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Taking on the Unknown

A Qualitative Comparative Analysis of Unknown Relationship Homicides

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Aside from noting the dramatic rise in their numbers, homicides with unknown victim/offender relationships have attracted little research attention. This study uses Qualitative Comparative Analysis and data from the Supplementary Homicide Reports for 1976 through 1998 to examine the nature of unknown relationship homicides and changes in their structure over time. The findings indicate that a large number of unknown relationship cases are contained within a few prevalent homicide situations while also occurring in a diverse array of less common situations. The situational context of unknown homicides exhibits considerable change over time, shifting from the killing of older White males with a variety of weapons to killings involving young Black males with guns. Although unknown and stranger homicides frequently share common structures, they demonstrate notable differences as well, suggesting that unknown relationships cannot automatically be assumed to involve strangers. Implications of the findings for policy and future research are discussed.

Keywords: *uncleared homicide; victim-offender relationship; homicide circumstances; motive; qualitative comparative analysis*

The past several decades have witnessed a dramatic decline in the percentage of homicides cleared by arrest. More specifically, homicide clearance rates in the United States have declined from 92.3% in 1960 to 65.7% in 1996 (Riedel, 1997). This decline in homicide clearance rates has led to an increasingly high percentage of cases in which the relationship between the victim and offender is unknown. In any given year, roughly one third of homicides nationally now have an unknown victim/offender relationship.

Beyond the substantial rise in their numbers, an examination of unknown relationship homicides is important for several additional reasons. First, to understand why this increase in uncleared homicides has occurred requires investigating whether there has been a change in the nature of these homicides over time. For example, do cases with unknown victim/offender relationships have a consistent structure over time, or are there emergent forms of unknown relationship homicides? Strategies for compensating for these missing data on victim/offender relationships as well as policy implications for addressing the increasing rate of uncleared cases would necessarily differ depending on which of these situations holds.

Second, the existence of a sizeable category of unknown relationships dramatically alters our conclusions about the empirical nature of homicide depending on how we classify these cases. For example, Jenkins (1994) showed that the alleged serial killer epidemic was constructed in part by the dubious classification of homicides with unclear motives or victim/offender relationship as possible serial killings. Similar claims about the dramatic rise in random violence by strangