings or subsequently in treatment by mental health professionals, mainly forensic psychiatrists and forensic psychologists. Such reports were available for 52 individuals in the sample. These findings are summarized in Table 2 according to the
international standard for diagnosing mental disorder issued by the World Health Organization (1992), the ICD-10.

For 46 participants (88.5%), personality and conduct disorders had been diagnosed. In the remaining 6 cases, there were merely signs for elevations on particular scales, which did not warrant a psychiatric diagnosis. The clinical dimensions that showed the highest frequencies in the sample were emotional instability, low affect, lack of responsibility, egotistic or egocentric tendencies, low frustration tolerance, reduced impulse control, and low self-confidence.

Moreover, the high degree of suicidal tendency deserves attention. Five individuals committed suicide, only 1 of these while in custody, and an additional 15 individuals (27.3%) made suicide attempts prior to their apprehension. In addition, 12 individuals (19.7%) reported that they had considered committing suicide prior to their apprehension.

**Are Serial Murderers Unique?**

The discussion so far has attempted to differentiate among serial murderers. Through a comparison with offenders who were convicted of single murder or manslaughter, we also tried to establish whether the serial perpetrators represent a distinct class of homicide offenders. For this reason, the present sample was

<table>
<thead>
<tr>
<th>ICD-10 Diagnostic Category</th>
<th>% Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dissocial (F = 60.2)</td>
<td>28.8</td>
</tr>
<tr>
<td>Mixed personality disorders (F = 61.0)</td>
<td>17.3</td>
</tr>
<tr>
<td>Emotionally unstable (F = 60.3)</td>
<td>13.5</td>
</tr>
<tr>
<td>Schizoid (F = 60.1)</td>
<td>9.6</td>
</tr>
<tr>
<td>Anxious: avoidant (F = 60.6)</td>
<td>7.7</td>
</tr>
<tr>
<td>Narcissistic (F = 60.8)</td>
<td>5.8</td>
</tr>
<tr>
<td>Paranoid (F = 60.0)</td>
<td>3.8</td>
</tr>
<tr>
<td>Histrionic (F = 60.4)</td>
<td>1.9</td>
</tr>
<tr>
<td>None</td>
<td>11.5</td>
</tr>
</tbody>
</table>

NOTE: F values refer to the classification system of mental disorders within the ICD-10 (World Health Organization, 1992).
compared with the findings from a study that analyzed the prosecution files of 750 nonserial offenders (Rode & Scheld, 1986).

The results of the comparison are shown in Table 3. Chi-square tests are calculated for the comparisons of the 17 criteria in this table, based on the percentages of occurrence in the sample of Rode and Scheld (1986) and the present sample. The 17 criteria are used because they represent the common denominator of the data reported by Rode and Scheld and the data from the present study. Because this is a test of the global hypothesis that serial murderers differ from their single-homicide counterparts by means of several inference tests, it runs the risk of Type I error inflation. Hence, the chosen significance level of $\alpha < .05$ is adjusted via the procedure described by Holm (1979), as presented in Holland and

**TABLE 3**

Comparison of Characteristics for Single and Serial Murderers

<table>
<thead>
<tr>
<th>Comparison Item</th>
<th>Single (n = 750) % Frequency</th>
<th>Serial (n = 52-61) % Frequency</th>
<th>$\chi^2$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Personality disorders</td>
<td>18</td>
<td>89</td>
<td>47.11*</td>
</tr>
<tr>
<td>Offense(s) committed in affect</td>
<td>53</td>
<td>4</td>
<td>42.12*</td>
</tr>
<tr>
<td>No relationship with victim prior to offense(s)</td>
<td>21</td>
<td>80</td>
<td>34.47*</td>
</tr>
<tr>
<td>Sexual motive</td>
<td>3</td>
<td>4</td>
<td>32.83*</td>
</tr>
<tr>
<td>Avarice as motive</td>
<td>11</td>
<td>36</td>
<td>13.30*</td>
</tr>
<tr>
<td>Cerebral anomalies</td>
<td>10</td>
<td>33</td>
<td>12.30*</td>
</tr>
<tr>
<td>Suicide attempt prior to apprehension</td>
<td>9</td>
<td>27</td>
<td>9.00*</td>
</tr>
<tr>
<td>Offense(s) are direct consequence of conflict</td>
<td>15</td>
<td>3</td>
<td>8.00*</td>
</tr>
<tr>
<td>Previous convictions</td>
<td>51</td>
<td>79</td>
<td>6.03</td>
</tr>
<tr>
<td>Intoxicated during offense</td>
<td>49</td>
<td>28</td>
<td>5.73</td>
</tr>
<tr>
<td>Manual labor</td>
<td>52</td>
<td>34</td>
<td>3.77</td>
</tr>
<tr>
<td>Female victim</td>
<td>47</td>
<td>66</td>
<td>3.19</td>
</tr>
<tr>
<td>Unemployed</td>
<td>26</td>
<td>39</td>
<td>2.60</td>
</tr>
<tr>
<td>Dysfunctional family background</td>
<td>70</td>
<td>89</td>
<td>2.27</td>
</tr>
<tr>
<td>Single or divorced</td>
<td>65</td>
<td>74</td>
<td>0.58</td>
</tr>
<tr>
<td>Male</td>
<td>90</td>
<td>89</td>
<td>0.50</td>
</tr>
<tr>
<td>Limited culpability</td>
<td>54</td>
<td>51</td>
<td>0.09</td>
</tr>
</tbody>
</table>

NOTE: The chi-square tests assess the sameness of the distribution between the single-homicide offenders in the study by Rode and Scheld (1986) and the serial homicide offenders in the present study.

*p < .05, according to the Bonferroni-type multiple testing adjustment developed by Holm (1979).
Copenhaver (1988). This adjustment represents an improvement over the very strict Bonferroni correction.

In 8 of the 17 comparisons, the chi-square values are significant, that is, the observed differences are not commensurate with chance variation. Therefore, serial murderers appear to constitute a distinct type of homicide offender who shows greater signs of alienation, social maladjustment, and anomaly than single-homicide offenders. In particular, the serial murderers are more prone to personality disorders and are more likely to have sustained brain damage. Their crimes are more likely to serve selfish needs, such as obtaining sexual gratification or material gain. They generally do not know their victim prior to the offense, although the offense itself is likely to be premeditated. For the single-homicide offenders, in contrast, the offense is more likely to be the outcome of a momentary loss of control, either as a consequence of conflict or of strong affect.

On a descriptive level, the differences that do not reach statistical significance are also in the direction of serial murderers being more socially isolated or alienated individuals. They have higher rates of unemployment and previous convictions, are more likely to have a dysfunctional family background, and more often live alone. Finally, a one-sample \( t \) test of age at the time of the first offense for the 61 serial murderers (\( M = 27.5, SD = 8.19 \)) against the average value of 31.5 years for the single-homicide offenders from the study by Rode and Scheld (1986) reveals that the serial murderers are significantly younger when committing their first offense (\( t_{58} = -3.74, p < .001 \)).

The Sexual Murderer

When describing the characteristics of the serial murderers in the sample, special attention should be given to those individuals whose offenses display strong sexual connotation, because a substantial proportion of the literature on serial murder has put an emphasis on this type of offender (see Brown, 1991; DeHart & Mahoney, 1994; Egger, 1990; Giannangelo, 1996; Lunde, 1976). In fact, some authors have equated serial murderers with sex killers or lust murderers (Egger; Giannangelo; Lunde).
Within the sample, 22 individuals could be identified as sexual murderers because their behavior before, during, or after the offense displayed a strong sexual component. They were convicted of a total of 137 homicides. It is worthwhile to note that, in many of these cases, it was not the death of the victim, as such, that the offender experienced as sexually rewarding. Rather, the kind of sexual acts involved and their relative significance for the perpetrator can be highly individualistic. In many cases, they reflect the deviant sexual or violent fantasies (or combinations of both) of the perpetrator.

The sexual murderers appear to favor a manual way of killing their victims by strangulation with an instrument (28.3%), bludgeoning (23.2%), stabbing (22.5%), or manual strangulation (21%). In total, such a direct manual act of killing applies to 96.4% of the 22 homicides committed by sexual murderers. In contrast, individuals \((n = 129)\) who killed their victims primarily for some immediate material gain, for example, in the context of a robbery, used a weapon in 54.1% of cases that did not require them to have direct physical contact with the victim.

A substantial age difference becomes apparent when the 22 sexual murderers in the sample are compared with the remaining individuals in the sample. The sexual murderers’ average age at the time of the first offense was 22.5 years \((SD = 5.82)\), whereas the corresponding value for the remainder of the sample is 30.9 years \((SD = 7.94)\). Sexual murderers are significantly younger when they commit their first offense than are nonsexual serial murderers \((t_{57} = 4.27, p < .001)\). There is, however, no significant difference between the two groups in terms of their IQ.

As far as the diagnosis of sexual disorders is concerned, no clear pattern emerged for the group of sexual murderers. As can be seen in Table 4, almost all forms of sexual deviance could be found. In most cases, the participants had more than one abnormal sexual preference or fixation. In this regard, the combination of sadism and fetishism constituted a salient pattern, although in some instances only tendencies could be diagnosed. In addition, a substantial number of individuals \((77.3\%)\) reported disturbed sexual relations. Moreover, individuals in this group were not able to make sexual contacts \((35.3\%)\) or to achieve sexual gratification according to their taste in a given relationship \((64.7\%)\).
Behavioral Consistency Versus Change

The most frequent way of killing the victim was through asphyxiation, with strangulation via an instrument occurring in 16.9%, manual strangulation (choking) in 15.6%, and suffocation in 0.9%. In the remaining cases, the victims were shot (23.8%), stabbed (14.6%), bludgeoned (14.1%), poisoned (13.5%), or drowned (0.9%).

Modus Operandi

The comparative analysis of patterns in offense behavior, that is, of intraindividual consistencies in modus operandi across series, opens up the possibility of prediction, either to link new offenses to extant series or to make inferences about the likely characteristics of a perpetrator. A consistent modus operandi should be defined as a correspondence in those crime-scene actions that are aspects of a rational, goal-oriented strategy on behalf of the perpetrator. These actions are an outcome of the offender’s experience or conviction that particular instrumental (e.g., appropriate weapon) and strategic proceedings (e.g., time of day, location, choice of victim) are more likely to lead to success.

The majority of the offenders in the sample show marked differences in their actions from one homicide to the next. These dif-

<table>
<thead>
<tr>
<th>ICD-10 Diagnostic Category</th>
<th>% Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Multiple disorders of sexual preference (F = 65.6)</td>
<td>40.9</td>
</tr>
<tr>
<td>Sadism (F = 65.5)</td>
<td>36.4</td>
</tr>
<tr>
<td>Fetishism (F = 65.0)</td>
<td>31.8</td>
</tr>
<tr>
<td>Pedophilia (F = 65.4)</td>
<td>273</td>
</tr>
<tr>
<td>Necrophilia (F = 65.8)</td>
<td>182</td>
</tr>
<tr>
<td>Exhibitionism (F = 65.2)</td>
<td>18.2</td>
</tr>
<tr>
<td>Voyeurism (F = 65.3)</td>
<td>13.6</td>
</tr>
<tr>
<td>Sodomy (F = 65.8)</td>
<td>9.1</td>
</tr>
<tr>
<td>Coprophilia (F = 65.9)</td>
<td>4.5</td>
</tr>
</tbody>
</table>

NOTE: F values refer to the classification system within the ICD-10 (World Health Organization, 1992).
ferences would have seriously impeded any attempt at linking those cases to a series. In particular, marked differences became apparent in the transition from the first to the second offense in a series.Across the sample, 59.1% of the individuals (72.7% of the sexual murderers) changed their modus operandi through the modification of one or more of the following parameters:

- Crime scene freely accessible versus crime scene hidden from view;
- Victim from own social background versus no offender-victim relationship prior to the offense;
- Assault-type attack versus use of manipulation to lure the victim to the crime scene;
- Control of victim through threats versus control through restraints;
- Weapon obtained at the crime scene or from the victim versus bringing own weapon to the crime scene;
- Single offender versus offending with accomplice or accomplices;
- Digital sexual manipulation versus attempted or completed rape;
- Attempted murder versus completed murder;
- Single homicide versus double or triple homicide;
- Leaving evidence at the crime scene versus removing evidence thoroughly;
- Fleeing from the crime scene versus retreat after prolonged stay at the crime scene;
- Leaving victim’s belongings at the crime scene versus taking some of the victim’s belongings;
- Victim’s body openly displayed versus victim’s body hidden or removed;
- Crime scene being the body recovery site versus crime scene not being the body recovery site;
- Crime scene remaining unchanged versus staging of the crime scene.

No confirmation was found for the hypothesis that sexual murderers in particular would target one special type of victim (Hickey, 1990; Jenkins, 1994; O’Reilly-Fleming, 1992). Only three individuals studied (13.6%) showed a fixation on a particular targeted victim (for example, slender girls with long, blond hair). Only preferences in terms of gender and age of the victims could be found.

About one fifth (18.2%) of the individuals killed victims of either gender, and 22.7% of the sample killed both children and
adults. Based on the aforementioned findings, it is plausible that modus operandi can be influenced through endogenous (e.g., learning) and exogenous (e.g., situational demands, victim resistance) factors. Any consistency is therefore likely to be temporary because the modus operandi is subject to gradual developments or sudden changes from one homicide to the next. The potential for linking cases merely based on the respective modus operandi involved appears to be limited.

**Signature**

The signature of the murderers, on the other hand, promises to be a more valuable criterion to capture the peculiarities of the perpetrator in terms of his personality and behavior. The term *signature* refers to unmistakable action sequences that appear to be of great relevance to the perpetrator but that have no clear strategic or rational function (Douglas, Burgess, Burgess, & Ressler, 1992; Keppel, 1995, 2000). The signature acts are primarily an outcome of a perpetrator’s pathological or neurotic personality structure and are frequently of a ritualistic nature. In particular, they tend to reflect sexually deviant and violence-oriented fantasies on which the perpetrator is fixated (Hazelwood, Dietz, & Warren, 1992; MacCulloch, Snowden, Wood, & Mills, 1983).

If they occur, these signatures can be deemed highly consistent, as not a single one of the participants omitted his ritual if he remained undisturbed during the offense. This seems to be the case because only the realization of the fantasy would lead to sexual or inner gratification for the perpetrator. Within the scope of the study, the following crime-scene actions could be defined as signatures:

- Torture of the victims without the use of instruments or weapons;
- Vital mutilation of victims with a knife or other instrument;
- Offensive dismemberment;
- Postmortem sexual intercourse;
- Postmortem insertion of object or objects into vagina or anus;
- Urinating or defecating on victim’s underwear or on underwear brought to the scene;
- Staging of victim with underwear brought to the scene;
- Binding and gagging the victim with pieces of victim’s own clothes;
• Postmortem removal of organs or intestines;
• Postmortem cutting-off or removal of genitals;
• Repeatedly preventing the victim from dying when strangling to prolong the victim’s suffering;
• Multiple stab wounds in the breast, genital area, or both;
• Postmortem squeezing of female victim’s breasts without sexual intercourse;
• Cutting or tearing apart victim’s clothing; and
• Taking away victim’s underwear, jewelry, or both.

However, even if these particular crime-scene actions are easy to recognize, their presence does not guarantee criminalistic success in identifying specific offenders. As a case in point, only 22.7% of the individuals studied (but 40.9% of the sexual murderers) did in fact have such signatures that distinguished their crimes.

SUMMARY AND DISCUSSION

This article began by providing an operational definition of serial murder and then summarized empirical findings on the entirety of individuals from the Federal Republic of Germany from 1945 to 1995 whose crimes met the criteria of that definition. First, the individuals were described in terms of their characteristics and their sociodemographic background. Overall, there is considerable similarity with the description provided here and that of 217 U.S. serial murderers from a study by Canter, Missen, and Hodge (1996) in terms of age, previous convictions, dysfunctional family background, and educational background. There is, however, a marked discrepancy with the IQ levels that were reported by Canter et al. for their sample. They stated that 56% of the U.S. serial murderers in their sample had IQ scores above 120. Only 5.4% of the German serial murderers were measured with IQ scores greater than 120. This difference could be due to the fact that Canter et al. relied partly on secondary sources such as newspaper reports and magazine articles for the data collection. These sources may not be as accurate as the psychiatric or psychological assessments of the offenders that were used in the present study.

In comparison with a larger sample of German single-homicide offenders from an earlier study (Rode & Scheld, 1986), the
individuals in the present sample are more likely to meet criteria that can be interpreted as signs of antisocial lifestyle, alienation, social maladjustment, and anomaly. Therefore, it seems plausible to infer that serial murderers are not just homicide offenders who happen to be more prolific, all else being equal. It appears to be their greater risk of suffering from personality disorders, brain damage, impulsiveness, and so forth that predisposes them to commit their crimes.

This interpretation may, however, not be warranted. As the assessments of the individuals were all made post hoc, it is not clear whether the perpetrators had already been more deviant at the outset of their respective series. It may be, as well, that the experience of repeated killing affects both the offenders’ psychological state and their social situation. This poses a methodological issue for further research. Future studies on the characteristics of serial murderers could use the time span that elapsed between the first homicide and the apprehension of the offenders as a covariant measure. This may shed light onto the question of whether serial murderers show greater signs of deviation the longer the duration of their series is.

According to Canter (2000), examining the differential salience of offense actions across one offense class opens up the possibility of inferring distinctions between the individuals that commit crimes within that class. In the present study, only one such distinction was made, that is, between sexual murderers and the remaining individuals in the sample. The fact that there are only 22 individuals in the sample whose offenses are sexual indicates that the notion of the serial murderer as a sex killer or lust murderer (Egger, 1990; Giannangelo, 1996; Lunde, 1976) is clearly an oversimplification. Nevertheless, marked differences become apparent between the sexual murderers and the remaining offenders. The sexual murderers are significantly younger at the time of their first offense than the other individuals. Furthermore, the sexual murderers favor a manual way of killing their victims and are diagnosed with a variety of sexual disorders.

Turning to the crime-scene behavior of the 61 serial murderers, rational shifts become apparent in the modus operandi for 59.1% of them. This puts a limit on the utility of modus operandi characteristics for linking cases. On a more fine-grained level, some offenders are more likely to persevere with signatures, that is,
idiosyncratic peculiarities in their offense behavior that are not necessarily goal-oriented strategies. However, not all individuals display such signatures; indeed, less than a quarter of the offenders in this study could be identified as demonstrating specific behaviors in all of their murders. Nevertheless, the identification of signatures promises to be more useful for solving the crimes of sexual murderers than of other types of serial murderers because the results revealed that sexual murderers are more likely to have such signatures.

Future studies should address the question of differential behavioral consistency in more detail. It is plausible that some offense actions are more likely to remain consistent, whereas others may be more likely to be context specific. If this is the case, expert systems for linking cases, such as the Violent Crime Linkage Analysis System (ViCLAS) (Bundeskriminalamt, 1999), should be adapted to capture these differences and utilize them, possibly by attaching more weight to items that generally turn out to be less dependent on the context.

The results are exhaustive of the population of convicted serial murderers in Germany from 1945 to 1995 because the sample comprises all these individuals. This does not mean, however, that the findings are representative of German serial murderers in general. As discussed before, there are series of homicides in Germany that remain unresolved. It is conceivable that this could have lead to a systematic bias in the present study. The serial murderers that are not apprehended may be much more or much less intelligent, for example, than those who are finally identified by the police. Although unlikely, such a systematic bias is not entirely out of the question. Therefore, it should be kept in mind that the present findings refer to convicted serial murderers only. For instance, when calculating likelihood from the figures reported here for empirical offender profiles, the values should be regarded as estimates or approximations not as true scores.

Particularly with respect to the IQ values reported in this study, a caveat seems appropriate. A variety of intelligence tests were used by the psychiatrists and psychologists who had assessed the offenders originally. We extracted the IQ values from their reports directly. The variety of methods of assessment involved, as well as likely differences in the objectivity of conducting the tests and interpreting the responses, may limit the generalizability of these
findings. However, it is implausible that such a potential bias would be systematic by either exaggerating or diminishing the score for the majority of individuals. Hence, the observed distribution is likely to be an approximation of the true distribution in the sample.

Keeping these limitations in mind, it may be possible to use the frequencies of characteristics reported for the serial murderers in the sample to infer the likely characteristics of serial perpetrators in ongoing investigations in Germany. In accordance with the procedure outlined in Davies (1997), the base rates derived from a suitable sample can be used as a best guess for the characteristics of the perpetrator in an unsolved case.

Finally, more comparative, cross-cultural research is needed to find out to what degree the environmental, legalistic, and cultural peculiarities of a society have an impact on shaping the serial murderer and his crimes. We put forward a definition of the serial murderer and hope that other researchers will use it so that the findings from subsequent studies will lend themselves to cross-cultural comparison more easily. In particular, we believe that future research should attempt to delve into the etiology of serial murder. Due to the limited accessibility to serial murderers, a conventional nomothetic approach seems out of the question. Rather, ideographic case studies that highlight salient features of the individuals seem appropriate, and we encourage their use.

NOTES

1. We utilize the masculine pronoun throughout our discussion because of the predominance of male perpetrators as serial killers.

2. Canter, Missen, & Hodge (1996) defined the serial murderer as someone “who has committed more than two murders over a period of time” (p. 2). Although relatively vague, this definition is more or less congruent with the one used for the present study and allows for our comparison with their results.

REFERENCES


**Stephan Harbort** is a detective inspector with the police department of the city of Duesseldorf. He holds a master’s degree in public administration. He has published extensively in German on the topic of serial homicide and related phenomena. His monograph on serial homicide in Germany, *Das Hannibal Syndrom* (The Hannibal Syndrome), was published in March 2001.

**Andreas Mokros** studied psychology at the University of Bochum and the University of Liverpool, where he graduated from the M.Sc. course in investigative psychology. He is currently working on his Ph.D. at the University of Wuppertal.
Greek Homicide
A Behavioral Examination of Offender Crime-Scene Actions

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EVANGELOS HARATSIS
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Recent literature suggests that different “styles” of homicide will most appropriately be reflected in the different types of behaviors committed by offenders at a crime scene. These distinctions, it has been proposed, can best be understood using an instrumental and expressive thematic framework to analyze the way the offender acts at the crime scene. Multidimensional analysis was carried out on the crime-scene actions of 210 Greek single-offender, single-victim stranger homicides, with the aim of replicating earlier studies. A multivariate structure resulted, encompassing both hypothesized themes, allowing 63% of the cases to be assigned to dominant styles. Results are discussed in terms of implications for cross-national similarities and differences in the thematic structure of homicide and in terms of future avenues for research.

Toch (1969) suggested that most violent episodes can be traced to well-learned, systematic strategies of violence that some people have found effective in dealing with conflict-filled interpersonal relationships. Indeed, he postulated that if the histories of violent persons were examined, surprising consistency in their approaches to interpersonal relationships would be discovered.

Huesmann and Eron (1989) concurred that a substantial portion of the individual differences in characteristic levels of aggressiveness among humans can be attributed to learning. They hypothesized that social behavior is controlled to a great extent by responses that have been learned during a person’s early development, and they proposed that these learned responses for social

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behavior in general and for aggressive behavior in particular are largely controlled by what they term *cognitive scripts*, which are learned and memorized during a young child’s daily experiences and persist into adulthood. These scripts are stored in a person’s memory and are used as guides for behavior and social problem solving, suggesting how the person should behave in response to events and what the likely outcome of these behaviors would be. Within this framework, a habitually aggressive child is one who regularly retrieves and employs scripts for social behavior that emphasize aggressive behavior. Once established, these networks of scripts may be extremely resistant to change. Through elaborate rehearsal of specific scripts, more general abstract scripts for social behavior are formed that are equally resistant to change. The result, say Huesmann and Eron, is a set of cognitive structures that promote consistent forms of social behavior over time and across situations.

Swindler (1986) looked at the same issue of the processes by which behavior becomes encoded, but she added the context of culture into her explanation. She suggested that culture is a collection of resources that people use to shape “strategies of action,” by providing a repertoire of ideas, definitions of types of situations, material products, and other factors that may be combined in numerous ways. In her words:

> The alternative analysis of culture proposed here consists of three steps. First, it offers an image of culture as a “tool kit” of symbols, stories, rituals and world-views, which people may use in varying configurations to solve different kinds of problems. Second, to analyze culture’s causal effects, it focuses on “strategies of action,” persistent ways of acting through time. Third, it sees causal significance not in defining ends of actions, but in providing cultural components that are used to construct strategies of action. (p. 273)

Leyton (1995) also talked of the cultural context when he explained why some cultures may exhibit higher rates of violence than others. In the case of this current article, his ideas are pertinent to why Greece may exhibit higher rates of homicide than England and Wales (see Table 1 in the guest editor’s introduction to this issue). Leyton suggested that in any person’s instant of personal crisis, culturally encoded inhibitions will stop him or her
from exploding into violence. Therefore, it follows that the less attention a civilization pays to encoding such inhibitions, the more it offers illustrations of “noble” violence and the greater the likelihood that the least “educated” will act out their tension in violent explosion.

Leyton (1995) believed that the immediate cause of homicide is neither the desire nor the technology (both of which are everywhere readily available in the human psyche and in the landscape) but the presence in the culture of specific messages teaching people about the appropriateness of violence. He commented:

It was not the presence of the rifle that provoked the homicide: Murderous technology is available everywhere, in every kitchen and every garage; an axe or a knife, a bottle or a car would have accomplished the same end. It is the will to use that technology that is culturally coded, the decision that is half-consciously culturally applauded; this is what shapes the numbers of homicidal assaults in a nation. (pp. 160-161)

Corzine, Huff-Corzine, and Whitt (1999) took a similar approach but looked at things from the starting point of behavior. They postulated that if behavior is included in the definition of culture, culture can be seen to influence homicide in less direct ways. As an example, they point out that firearms and alcohol are situational contingencies that increase the odds of altercation resulting in a death (see Felson & Messner, 1996). However, Corzine et al. went on to say that it is cultural differences in the propensity to drink or carry a firearm for protection or to keep one in the house that may provide the explanation for regional differences in homicide rates (a theme explored in Bankston & Thompson, 1989).

If aggression is understood as learned, culturally encoded behavior, it can then be hypothesized that homicides within different cultural contexts will exhibit the trends of that culture. The questions that remain are how these differences can be seen and what these differences are. As Corzine et al. (1999) stated, it “becomes necessary to identify the specific content of a cultural or sub-cultural tradition to predict not only the conditions under which homicide will occur but also the nature of these homicides” (p. 44). However, as LaFree (1999) noted, there has to this point been a lack in research that has looked at the situational and
cultural perspective on homicide, which, to date, has prevented any reliable conclusions to be made about these influences.

More recent studies have found the basic concepts within the narrative approach (e.g., McAdams, 1988) useful in exploring the underlying mechanisms of violent crimes. In particular, research has focused on how this theoretical approach can help unravel the meaning of the act by focusing on the meaning the victim has to the offender (see, especially, Canter, 1994). This approach has also specifically been used in order to understand the role of the victim in homicide (Salfati, 2000; Salfati & Canter, 1999). In particular, these studies have drawn on research that has found the dichotomy of expressive and instrumental crimes as useful in understanding homicide (for good examples, see Berkowitz, 1993; Block, 1977).

As Fesbach (1964) initially suggested, aggression is the basic ingredient in violent crime, and he proposed these two types of aggression: hostile (expressive) and instrumental aggression, which are distinguished by their goals or the rewards they offer the perpetrator. The expressive type of aggression occurs in response to anger-inducing conditions such as insults, physical attack, or personal failures. The goal is to make the victim (the person) suffer. Most homicides, rapes, and other violent crimes, he suggests, are directed at harming the victim and are precipitated by hostile aggression and anger. The instrumental type of aggression comes through the desire for objects or the status possessed by another person, such as jewelry, money, or territory. Here, the offender tries to obtain the desired object regardless of the cost. Usually, there is no intent to harm anyone, although if someone interferes with the thief’s objective, the thief may feel forced to harm that person or risk losing the desired goal.

The different meanings aggressive actions have to the offender in a violent assault can thus be distilled into the idea of a victim being either a person onto whom the aggression is impulsively and expressively vented or the victim being a target secondary to the offender’s instrumental motivations of ulterior criminal actions (Fesbach, 1964; Megargee, 1966; Toch, 1969; Zillman, 1979). It has been further argued that this differentiation would most usefully be indicated through investigating particular subsets of actions that could be identified from the behaviors at the
actual crime scene (Fritzon, 2000; Ressler, Burgess, & Douglas, 1988; Salfati 2000; Salfati, & Canter, 1999).

Behaviors should be the focus of such an investigation because behaviors are what is first and foremost observable at a crime scene. As an observable unit of analysis, they are more objective at the first stage of interpretation. Second, using observable data at the crime scene will produce a more readily applicable model for police investigators, who will be able to more directly use the results of the research in investigations of murder.

Investigators from the Federal Bureau of Investigation (FBI) in the United States (e.g., Ressler et al., 1988) were among the first to seriously analyze the behaviors themselves, as evidenced from the crime scene. From this information, the investigators then attempted to deduce the different types of offenders responsible. However, there are inherent difficulties with this pilot work (see Salfati & Canter, 1999, for a discussion); as Ressler, Douglas, Burgess, and Burgess (1992) have admitted, “At present there have been no systematic efforts to validate these profile-derived classifications” (p. 22). What the FBI’s work does draw attention to, however, is the possibility of using crime-scene behaviors as a unit for analysis in the classification of homicides. The FBI stresses that behavioral clues that are the result of certain actions of the offender can be used to interpret the style of the offender. Indeed, much of the FBI’s work is reminiscent of Toch’s (1969) and Fesbach’s (1964) dichotomies of expressive and instrumental aggression. Both of these authors dealt with the way an individual interacts with the victim in terms of their motivation and the way they would express this during the violent episode. The FBI takes an operational approach to issues similar to those brought up by Toch, Fesbach, and other aggression theorists.

Salfati and Canter (1999) have built on this original work and proposed that manifestations of behaviors that are left at a homicide crime scene can be analyzed to help us understand both different styles of homicide and the kind of person responsible for each one of these styles. Their study of 82 British single-offender, single-victim solved homicides found that the expressive-instrumental dichotomy could successfully be used to classify cases by specific behavioral themes. Their behavioral model
allowed 65% of the cases to be assigned to one of the dominant styles and a further 36% to be assigned to appropriate hybrids.

Salfati (2000) followed up this initial study with a larger sample of 247 British single-offender, single-victim solved homicide cases, showing similar results. In this study, she shows that with expressive homicides, there was often an extreme physical attack. Moreover, these behaviors, when looked at together, are suggestive of actions centered on offenders needing to separate themselves from the victim, and the place of crime, possibly in order to avoid identification. All of these behaviors, Salfati suggests, show a prior relationship between the two parties, or at least suggest that the offender knew the victim to some extent.

Actions in the instrumental category, on the other hand, centered on behaviors that were not singularly directed at the victim as a person. Rather, the actions were part of a larger theme of the offender using the victim to further attain an ulterior aim such as sex or money. When taken together, these actions suggested a behavioral theme where the offender regarded the victim not as a person with whom they were personally interacting but as an object ultimately to be used for personal gain.

Through the analysis of the co-occurrences of the actual behaviors used by offenders at homicide crime scenes, Salfati’s (2000) study brings attention to the actual behavioral components that make up the different categories of homicide. These behavioral components suggest that there are certain behaviors that, if taken singularly and out of context of the other behaviors, could be interpreted much differently. However, by interpreting the actual meaning of these behaviors in relation to other behaviors with which they coincide, the thematic meaning of not only the behavior but also each of the two subgroups (expressive and instrumental) procures a more subtle definition than hitherto suggested. Salfati thus suggests that the behavioral components of expressive and instrumental homicides can thus be understood through a more subtle analysis and interpretation than hitherto put forward. Consequently, expressiveness and instrumentality are reinterpreted to be not only more behaviorally subtle but also more thematically specific.

Using the same classification criteria as Salfati and Canter (1999), Salfati (2000) reported that 62% of the cases could be seen
to exhibit a dominant behavioral style, whereas a further 30% were seen as hybrids of the two proposed styles. Considering the stringent classification criteria used, these results are notable and show that not only are behaviors a useful unit of analysis but that the expressive-instrumental dichotomy is a useful theoretical basis upon which to make these distinctions.

Aims of the Present Study

A number of authors have stressed the need to standardize classification systems as they are applied to homicide. In particular, Flewelling and Williams (1999) stated that common classification systems across studies would greatly enhance our ability to interpret findings from multiple studies and thereby advance our knowledge regarding the causes and correlates of homicide.

As described above, previous studies have found the expressive-instrumental dichotomy useful in classifying different sub-samples of British homicide. The current study aims to explore the usefulness of this classification scheme when examining homicide committed within a different cultural sample, in this case, the nation of Greece.

Because of the limitations of the data, the focus of this study is not on the examination of the underlying cultural phenomena. Rather, it aims to investigate whether homicide committed and investigated within different national contexts can be usefully compared as a first step toward standardizing systems for classifying homicide. Results from such a study can, at a second stage, be used to further explore and develop the issues that would lead to a more encompassing theory of how homicide can be understood as a cultural expression of expressive and instrumental aggression.

DATA

Description

The sample in the current study consisted of 210 solved \((n = 144)\) and unsolved \((n = 66)\) single-offender, single-victim homicide cases from 1983 to 2000 originally collected from the Athens
Police in Greece. A large number of homicides in Greece take place in Athens, in which approximately half the total population of this country resides. Therefore, the present samples capture an accepted representation of the overall patterns of homicide activity in Greece, although records from rural areas of the country are not represented in this research.

Most previous studies of homicide have used solved cases as the basis of their research to be able to compare offender characteristics as related to how each offender committed the crime. However, as the current study did not aim to look at offender characteristics, it included unsolved cases. As later analysis will show, only a few significant differences were found in the actions committed at the crime scene, thus, this was used as justification to merge these two data sets into one for the purposes of this study. Further, including cases of unsolved homicide into the analysis may well add an important subset of homicides that have often been excluded from examination.

In general, every homicide file included a complete crime report with details about the context of the crime scene and details about the crime scene itself, a pathology report, witnesses’ statements, and relatives’ statements. For the solved cases, details were included regarding the offender, particularly in reference to previous criminal activities. Some files also included sketches of the crime scene, offender and victim passport photographs, morgue photographs, and crime scene photographs.

For empirical analysis, the key offense behaviors relevant to the two different modes of offender-victim interaction (expressive and instrumental) previously found useful in the analysis of homicide crime scenes (Salfati, 2000; Salfati & Canter, 1999) were identified in the offense descriptions. These variables were recorded in dichotomous form with yes and no values based on the presence or absence of each behavior in any one offense. Dichotomies were used because the information was drawn from police records not initially collected for research purposes. Previous research has demonstrated that content analysis any more refined than presence-absence dichotomies is likely to be unreliable (Canter & Heritage, 1990).
Crime-Scene Variables

As shown in Table 1, 31 variables in total were coded across the 210 cases of homicide to reflect the actions by the offenders on the victim, traces of behaviors left at the crime scene, and variables reflective of the characteristics of the victim. Specifically, crime scene variables regarding the venue and the weapon or method of killing were recorded to portray the possible differences of weapon usage between Greek and Anglo-Saxon homicides; variables describing the type of wounding the victim sustained were also recorded. Crime-scene actions that were sexual in nature were also coded to distinguish the prevalence of sexually motivated offenses in Greek homicides. Indications of any property of value stolen during the crime were also recorded. Variables describing an offender’s activity after the initial attack and after the victim’s death were additionally recorded to provide an indication of how the offender had left the crime scene and how he or she treated the victim’s body. Variables indicating level of planning (e.g., avoiding leaving any forensic evidence at the crime scene, bringing a weapon to the scene) of the offense on behalf of the offender and actions suggestive of controlling the victim were also coded, together with variables describing the general context (e.g., place and time of crime) of the offense. Finally, details regarding the victim’s nationality, gender, and age were also recorded to establish the type of victim that had been targeted.

Finally, a further number of personal details regarding the offender’s previous convictions and criminal history, marital status, gender, army service, financial and occupational condition, previous psychiatric history, and relationship to the victim were also coded. However, because these variables were only available for the 144 solved cases, they were only used to give an indication of the background details of the offenders and were not used for any further analysis.

Care was taken to match the definition of the variables with that used by Salfati (2000) to make comparisons more viable. However, information on some variables was not available, and some were coded differently due to the nature of the case files. Finally, a number of other variables not included in the original
### TABLE 1
Percentage Frequencies of 36 Crime-Scene Behaviors Across 210 Cases of Greek Homicide

<table>
<thead>
<tr>
<th>Crime-Scene Variable</th>
<th>Solved Cases (n = 144)</th>
<th>Unsolved Cases (n = 66)</th>
<th>Total Cases (N = 210)</th>
<th>χ² Between Solved and Unsolved Cases</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Victim</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>10</td>
<td>31</td>
<td>28</td>
<td>ns</td>
</tr>
<tr>
<td>Place and time</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Offense occurred at night</td>
<td>79</td>
<td>82</td>
<td>80</td>
<td>ns</td>
</tr>
<tr>
<td>Victim was found in isolated or deserted area</td>
<td>23</td>
<td>38</td>
<td>28</td>
<td>5.068, p &lt; .05</td>
</tr>
<tr>
<td>Offense occurred inside building</td>
<td>60</td>
<td>64</td>
<td>61</td>
<td>ns</td>
</tr>
<tr>
<td>Victim’s body was transported from crime scene</td>
<td>38</td>
<td>30</td>
<td>35</td>
<td>ns</td>
</tr>
<tr>
<td><strong>Weapon and method of control used</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Offender brought a weapon to the scene</td>
<td>62</td>
<td>53</td>
<td>59</td>
<td>ns</td>
</tr>
<tr>
<td>Knife or sharp instrument (victim stabbed)</td>
<td>35</td>
<td>38</td>
<td>36</td>
<td>ns</td>
</tr>
<tr>
<td><strong>Wounding and method of killing</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Knife wounds on neck</td>
<td>17</td>
<td>23</td>
<td>19</td>
<td>ns</td>
</tr>
<tr>
<td>Wounds on torso</td>
<td>58</td>
<td>52</td>
<td>56</td>
<td>ns</td>
</tr>
<tr>
<td>Wound or wounds on victim’s head and face</td>
<td>51</td>
<td>62</td>
<td>54</td>
<td>ns</td>
</tr>
<tr>
<td><strong>Sexual activity</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vaginal penetration</td>
<td>4</td>
<td>3</td>
<td>4</td>
<td>ns</td>
</tr>
<tr>
<td>Anal penetration</td>
<td>3</td>
<td>8</td>
<td>4</td>
<td>ns</td>
</tr>
<tr>
<td>Oral sex</td>
<td>1</td>
<td>5</td>
<td>2</td>
<td>ns</td>
</tr>
<tr>
<td>Victim naked or partially naked</td>
<td>24</td>
<td>33</td>
<td>27</td>
<td>ns</td>
</tr>
<tr>
<td><strong>Position of body</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Victim totally or partially covered</td>
<td>15</td>
<td>23</td>
<td>17</td>
<td>ns</td>
</tr>
<tr>
<td>Victim hidden from public view</td>
<td>14</td>
<td>24</td>
<td>17</td>
<td>ns</td>
</tr>
</tbody>
</table>
**RESULTS: DESCRIPTIVE ANALYSES**

**Victim and Offender Demographics**

Of the total sample of 210 cases, 151 (72%) cases involved a male victim. Of the 144 cases where the gender of the offender was known, 130 (90%) of cases involved a male offender.

Of the 101 cases where the age of the victim was known, the victim ages ranged between newborn children and 87 years, with the mean age 42 years and median age 37 years. Of the 144 solved cases, the age of the offender was known for 90 cases. Of these, the ages ranged between 15 and 80 years, with a mean age of 33 years and a median age of 31 years.

In terms of more general characteristics, of the 144 solved cases, 67% of the offenders knew the victim to some extent. Fifty-one percent had previous convictions, 71% were unemployed, and 29% were married.
Comparing this Greek sample to the Salfati (2000) sample of 247 cases, it can be seen that overall, the Greek sample included a greater percentage of male victims (90% vs. 44% in the U.K. sample) but an almost identical percentage of male offenders (90% vs. 89% in the U.K. sample). The victims in the Greek sample were slightly older (42 years old vs. 39 in the U.K. sample); however, the offender sample was equivalent (both means were 33 years). In terms of the more general characteristics, a smaller proportion of perpetrators in the Greek cases (67%) as compared to the U.K. sample (83%) knew their victim to some extent prior to the crime. A smaller proportion of the Greek sample (51%) than the U.K. sample (78%) had a previous criminal record. A larger proportion of the Greek sample (71%) were unemployed at the time of the crime as compared to the U.K. sample (50%), but a smaller percentage of Greek perpetrators (29%) were married at the time of the crime than in the U.K. sample (55%).

As a whole, therefore, the Greek sample distinguishes itself from the U.K. sample as consisting mostly of male victims who, in general, were older than the U.K. sample. There were more stranger killings in the Greek sample, and fewer of the Greek offenders were married at the time of the crime. Based on the information available, more of the offenders also had no known criminal record. More of the offenders were also unemployed.

Crime-Scene Demographics

The frequencies of occurrence of the 31 coded crime-scene variables are presented in Table 1. The table shows the frequencies for the solved and unsolved samples separately, as well as the frequencies for the sample as a whole. Finally, the table also shows any significant differences between the two samples in terms of the frequencies the variables occurred at the crime scene.

High-Frequency Actions

For the overall sample of 210 homicides, the most frequently occurring actions at the crime scene involved the offense occurring at night (80%), the offender displaying extreme violence over
and beyond that needed for the killing of the victim (64%), and the offense occurring inside (62%).

Many of the offenders additionally showed no forensic awareness, with 64% of the total sample leaving some kind of forensic evidence at the crime scene. However, there was a significant ($\chi^2 = 42.657, p < .000$) difference between the two samples, with 78% of the solved cases leaving forensic evidence compared to only 32% of the unsolved cases. Whether this is a true difference between the two samples in terms of the nature of the homicide or whether this variable is significantly related to the solvability factor of the case is unclear.

Other higher frequency variables indicated that half of the cases displayed multiple wounds across the victim’s body (50%) or to one body area in particular (49%). Most of these wounds were aimed at the victim’s torso (56%) and head and face (54%), and, in many of the cases, the offender left the body of the victim exactly as it fell (60%). In many of these cases, the offender had also brought a weapon to the scene (59%), showing further evidence of the violent theme to the variables.

Time and Place of the Homicide

In terms of the time and the place of the homicide, Table 1 shows that 80% of the offenses took place inside a building, and 20% of the cases in the total sample occurred during the day. Approximately one third of the perpetrators (35%) removed the victim from the original crime scene where the victim was killed. This variable has previously been interpreted (Salfati, 2000) to indicate forensic or investigative awareness of the offender, whereby the offender is removing the link between the place and the rapid discovery of the victim. In a further 28% of the sample, the victim was found in an isolated area, which further delayed the recovery of the victim. It is of interest to note that there was a significant difference ($\chi^2 = 5.068, p < .05$) again on this forensic-awareness-themed variable between the two samples, where solved cases displayed less of this variable (23%) than the unsolved (38%) cases. Again, this may point to the difference between the two samples being the evidence available to investigators that can be linked to an offender.
The Weapon or Method of Killing the Victim

In terms of the weapon or method of killing the victim, over half (53%) of the offenders came prepared by bringing a weapon to the scene. Thirty-six percent stabbed the victim, 33% used a blunt instrument, and 25% shot the victim.

Regarding the control the offender exhibited over the victim (binding the victim), there was a significant difference ($\chi^2 = 7.95$, $p < .01$) between the two samples, whereby only 8% of the solved cases exhibited this binding behavior compared to 21% of the unsolved cases. Again, the difference between the two samples appears to be on the level of the offender’s control over the crime scene: in this case, the offender’s control over the victim.

Wounding of the Victim

Also shown in Table 1 is information concerning the wounds the offender inflicted on the victim. It can be seen that 56% of wounds were inflicted on the torso and 54% on the head or the face. Twenty-one percent of victims were strangled, 19% received knife wounds to the neck, and 11% were suffocated. Only 18% received a single wound. Over half of the sample (as discussed previously), received multiple wounds, and 64% were the object of overkill. Two percent of cases involved dismemberment or mutilation of the body after the death of the victim.

Sexual Activity

According to the description in the files, 30% of the 210 cases were sexually motivated, with no significant difference between solved (30%) and unsolved (32%) cases. However, this number is uncertain because it primarily reflects the investigating officer’s opinion on the motivation of the offender. For this reason, this variable was not used for any further analysis in the study but was only used to give an indication of the number of cases that may have had a sexual element to them, over and beyond the actual rape of the victim. When the sexual behaviors at the crime scene were analyzed, it showed that only a very small percentage (<5%) of the cases involved actual observable sexual behaviors. Of course, this does not mean that more cases were not sexually motivated, but, as previously mentioned, inferring sexual motivation
not based on observable actions can lead to a skewed perception of the case material. Similarly, in 27% of cases, the victim was found naked, an interpretation of which must be approached cautiously.

**Position of Victim’s Body at the Crime Scene**

Concerning the position of the victim, in 17% of the cases, the victim was covered, and in 17%, the victim was deliberately hidden from public view. In 20% of the cases, the victim’s face was deliberately hidden. It is interesting that this occurred significantly more often in the solved (30%) than in the unsolved cases (22%; \( \chi^2 = 5.708, p < .05 \)). In 25% of the cases, the victim had been purposefully placed in a specific position by the offender.

**Theft**

In 42% of the total sample, the offender stole objects of value from the victim or the crime scene. Again, there was a significant difference (\( \chi^2 = 9.1, p < .004 \)) between solved (35%) and unsolved (58%) cases, illustrating the possibly more criminally motivated and planned aspect of the unsolved sample.

**Forensic Activity at the Crime Scene**

In terms of the forensic awareness of the offender, although 64% of the sample showed a lack of forensic awareness, this was significantly more pronounced for the solved cases (78%) than for the unsolved cases (32%; \( \chi^2 = 42.657, p < .000 \)). However, there was no significant difference between the two subsamples in terms of the offender committing arson (5%) at the scene.

**Summary of the Frequencies of Actions in Greek Homicides**

The only significant differences between the two (solved and unsolved) data sets were higher incidents of the following five variables for the 66 unsolved cases: the victim being found in an isolated or deserted area; the victim being found bound; the face of the victim having been deliberately hidden or covered; the offender stealing or attempting to steal property of value at the
scene; and the offender leaving less forensic evidence at the crime scene. All of these variables show that the offender in unsolved cases exhibited behaviors that would delay the discovery of the victim and reduce the chances of the victim’s murder being linked to the offender. Consequently, these crimes were indeed more difficult to investigate and solve. Overall, however, when comparing the 144 solved cases with the 66 unsolved cases, the two data sets were generally similar and thus justified their being combined into one database for purposes of research. This merger allows for the inclusion of homicides that are more difficult to solve and thus increases the representativeness of the sample of Greek homicides, resulting in a more encompassing model to be developed from subsequent analyses.

The differences in the frequencies of actions between the Greek cases and U.K. cases were beyond the aims of this study. Instead, we aimed to investigate whether the two samples could be structurally compared using previously established classification systems and concentrating on differentiating between expressive and instrumental homicides.

RESULTS: SMALLEST SPACE ANALYSIS OF BEHAVIOR MATRIX

Smallest Space Analysis as an Analytic Technique

The data were further analyzed using smallest space analysis (SSA; Lingoes & Guttman, 1973). SSA allows a test of hypotheses concerning the co-occurrence of every variable with every other variable. In essence, the null hypothesis is that the variables have no clear relationship to each other. SSA is a nonmetric multidimensional scaling procedure based on the assumption that the underlying structure or system of behavior will most readily be appreciated if the relationship between every variable is examined.

Initially, association coefficients between all variables are computed. It is these coefficients that are used to form a spatial representation of items with points representing variables. The more often variables co-occur during homicide, the closer will be the
points representing those variables in the SSA space. The pattern of points (regions) can hence be examined and thematic structures delineated.

The hypotheses of this study are built on the assumption that actions with similar underlying themes will be more likely to co-occur than those actions that imply different themes. These similarly themed actions will co-occur in the same region of the plot. This regional hypothesis has previously been seen as an appropriate way of interpreting co-occurrences of behaviors and has successfully been used to interpret studies of both emotion and personality (Plutchik & Conte, 1997).

The coefficient of alienation (Borg & Lingoes, 1987) is an indication of how well the spatial representation fits the co-occurrences as represented in the matrix. The smaller the coefficient of alienation, the better the fit, that is, the fit of the plot to the original matrix. However, as Borg and Lingoes emphasize, there is no simple answer to the question of how “good” or “bad” the representations are. The answer will depend on a combination of the number of variables, the amount of error in the data, and the logical strength of the interpretation framework. In the present study, the data are mainly derived from police crime records, which are not created for research purposes and thus do not adhere to strict collection protocol and procedures. It would therefore be expected that the data is not error free and would contain considerable “noise” that would reduce the possibility of interpreting the results. A relatively high coefficient of alienation would therefore be acceptable, provided the plot produced a meaningful interpretation.

Although SSA and similar techniques have been widely used by social scientists over the last 30 years (Canter, 1985), using multidimensional scaling (MDS) techniques in the study of crime is a relatively new concept (Canter & Heritage, 1990). Using MDS for classifying homicides and for linking these different classifications to characteristics of the offender is unique in the study of homicide.

Using this methodology to analyze the co-occurrences of actions at a crime scene and the co-occurrences of these actions with the other aspects of an offender’s background enables a test of the hypothesis that sets of actions that co-occur form the themes
of expressive and instrumental homicide crime scenes and offenders. This will allow for the establishment of a model of homicide crime-scene actions and related offender characteristics based on themes of co-occurring sets of variables rather than on isolated one-to-one item correlations.

Results of Analysis

The SSA was carried out on 31 variables across the 210 cases, a visual display of which is presented in Figure 1. The resulting analysis showed a coefficient of alienation of .14386, indicating a
good fit for this data. Each point in the SSA plot is a variable describing an offense behavior, and the closer any two points are, the more likely it is that the actions they represent will co-occur in offenses in comparison with other actions. High-frequency variables in this case occurred in the middle of the plot and low frequencies at the edges of the plot.

The way in which the SSA functions can be illustrated by viewing in Figure 1 the two variables “shot” (shooting the victim) and “arson” (deliberately setting arson to the crime scene). These two variables are at opposite sides of the SSA plot and are therefore very unlikely to have occurred at the same crime scene in the sample (0%). These variables therefore reflect very different types of homicide themes. On the other hand, the variable “facehidden” (deliberately hiding the victim’s face) occurs very close to the variable “covered” (deliberately covering the victim’s body) on the plot; these two behaviors, therefore, are highly likely to occur in the same case (69%).

Behavioral Themes

The regional hypothesis states that items that have a common theme will be found in the same region of the SSA space. To test the hypothesized framework of homicide crime-scene behaviors and their related offender characteristics, it is therefore necessary to examine the SSA configuration to establish whether distinct themes of offender-victim crime-scene interaction can be identified in distinct regions of the SSA space. The next stage is to establish if any themes identified can be associated to thematically related offender characteristics.

The two hypothesized themes, expressive and instrumental actions committed at the crime scene, were evident through the visual examination of the plot. As can be seen from Figure 2, there were two regions of the configuration in which the variables co-occurred. These helped to indicate where the division of the plot was to be made. Further, this geometric differentiation was supported by the way the sets of actions within each of the two regions were thematically and theoretically different from one another. Any variables that fell in between two regions were allocated to the region whose theme it best reflected. This was done
both by the psychological meaning of the variable itself and through the meaning of the variable when taking into consideration its co-occurrence with the other variables in that region.

As previously mentioned, and as can be seen in Figure 2, a number of behaviors occurred in the majority (60% and above) of all the cases and were thus not used to discriminate between the two themes. These behaviors included the offense occurring at night (80%), there being evidence of “overkill” (64%), the offender not being forensically aware (64%), and the offense occurring inside a building (62%). Eighty-seven percent of all cases had at least half (2 out of 4) of these core variables present, which further justified taking these variables out of any further analysis related to the differentiation between cases.

Figure 2: 1 x 2 Projection of 3-Dimensional Smallest Space Analysis: Themes of Greek Homicides
NOTE: Coefficient of alienation = .14386. Black boxes denote high-frequency variables within the sample.
The Expressive Crime-Scene Theme

Shown in Figure 2 is a collection of frenzied and eclectic impulsive behaviors in the expressive theme. As was the case in Salfati and Canter’s (1999) research, these behaviors included variables such as the offender bringing a weapon to the scene and inflicting multiple wounds distributed across the victim’s body. Many of the victims in these cases also had injuries to the head and the face, which may indicate a very emotional attack where the offender is attacking the core of the representation of that person. These highly violent and expressive variables were located at the top end of the plot.

Other variables, in line with Salfati’s (2000) definition of expressive crimes, were located toward the bottom of this region. These included the offender transporting the victim away from the original crime scene and hiding the body, maybe to remove the victim from the crime scene and to hide the body so as to avoid detection. Again, it is the importance of the victim and the relationship between the offender and the victim that are important in these expressive homicides and that define the actions that are carried out during these homicide.

Other variables that occurred in this region, which were not used in previous studies but were incorporated into the analysis of this study, included the offender leaving the body in a deserted area, another behavior whereby the offender is aiming to delay detection. In some cases, the offender also placed the body in a specific manner and, in other cases, mutilated the body after the death of the victim.

The Instrumental Crime-Scene Theme

As was the case in Salfati and Canter (1999) and Salfati (2000), behaviors in the instrumental theme had a distinct theme of victims being used as a vehicle for the offender’s ulterior motive (see Figure 2). Even more clearly than in these two previous studies, the actions within this region could be differentiated from those in the expressive theme. Variables centered on female victims being targeted and sexually assaulted and property being stolen. It is interesting that the actions of vaginally and anally penetrating the victim were found in separate areas of the plot, suggesting that these two variables did not occur in the same types of cases.
Further investigation of these cases showed that all but one that included anal penetration (n = 9) were committed against a male victim.

As found in the previous studies, injuries typically were inflicted manually, emphasizing that the power inherent in a weapon was not used in these types of homicide to incapacitate the victim. The injuries were located around the neck through strangulation or by cutting the victim’s throat. These cases may thus be seen to be part of cases (as suggested by Salfati, 2000) where the offender’s contact with the victim had an ulterior motive such as money or sex.

Summary of Behavioral Themes

Through the analysis of the co-occurrences of the actual crime-scene actions used by offenders in Greek homicides, results of the present study indicate that thematic differences can be seen in these cases similar to the thematic framework shown in previous British studies by Salfati and Canter (1999) and Salfati (2000). This framework suggests that homicides can be interpreted as exhibiting either an expressive or an instrumental theme. This suggests that although some local differences can be seen, homicide actions can be seen to transcend cultural divides. However, future studies need to complete a more detailed investigation of subgroups within each cultural sample to further investigate these results in more depth. In particular, interviews with offenders and a more qualitative narrative explanation into the cultural aspect of the crime would back up any general trends found through empirical analysis.

FURTHER TESTING THE THEMATIC FRAMEWORK

To test this thematic framework of homicide crime-scene behaviors, each of the 210 offenses in the data set was individually examined to ascertain whether it could be assigned to a particular crime-scene theme on the basis of the variables that occurred during the incident. Every offense was given a score for each of the two themes, reflecting the number of expressive or instrumental
variables that occurred during the crime. The criterion for assigning a crime to a particular theme was the same as that used by Salfati (2000), where the dominant theme had twice the percentage of crime-scene variables present as the other theme.

Using this stringent criterion, the results of which are shown in Table 2, a total of 63% of the cases (133 out of 210) could be classified as either exhibiting a dominantly expressive (55%) or instrumental (8%) crime-scene theme. A further 37% were either hybrids or a mix between expressive and instrumental. This result would seem to suggest that the themes of crime-scene behavior as revealed by the SSA is a fairly good representation of behavioral themes of homicide. Indeed, it is interesting in itself that offenders tend to follow such dominant criminal behavioral patterns regardless of the national setting of the homicide.

Chi-square analysis showed a significant difference ($\chi^2 = 47.6; p < .000$) between the proportion of cases falling into either of the two themes (expressive or instrumental) and those falling into either of the two remaining categories (hybrid or nonclassifiable). Chi-square analysis also showed a significant difference ($\chi^2 = 25.3; p < .000$) between the proportion of cases falling into either of the two themes (expressive or instrumental).

These results suggest that there are consistencies in the way offenders use certain behavioral strategies at homicide crime scenes. However, over one third of the cases (37%) were classified as hybrid, suggesting that a considerable portion of the crime scenes had a similar number of behaviors from each style. This poses an interesting question about the nature of the hybrid crimes regarding which behaviors may be consistent to the person and which behaviors may be the result of situational factors.

**TABLE 2**
Allocation of Cases to Dominant Crime-Scene Theme

<table>
<thead>
<tr>
<th>Theme</th>
<th>Frequency</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Instrumental</td>
<td>17</td>
<td>8</td>
</tr>
<tr>
<td>Expressive</td>
<td>116</td>
<td>55</td>
</tr>
<tr>
<td>Hybrid</td>
<td>77</td>
<td>37</td>
</tr>
<tr>
<td>Total</td>
<td>210</td>
<td>100</td>
</tr>
</tbody>
</table>

NOTE: Percentages are rounded to equal 100.
Previous literature has looked at the question of consistency of behavior in terms of expressiveness and instrumentality. Berkowitz (1993) concluded that violent offenders do not always fall neatly into one of the two categories in the expressive-instrumental dichotomy. He suggested that, by and large, some persons are highly aggressive because they are emotionally reactive: often hot tempered, easily enraged, and quick to “shift into overdrive.” These hot-tempered people, however, sometimes attack others because they believe their aggression will pay off. Conversely, other aggressors can be viewed as more instrumentally oriented, because their aggression is more frequently carried out in the service of other desires, such as to satisfy their urges to achieve power, status, monetary gain, and so on. However, Berkowitz goes on to state that these people can also lose their tempers occasionally and strike out at someone in rage. Cornell et al.’s (1996) study also emphasized that criminal offenders need not be exclusively instrumental or reactive in their violent offenses. Reactive violence appears to be the more pervasive form of violent crime, with instrumental violence characterizing a smaller subgroup. Perhaps reactive violence should thus be considered the most basic form of aggression among criminal offenders, and instrumental violence should be considered a marker of a more pathological development in the ability to use aggression for goal-directed purposes.

To further explore the thematic scheme, classification results are shown in Table 3 for the solved homicides versus the unsolved homicides. Although a slightly lower percentage of expressive homicides and a slightly higher percentage of hybrids appear for the unsolved cases, there were no statistically significant differences in the distribution of themes. This again suggests that the two data samples were similar. Further, these results also indicate that solvability may not be related to overall theme. This speculation, however, needs to be investigated further before any definite conclusions can be made.

Salfati (2000) also found that 62% of her sample of 247 British homicides could be allocated to a dominant crime-scene theme. However, although more cases could be allocated to an expressive theme in her study, there was less of a discrepancy between the number of cases that could be allocated to expressive versus instrumental homicides. In the current study, only 8% of cases
were found to have a dominant instrumental theme. However, this may be due to the fact that the majority of the variables in the crime scenes related to sexual and theft behaviors, both of which were of very low frequency and occurred in a very small amount of cases. Nevertheless, it is important for future studies to further investigate the cultural differences between the samples, as they may be at the heart of the differences between Greek and U.K. homicides.

### CONCLUSION

The results from this analysis of homicide crime-scene behaviors show that the information that is contained in Greek police files can be detailed and extensive enough to allow for a comprehensive modeling of actions during homicide, and the results also confirm that behaviors are a useful unit of analysis to help distinguish between offenses and offenders in terms of their expressive and instrumental components. These results substantiate previous behavioral studies of homicide, namely those of Salfati and Canter (1999) and Salfati (2000), and validate the use of these models as a standard classification tool. They further indicate that the overall behavioral structure of homicide goes beyond cultural differences between homicides in different countries, although further detailed analysis is needed before any reliable conclusions can be had regarding any subgroups within the two samples, both in terms of the differences in the distribution of expressive and instrumental types and differences related to the actual types of victims, offenders, and the behaviors themselves.

### TABLE 3
Comparison of Dominant Crime-Scene Themes for Solved and Unsolved Cases

<table>
<thead>
<tr>
<th>Theme</th>
<th>Frequency of Themes</th>
<th>Solved (n = 144)</th>
<th>Unsolved (n = 66)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Instrumental</td>
<td></td>
<td>11 (8%)</td>
<td>6 (9%)</td>
</tr>
<tr>
<td>Expressive</td>
<td></td>
<td>83 (58%)</td>
<td>33 (50%)</td>
</tr>
<tr>
<td>Hybrids</td>
<td></td>
<td>50 (34%)</td>
<td>27 (41%)</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>144 (100%)</td>
<td>66 (100%)</td>
</tr>
</tbody>
</table>

NOTE: Percentages rounded to equal 100%.
The application of psychological research to the study of homicide must now further perfect the development of an empirically tested theory that encompasses nationally based variations within homicide. Future studies must develop and explore the similarities in these culturally distinct samples, both in terms of the behavioral components of such crimes and the characteristics of the offenders who make up the different cultural samples. In particular, to explore the relationship between how similarities and differences in the behavioral manifestations of homicide may be related to national or cultural encoding of “scripts” and “strategies of action,” a much more in-depth narrative exploration needs to be undertaken of the offenders’ own explanation and justifications of the event.

NOTES

1. Cases prior to 1983 were not collected because the police data files for these cases were not accessible.
2. According to police officials, homicides in Athens were one third of the total number of homicides in Greece for the years 1990 to 1999.
3. All percentages in this discussion are rounded up or down to the nearest whole figure.
4. The figures used for comparison can be found in Salfati (1998), which uses the same database as the later Salfati (2000) study.
5. It is important to note here that a comparison could only be made to the solved Greek cases where offender information was available.
6. To compare these frequencies in detail, see Salfati (1998).
7. All smallest space analyses and corresponding coefficients of alienation were analyzed using Jaccard’s correlation coefficient (Borg & Lingoes, 1987).
8. All variables in Table 1 were included in the analysis except for “sexually motivated homicide.”

REFERENCES


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The Structure of Crime-Scene Actions in Finnish Homicides

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The structure of crime-scene actions in Finnish homicides was analyzed using the theoretical distinction between instrumental and expressive aggression. Thirty-eight crime-scene actions were derived from the files of single-offender, single-victim Finnish homicides (N = 502). A multidimensional scaling procedure was used to investigate their structure. An expressive core indicating an emotional and impulsive attack without any indication of planning or post-mortem dealing with the body was found. Over 40% of the cases had no additional variables present. A distinction between expressive and instrumental types of aggression was observable in the rest of the crime-scene actions. The instrumental actions were further divided into subthemes indicating either a sexual or a resource-acquirement theme. Likewise, the expressive actions were divided into three subthemes, where the main emphasis had to do with the use of firearms, hiding and moving the body, and removing parts of the body.

The evolutionary psychological perspective proposes that the use of aggression reflects context-sensitive solutions that have evolved to solve particular adaptive problems of social living (Buss & Shackelford, 1997). Understanding these adaptive problems may shed light on the psychological mechanisms involved in homicidal aggression, which has caused deaths throughout human history, as indicated by hominid skeletal remains containing...
cranial fractures caused by clubs and weapons (Trinkaus & Zimmerman, 1982).

Contrary to the evolutionary perspective, most of the earlier studies of homicide have concentrated exclusively on offenders’ demographic variables, their relationships to their victims, and the methods used in the actual killing of their victims (studies of the United States include Block, 1977; Pokorny, 1965; Wolfgang, 1958). These studies can be described as sociological or structural, with little attention having been paid to psychological factors related to homicides. However, there is a more psychiatrically oriented tradition of research in which homicide offenders have been differentiated into a number of distinct types (e.g., Wille, 1974). The samples for these studies have often been drawn from clinical populations, which limits the possibility of generalizing the results. A notable shortcoming of these earlier classification systems is the lack of a unifying theoretical framework. For example, some types within a single classification theme may have been based on offenders’ motivations, whereas others have been based on offenders’ psychiatric illnesses. In addition, some of the studies have been at least partly based on self-reports, although reliance on self-reports of homicide offenders is problematic, because these offenders may be motivated to consciously distort their reports (Salfati, in press). Furthermore, the previous classifications have not taken into account differences in the ways the actual homicide offenses have been carried out.

Due to these limitations, the earlier approaches are not adequate to increase our understanding of the psychological processes underlying homicide. Moreover, they present no adequate framework to inform the police in the investigation of homicide. Such an approach has to be based on the assumption that the kind of homicide an offender commits embodies his or her typical characteristics. The evolutionary perspective outlined above suggests that homicides are highly context specific, triggered in contexts in which particular adaptive problems are confronted (Buss & Shackelford, 1997). This suggestion does not imply, however, that context would be the sole determinant, because individuals differ in terms of the adaptive problems they face and in terms of methods used for solving these problems. It can, therefore, be assumed that consistency between the characteristics of the offenders and
their actions at the crime scene will be found (Canter, 1995). A detailed exploration of the observable crime-scene actions and offender characteristics accompanied by an analysis and a theoretical explanation of any associations between the two would be the most suitable way to test this assumption. The first step in such an analysis is to demonstrate that the crime-scene actions in a set of homicide offenses do not co-occur randomly but have a theoretically interpretable structure.

Fesbach (1964) proposed that a theoretical distinction between instrumental and expressive aggression is fundamental in understanding aggressive behavior. According to him, instrumental aggression may occur when individuals attempt to achieve goals, and someone frustrates or prevents their efforts to do so. Aggression is then directed at the person responsible for the frustration in an effort to overcome the resistance so that the pursuit after the goal may continue. This kind of aggression is not an end in itself, rather, it serves some ulterior purpose which is external to the actual act of aggression (Berkowitz, 1993). Expressive aggression, on the contrary, is motivated by a desire to actually injure or harm a desired object (Fesbach). It is usually an emotional response to frustration or ego threats. Expressive aggression has been characterized as impulsive, uncontrolled, and performed during strong emotional arousal (Berkowitz).

Some evidence indicates that the closeness of the relationship between the victim and the offender may be related to the type of aggression, instrumental or expressive, that characterizes a homicide. Dodge (1991) proposed that stranger homicides are characterized by premeditation, calculation, and control. These homicides are also usually committed in the absence of strong emotional arousal. Further, stranger homicides usually occur when the offender attempts to complete some other goal, for example, a robbery or sexual assault (James & Carcach, 1997). Stranger homicides therefore seem to conform to the definition of instrumental aggression. Contrary to this, expressive aggression has been related to violence within families (Berkowitz, 1993; Ewing, 1997). Several studies have found that intrafamilial violence is characterized by loss of temper, impulsiveness, and reactivity to either real or perceived provocation (Cornell et al., 1996; d’Orban, 1979). Expressive aggression would also be
expected in other contexts where aggression is a response to provocation or threat.

It is reasonable to assume that variations of these two types of aggression would be associated with different kinds of crime-scene actions in the context of homicides. This would open up the possibility of deducing offender characteristics from the actions exhibited by the offender at the crime scene (Canter, 1995). For example, it might be possible to deduce the relationship between the victim and the offender (e.g., stranger vs. family member) from the actions exhibited by the offender at the crime scene. Clearly, in addition to furthering our understanding of the psychological processes underlying homicide, this information would also be useful in prioritizing suspects in homicide investigations.

There is some preliminary evidence that this is in fact feasible. A recent study by Salfati (2000) analyzed 247 cases of British single-offender, single-victim homicides. By a detailed analysis of the co-occurrences of the actual crime scene actions, Salfati was able to explore the behavioral components making up the themes of expressive and instrumental aggression in the context of homicides. An attempt was also made to link the crime scene actions to the offenders’ background characteristics. It was found that irrespective of the crime scene theme, the offenders were more likely to have characteristics indicating an instrumental way of dealing with previous life situations. For example, they were likely to have a criminal record. A separate analysis of stranger homicides showed similar results (Salfati & Canter, 1999). Although reflective of the general nature of homicide offenses, this finding nevertheless detracts somewhat from the practical usefulness of the findings for police investigations, because clear-cut connections between actions at the crime scene and the characteristics of the offender were not found. These results suggest a need to develop further the concepts of instrumental and expressive aggression as they relate to homicide. This distinction is clearly a general one with much utility, but its very generality leaves open questions about how it can be applied in a focused way to many different types of crime. A way to elaborate the conceptual framework further is to look for subtypes of homicides by using the list of
adaptive problems for which aggression may function as a solution (Buss & Shackelford, 1997).

First, aggression has been described as a way of co-opting the resources of others: For example, childhood aggression is usually about ownership of toys and territory (Campbell, 1993). In the adult context, muggings, beatings, and sometimes homicide are occasionally means to forcibly extract money and other goods from others. This suggests the existence of a subtype of instrumental homicides related to co-opting resources from others. In a recent study of the conflict types in Finnish homicides occurring during 1996, several of the cases took place in the context of a long-lasting drinking bout and were preceded by a quarrel over the ownership of a liquor bottle (Kivivuori, 1999). Salfati and Canter (1999) gave an example of instrumental aggression related to co-opting resources that also is applicable to the context of homicides. According to them, instrumental aggression may, for example, result when a thief whose goal is to obtain valuables by breaking into people’s apartments is prevented from doing so (by, e.g., the owner of the apartment unexpectedly returning home).

Second, the theory of strategic interference suggests that males may sometimes use aggression as a means for their short-term mating strategy (Buss, 1999). It has been suggested that males who experience deprivation of sexual access to women will be more likely to use sexually aggressive strategies (Lalumiere, Chalmers, Quinsey, & Seto, 1996) and that this will be especially likely if these males have both an impersonal orientation toward sex and display hostile masculinity toward women (Buss). This suggests a further subtype of instrumental homicides: those committed in the context of male sexual aggression. However, in this type of a homicide, the actual killing of the victim has not been the primary purpose of the attack.

Third, victims of aggression may suffer injury or death, impeding both their survival and reproduction (Buss & Shackelford, 1997). Being victimized may also carry the costs of status and reputation loss, which may lead to further abuse. Reactive, expressive aggression, sometimes homicidal, can be used to defend against such attacks on resources and status. Bar fights leading to homicide are typical examples of seemingly trivial altercations.
related to status escalating to the point of death (Daly & Wilson, 1988). In the study by Kivivuori (1999), masculine confrontations were evident in nearly 20% of the male-victim homicides occurring in Finland during 1996.

Fourth, reactive, expressive aggression would be expected in the context of male sexual jealousy, which has been found to be a major motivation for spousal battering (Daly, Wilson, & Weghorst, 1982; Dobash & Dobash, 1984). In the study by Kivivuori (1999), 64% of the female victims were killed by their sexual partners, and in 46% of the female-victim homicides, a conflict about sexual relationships preceded the killing.

Salfati (in press) suggests that reactive violence should be considered as the basic and the most pervasive form of aggression, whereas instrumental aggression should be considered a marker of a more pathological development, wherein the offender has the ability to use aggression for goal-directed purposes. It could, therefore, be expected that the basic form of homicide would be indicative of reactive, expressive aggression in the context of strong emotional arousal and feelings of anger with no accompanying evidence of instrumental goals. This suggests frenzied, impulsive attacks with limited possibilities for differentiating between offenses based on the method of killing. Indeed, the major variations between reactive, expressive offenses might not be so much a product of the form of the violent outburst that causes the victim’s death but rather of related activities supporting or enhancing the murderous activity.

The purpose of the present study was to analyze the empirical structure of crime-scene actions in Finnish homicides in an attempt to identify different constellations of such actions and in an effort to replicate and expand on similar explorations of British homicides (Salfati, 2000; Salfati & Canter, 1999). The assumption was that the actions may be suggestive of different types of adaptive problems that the individual has attempted to resolve through homicide. Following Buss (1999), it was assumed that these adaptive problems would be relatively invariant between different cultures, an example being the use of sexual coercion sometimes resulting in death of the victim as a male short-term mating strategy. Therefore, it was expected that the structure of the Finnish crime-scene actions would show clear similarities with the corresponding structures in British homicides.
METHOD

Cases

Following Salfati (2000), only single-offender, single-victim homicides were included to avoid the possible confounding effects of group dynamics on the aggressive behavior exhibited by the offender. This subset of homicides was selected from a pool of 626 Finnish homicides that occurred between 1980 and 1994, leaving a final sample of 502 homicides. A 142-item structured form (developed by the Finnish National Bureau of Investigation) with information concerning the crime-scene actions of the offender was available for each homicide. These forms had been filled in by the police officers working on the cases, utilizing all information available to them. Because of practical constraints, it was not feasible to obtain estimates of interrater reliability. However, only those dichotomous variables that allowed a clear decision to be made as to their presence or absence were included.

The offenders in this sample were predominantly male (90%), with a mean age of 37 years ($SD = 13$ years). Female offenders (10%) were on average 33 years old ($SD = 11$ years). Most of the victims were also male (71%) and on average 42 years old ($SD = 15$ years), compared to the female victims (29%), who had a mean age of 40 years ($SD = 16$ years).

Definition of Variables

To ensure the comparability of the findings with the previous study by Salfati (2000), many of the variables in the original database were recoded to correspond more closely to the variables used in that study. For example, Salfati’s study contained a variable indicating that the body of the victim was hidden. In the present study, this variable was formed by combining responses to the following three variables: the body of the victim had been buried in the ground; had been hidden in a box, refrigerator, or other such place; or had been hidden so that it would not be found. All the variables together with their definitions are presented in Table 1. They include 38 variables related to the crime-scene actions of the offender.
**TABLE 1**

Crime-Scene Variables and Their Definitions

<table>
<thead>
<tr>
<th>Variable</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Victim found at the same scene where he or she was killed</td>
<td>Victim was found at the same scene where homicide took place.</td>
</tr>
<tr>
<td>2. Weapon from scene used</td>
<td>Murder weapon or equipment used to tie the victim was obtained at the scene.</td>
</tr>
<tr>
<td>3. Wounds to torso</td>
<td>Wounds were inflicted on the victim’s torso.</td>
</tr>
<tr>
<td>4. Weapon found at the scene</td>
<td>Murder weapon was found attached to the victim or was recovered from the crime scene.</td>
</tr>
<tr>
<td>5. Wounds to head</td>
<td>Wounds were inflicted to face, neck, or other areas of the head.</td>
</tr>
<tr>
<td>6. Wounds from stabbing</td>
<td>Records indicated at least one stab wound on the body or that a sharp instrument was used.</td>
</tr>
<tr>
<td>7. Multiple wounds distributed across different body parts</td>
<td>Injuries were inflicted to two or more of the following: head (including face, neck, and other areas of the head), torso, feet, hands, or breast area.</td>
</tr>
<tr>
<td>8. Blunt instrument</td>
<td>Evidence was found that a blunt instrument was used by the offender.</td>
</tr>
<tr>
<td>9. Excessive stabbing</td>
<td>More than one stab wound was inflicted.</td>
</tr>
<tr>
<td>10. Wounds to limbs</td>
<td>Injuries were inflicted on either the victim’s feet or hands.</td>
</tr>
<tr>
<td>11. Excessive blunt force used</td>
<td>Based on police officers’ subjective assessment, excessive force was used with a blunt object.</td>
</tr>
<tr>
<td>12. Manual method: hit, kicked, strangled</td>
<td>Crime scene revealed the presence of any of the following: The victim had been strangled with hands or with an object, kicked or hit with hands, or hit against an object (e.g., the floor), or the murder weapon had been hands or feet.</td>
</tr>
<tr>
<td>13. Victim partially undressed</td>
<td>Evidence at the crime scene was destroyed by the offender.</td>
</tr>
<tr>
<td>14. Offender forensically aware</td>
<td>Evidence at the crime scene was destroyed by the offender.</td>
</tr>
<tr>
<td>15. Sexual crime</td>
<td>A sexual crime was indicated by any of the following: penetration of vagina, mouth, or anus; semen found in the body or at the crime scene; physical injury to sexual organs, nipples, or anus.</td>
</tr>
<tr>
<td>16. Clothing damage</td>
<td>Offender had cut or torn away the victim’s clothing or parts of it.</td>
</tr>
<tr>
<td>17. Vaginal penetration</td>
<td>Semen was found in the vagina, a foreign object was found in the vagina, or there was other evidence of penetration.</td>
</tr>
<tr>
<td>18. Injury to sexual parts of the body</td>
<td>Injuries were sustained to nipples, anus, vagina, or penis.</td>
</tr>
<tr>
<td>19. Anal penetration</td>
<td>Semen was found in the anus, a foreign object was found in the anus, or there was other evidence of penetration.</td>
</tr>
</tbody>
</table>
Statistical Analyses

A smallest space analysis (SSA; Lingoes & Guttman, 1973) was conducted to identify the underlying structure of the crime-scene actions. SSA is a nonmetric multidimensional scaling procedure that operates on the ranks of the original values of an association matrix rather than on their absolute values. In this case, the association matrix consisted of the intercorrelations between all crime-
The Jaccard’s coefficient was used to compute the correlations. This is a coefficient that gives the proportion of co-occurrences of all occurrences between two dichotomous variables. If two variables are both absent in a particular case, this does not increase the association. This coefficient was considered appropriate for the present material because the police records on which the coding of the variables was based might leave unmentioned the presence of a variable. For example, if the offender is caught at the scene of the crime, the description of his or her crime-scene behavior may not be very detailed. The SSA procedure then ranks the correlations and represents them in a space of a specified dimensionality where the distances between the variables in the space reflect their actual ranked correlations so that the shorter the distance between two points the higher their intercorrelation. The closer the rank orders of the original matrix and the SSA solution the better the fit of the solution. The coefficient of alienation provides a measure of this fit, with smaller values indicating a better solution.

### Analysis of the Relationship Between Victim and Offender Gender

As shown in Table 2, a cross-tabulation of the sex of the victim and the sex of the offender showed these two variables to be related. The female offenders were more likely to have killed a male, whereas the male offenders were more likely to have killed a female when compared to figures expected if no relationship

<table>
<thead>
<tr>
<th>Sex of Victim</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Female</td>
<td>Male</td>
<td>Total</td>
</tr>
<tr>
<td>Female</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Actual</td>
<td>8 (1.6%)</td>
<td>136 (27.1%)</td>
<td>144 (28.7%)</td>
</tr>
<tr>
<td>Expected by chance</td>
<td>14 (2.7%)</td>
<td>130 (25.9%)</td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Actual</td>
<td>40 (8.0%)</td>
<td>318 (63.3%)</td>
<td>358 (71.3%)</td>
</tr>
<tr>
<td>Expected by chance</td>
<td>34 (6.8%)</td>
<td>324 (64.2%)</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>48 (9.6%)</td>
<td>454 (90.4%)</td>
<td>502 (100.0%)</td>
</tr>
</tbody>
</table>

NOTE: \( \chi^2 = 3.75, df = 1, p < .05. \)
existed between the two variables. It should be noted, however, that both the victim and the offender were male in 63% of the cases.

RESULTS: THE STRUCTURE OF CRIME-SCENE ACTIONS

The results of a two-dimensional SSA of crime-scene actions are shown in Figure 1 (note that the results of the $1 \times 2$ projection of a three-dimensional SSA showed an identical structure). The Guttman-Lingoes coefficient of alienation (Borg & Lingoes, 1987) for this analysis was 0.25. The coefficient of alienation ranges from 0 (indicating a perfect fit) to 1. A coefficient of 0.20 to 0.25 is considered a reasonably good degree of fit (Shye, Elizur, & Hoffman,
The observed value of 0.25 is a relatively high coefficient, indicating that the fit between the representation and the actual ranked associations was only marginally good. However, a solution with a higher dimensionality is not presented here because, as Shye, Elizur, and Hoffman (1994) stated:

In the past it has been customary to attempt SSA solutions of increased dimensionality whenever the coefficient was considered high. . . . This procedure has, however, been found lacking both on technical and on theoretical grounds [since] the coefficient of alienation is sensitive to the number of items processed. (p. 125)

In Figure 1, each point represents a crime-scene action as defined in Table 1. The closer the points are together, the more likely it is that the two actions will co-occur in an offense. For example, it can be seen from Figure 1 that it is very likely that if the victim has been transported from the crime scene, he or she has also been hidden. By contrast, it can also be seen that it is unlikely that if a victim has been subjected to a sexual assault that he or she would also have been shot an excessive number of times, as these actions are distanced from each other in the SSA space.

Core Actions of Homicide

The first step in exploring the structure was to look at the frequency of occurrence of the crime-scene actions. It should be noted that there is no inevitable link between the associations of the actions as represented in the SSA space and their frequencies (Canter & Heritage, 1990). Therefore, any frequency structure is an empirical finding requiring explanation. Following the findings by Salfati (2000), it was expected that the high-frequency actions would be found at the core of the plot and that the low-frequency variables would be situated at the outskirts of the plot. Figure 2 shows the SSA space with the addition of equal-frequency contours. It is possible to draw clear contours in the SSA space to cover variables that occur in more than 50% of cases, in 49% to 19%, in 18% to 9%, in 8% to 5%, in 4% to 2%, and in less than 2% of cases.

This polarizing or modulating structure indicates that the high-frequency actions are those that tend to characterize all homicides
(these are listed below), whereas the less frequent actions are more idiosyncratic to particular homicides. The structure also shows that the degree of specificity of homicide actions is a product of the form of preparation or planning and the intensity of transaction with the victim's body in which the offender indulges. The most rare activities—for example, arson, necrophilia, use of weights, and excess shooting—are all determined involvements with the victim after death. As expected, the modulating facet, therefore, indicates that the major variations between offenders are not related to the form of killing the victim but rather are associated activities supporting or enhancing the activity of the killer. The latter would, therefore, be expected to prove useful in differentiating between different offenses.
It is worth considering in detail the actions that lie at the core of the plot and are present in over half of the cases because these give an indication of the basic nature of homicides in this sample. These actions, or results thereof, are as follows: victim was found at the same scene where he or she was killed (91%); weapon from scene was used (59%); weapon was found at the scene (58%); wounds to torso were found (57%); and wounds to head were found (53%). These variables are thematically closely related to each other. They all reflect an impulsive act of killing the victim by injuring the head and the torso with a weapon taken from the scene of the crime and with no further attempt at either moving the body after the killing or hiding the murder weapon. This picture is further confirmed by other actions, or results thereof, at the core of the plot: wounds from stabbing (49%); multiple wounds distributed across different body parts (33%); use of a blunt instrument (25%); and excessive stabbing (12%). This pattern of crime-scene actions indicates that the killing is emotional and frenzied in nature and lacks planning. Although there were some differences in the exact actions that had high frequencies in the study by Salfati (2000) and Salfati and Canter (1999), the structure of the pattern is quite similar, indicating that Finnish homicides can equally often be characterized as acts of impulsive aggression. In terms of the adaptive problems previously described as being likely to be associated with expressive aggression (Buss & Shackelford, 1997), these would seem indicative of aggression as a response to threats on status as well as situations where the context is one of male sexual jealousy.

Defining Themes of Crime-Scene Actions in Finnish Homicides

The next step in exploring the structure of homicide crime-scene actions was to look at whether they could be split into regions with a common underlying theme. Because the distances between the points reflect their likelihood of co-occurring, a regional split is a strong indication that the points within a spatial region are strongly interrelated and related to a common psychological process. When considering the actions further away from the center of the SSA space, thematically related regions of actions
could also be identified. For example, all the crime-scene actions having a sexual element were located in the upper left-hand corner of the space. There were also areas with no recorded actions separating the thematically related regions from each other. This indicates the possible existence of relatively clear subgroups of offenses with an emphasis on one of the regions in the outskirts of the plot, because actions in the different regions are unlikely to come together in any single act of homicide. A partitioning of the space into five thematically separate regions can be seen in Figure 3. The regions correspond by and large to the processes outlined in the introduction as potentially important in homicide. It should be noted, however, that the frequencies of the actions that define the themes in the different regions are relatively low. This suggests that a substantial portion of the offenses only contain high-frequency core variables and do not express any particular theme beyond an impulsive act of aggression.
When considering homicides involving sexual behavior, Geberth (1991) proposed a distinction between lust murder and sexual homicides. According to him, lust murder is typified by a gross sexual assault involving deep personality disturbance leading to mutilation of the body and removal of sexual parts of the body. By contrast, in an “ordinary” sexual homicide, in the context of male aggression as a means of obtaining sexual access, the victim is killed out of fear of later detection or a desire to silence the victim (Lalumiere et al., 1996). In the present sample, the following actions with a sexual theme, or results thereof, formed a clear region in the SSA space: evidence of a sexual crime (3%); clothing damage (3%); vaginal penetration (2%); injury to sexual parts of the body (1%); anal penetration (1%); and necrophilia (1%).

Although post-mortem sexual activity and injuries to sexual parts of the body are placed in this region, it should be noted that none of these cases involved actual removal of sexual parts of the body or gross mutilation. Indeed, the crime-scene action representing removal of a body part is located on the opposite side of the plot, indicating that it is not highly associated with the sexual theme. The actions seem, therefore, to reflect the theme of sexual homicide rather than a lust murder. In addition, the adjacent region below (“Instrumental: Resources”) contains actions having to do with a property crime. This suggests that the sexual homicides in this sample may be best construed as reflecting instrumental aggression: The offender has used the victim as an object for sexual gratification and the death has ensued more as a by-product of this objective. It is not surprising that the victim was significantly more likely to be female than male in these cases ($\chi^2 = 20.74, p < .001$). A possibility suggested by Salfati (2000) is that behavior reflecting experience of property crime has subsequently been enlarged into a rape script where sexual gratification is one more thing that can be stolen from a victim.

This region contains three crime-scene characteristics reflecting criminal behavior and intent: stolen property was identifiable (7%), property offense was identified (5%), and clothing was missing (2%). These characteristics suggest that the victim has
have been treated as a hindrance to the ulterior motive of the offender, that is, material gain (Salfati, 2000). However, the fact that clothing has been stolen indicates that the material gain is marginal, perhaps suggesting that the offender is socioeconomically extremely deprived. The offender is not relating to the victim as a person; rather, the victim is being used to satisfy the resource needs of the offender. In accordance with the preceding theme, homicide crime scenes that exhibit these characteristics are, therefore, best characterized as reflecting instrumental aggression where the offender co-opts the resources of the victim (Buss & Shackelford, 1997).

However, it is of note that identifiable property has been taken from the victim in these cases. This suggests that the offender is not particularly sophisticated in the criminal behavior, because such property could aid in their being caught and convicted. In some cases, even low-value items such as clothing were taken. In the previous study by Kivivuori (1999), the quarrel preceding the killing was usually a matter of the ownership of a liquor bottle. It seems, therefore, that these crimes may not necessarily be “burglaries gone wrong.” Rather, the killing may have occurred for other reasons, and the offender has become aware of the possibility of stealing property afterwards. This behavior still suggests an instrumental mind-set where the homicide provides an opportunity to satisfy material needs. In these cases, the victim was significantly more likely to be male than female ($\chi^2 = 4.27, p < .05$).

**Expressive: Firearm**

The following crime-scene characteristics indicative of particular actions were found in this region: body positioning indicating indifference regarding it being found (29%); weapon having been brought to scene (19%); victim having been shot (21%); and excessive number of shots having been fired (6%). In contrast to the two preceding themes, there is no indication at the crime scene itself that the victim is killed to satisfy any ulterior need of the offender. The offender brings a gun to the crime scene, kills, and leaves the body of the victim without engaging in any further activity. The proximity of the impulsive core of the space suggests that these cases are best construed as reactive and expressive in nature, where the person of the victim is important to the offender and the
killing occurs in response to an insult, physical attack, personal failure, or sexual jealousy (Daly et al., 1982; Dobash & Dobash, 1984).

Expressive: Body Parts Removed

The next theme contains only two crime-scene actions: A burglar alarm or telephone was disabled (2%), and a body part was removed (0.4%). These actions reflect a bizarre combination of planning and mutilation of the body. The actions are located at a considerable distance from all the other actions in the SSA space, suggesting quite a specific subset of actions. The empty space around these actions indicates that associated other actions that could clarify the meaning of this theme have not been coded (Can- ter & Heritage, 1990). However, the region is nearer to other regions, indicating an expressive crime scene where the person of the victim is important (see above and below this set). Therefore, it may be that the mutilation in these cases reflects a desire to cover the identity of the victim rather than satisfy any bizarre psychological need of the offender.

Expressive: Body Hidden

The last region of the space contained the following eight crime-scene actions: body being transported; body being hidden; victim being covered; victim being naked; victim being suffo- cated; victim being bound; victim being found in water; and weights being found attached to victim immersed in water. Salfati (2000) suggested that these actions indicate an expressive type of homicide, in the sense that the actions are centered on the need of the offenders to separate themselves from the victim and the crime scene because these elements may lead to the identification of the killer. This may suggest a prior relationship between the two parties. In addition, these actions are associated with the destruction of evidence at the crime scene, further supporting the idea of a need on the part of the offenders to separate themselves from aggravating evidence. In these cases, the victim was significantly more likely to be female than male ($\chi^2 = 7.32$, $p < .01$).
The Specificity of the Thematic Split

Next, each homicide was classified as belonging to a particular crime-scene action theme if it had at least one of the crime-scene actions in the region of that particular theme present. However, a particular homicide might have present actions from more than one of the regions simultaneously. This means that a single homicide could be classified as belonging to more than one of these themes at the same time. Clearly, to be useful as a classification device, the thematic split has to be relatively specific, that is, a single crime scene should not have characteristics from more than one of the themes because this precludes the possibility of finding clear associations between a crime-scene action theme and offender characteristics. In the present study, clear allocations would be expected because most of the regions are separated by wide areas in the SSA space containing no crime-scene actions, thereby creating relatively unrelated regions of actions.

The allocation of these themes for the Finnish homicides of this research are shown in Table 3. Of the crime scenes, 31 (6%) contained the “Instrumental: Sex” theme, 54 (11%) contained the “Instrumental: Resources” theme, 162 (32%) contained the “Expressive: Firearm” theme, 12 (2%) contained the “Expressive: Body Parts Removed” theme, and 86 (17%) contained the “Expressive: Body Hidden” theme.

A substantial portion of the homicides in this sample did not have a particular theme beyond the core and immediately surrounding variables, indicating an emotional and impulsive attack without any indications of planning. More important, the thematic split is quite specific. Only 10.6% of the homicides were...
characterized by an allocation to two or three themes. This degree of specificity represents a good starting point for an eventual exploration of associations of these themes with the background characteristics of the offenders because it suggests that it is at least possible to find clear and specific associations between a crime-scene action theme and offender characteristics.

DISCUSSION

The results of the present study show that there is a need to develop the general concepts of instrumental and expressive aggression as they relate to homicide. This distinction is useful, but it still leaves open questions about how it can be applied in a focused way to many different homicide types. The present study therefore elaborates the conceptual framework, further using evolutionary psychological hypotheses regarding the contexts and psychological mechanisms that produce homicide incidents (Buss & Shackelford, 1997).

The study suggests a large subgroup of offenses in which the act of the murder is the dominant impulsive activity and where there is no related preparation or dealing with the body. The crime-scene actions in this subgroup seem indicative of aggression as a reaction to threats to life, status, or resources, or aggression due to sexual jealousy (Buss & Shackelford, 1997). These are the most common and, in many ways, least deviant of homicides, as opposed to all the particular crime-scene themes that are either indicative of offenders who have the ability to use aggression for goal-directed purposes (Salfati, in press) or who engage in pre-planning or cover-up after the offense.

Among these offenses, the instrumental crimes can be distinguished between those that are part of property crimes and those that grow out of sexual crimes. Expressive crimes are differentiated further into those that imply multiple attacks to the victim’s body with subsequent attempts at hiding it and those that are related to frenzy that goes beyond these attacks to dismember the body. There is also a subtheme indicating a planned determination to kill the victim, notably through the use of firearms. However, there are no actions in this region suggesting any ulterior
motive beyond the killing in this theme, suggesting that it may be construed as at least partly expressive.

When the results of the present study are compared to those of Salfati (2000), both differences and similarities can be detected. The larger and more heterogeneous sample here, chosen systematically from all homicides in Finland, may have meant that more rare activities have been recorded, such as the removal of body parts and the presence of related arson, or that the Finnish homicides are different from British homicides in this respect. The wider availability of firearms in Finland has also meant that actions relating to their use are more prevalent in the present sample than in the British sample. The inclusion of these more rare behaviors and the larger sample size lead to the possibility that the present study provides a more general model that also generates a more detailed distinction between homicides. In particular, distinctions between the more extreme forms of expressive offenses are possible with the Finnish data. Nonetheless, the distinctions apparent in the present study can be seen reflected in the British study. This is most readily revealed by comparison of the relative position of key variables relative to one another in the SSA’s of crime-scene actions. For example, “Weapon to Scene,” “Property of Value Taken,” “Sexual Activity,” and “Body Hidden” all follow the same sequence around the SSA in both studies. The removal of body parts and the related activities do not occur in the British sample and seem to form a distinct region in the Finnish sample.

The correspondence in the structures of crime-scene actions between the Finnish homicides and the British homicides is somewhat surprising when one considers the differences in the victimization rates in the two countries. In Finland, the victimization rate is substantially higher than that for England and Wales (4.6 vs. 0.6 per 100,000 for males and 2.0 vs. 0.5 per 100,000 for females, respectively; see Leyton, 1995; Statistics Finland, 1999). The results suggest that the psychological processes underlying homicide are, however, very similar: Specifically, the analyzed homicides were most of time impulsive, frenzied attacks involving little evidence of planning or afterthought. In both samples, for those cases for which this did not represent an adequate characterization, a basic differentiation between expressive and instrumental homicides could, nevertheless, be observed. The finding
of similarity in the psychological mechanism underlying homicide is exactly what would be predicted by the evolutionary psychological approach, where particular contexts, interacting with different types of individuals trying to solve adaptive problems, are expected to produce homicidal incidents (Buss, 1999; Buss & Shackelford, 1997).

The similarity in the results of the two studies may also be partly explained by the method of statistical analysis used. Clearly, the nonmetric nature of the SSA makes it a robust method for detecting structural similarities of this nature in two samples that may differ in a number of ways. Because there were differences in the exact variables, their definitions, and frequencies, as well as in the absolute values of the associations between the variables, it would have been very difficult to observe the structural similarity by using any number of other methods, such as factor or cluster analyses, where such differences matter more and might have produced more dissimilar results.

In summary, the SSA of the crime-scene actions suggested the existence of a number of impulsive core actions that occur in most homicides. Over 40% of the cases did not involve any specific theme in addition to these core variables. However, areas of the SSA space making up five distinct themes within the general framework of expressive and impulsive aggression could also be identified. These were separated by areas containing no crime-scene actions and were, therefore, quite specific with little overlap between the themes, suggesting that the split into the subthemes was justified. However, it should be noted that, as a rule, the offenses shared with each other most of the high-frequency core variables in the center of the SSA figure, so the themes should not be misunderstood to be independent types of homicide. Rather, the theme indicates the particular emphasis that the offender has added to the basic nature of homicide. Further, the fact that the themes were located in a circular sequence around the core indicates that there is no simple linear dimension with two extremes that could explain the spatial patterning of the actions (Canter & Heritage, 1990). Instead, the five themes represent different emphases on the process of homicide. The findings of the present study demonstrate that the behavior of individuals committing homicide is not random. On the contrary, it was possible to deduce the psychological mechanisms underlying the homicides
from the exhibited crime-scene actions (Buss & Shackelford, 1997). This is an impressive result in itself, especially when the heterogeneous nature of the sample is considered: It contained legally defined homicides in Finland from a certain period of time varying from stranger homicides to infanticide.

In all, the demonstration of comprehensible coherence in the crime-scene actions of the offenders is a necessary precondition for exploring the possibility of predicting the background characteristics of the offenders (Canter & Heritage, 1990). Such relationships have been previously demonstrated in British homicides (Salfati, 2000; Salfati & Canter, 1999). These findings suggest that this is a possibility also worth pursuing in this sample. However, to demonstrate the practical usefulness of any such findings, those homicides where the offender was not immediately arrested and in which the police had some problems in identifying the offender should be analyzed separately, because it is in these homicides that input from such studies could contribute to identifying the offender.

REFERENCES


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Acknowledgment of Reviewers for the Special Issue

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Announcement

Sage Publications and the Homicide Research Working Group are pleased to announce the appointment of Thomas A. Petee, Auburn University, and Jay Corzine, University of Central Florida, as the new co-editors of Homicide Studies. The journal will be housed at Auburn University for 2002-2004 and at the University of Central Florida for 2005-2007.

Manuscripts should be submitted to the new editorial office:

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Submission Guidelines

Submissions for review by Homicide Studies should be empirically based, using quantitative or qualitative methods. Theoretical papers, research summaries, and public policy reviews are also welcomed. Submission of manuscripts dealing with violence as a generic issue are discouraged. However, treatments of other areas of violent behavior would be considered if the central concern is the relationship between the violence and homicide. The editor also welcomes proposals for special issues. Manuscripts should be submitted in triplicate, preferably not exceeding 30 pages, and should begin with a brief abstract of about 100 words. Submissions should be typewritten; double spaced; have footnotes, references, tables, figures, and charts on separate pages; and should follow the format specified in the Publication Manual of the American Psychological Association (fifth edition). Manuscripts will be sent out anonymously for editorial evaluation, so the author’s name, affiliation, mailing address, and phone number should be included on a separate cover page.

Also, please include an e-mail address. A copy of the final revised manuscript saved on an IBM-compatible disk must accompany the final version of any submission accepted for publication. Submission of the manuscript implies that it has not been previously published and is not under consideration elsewhere.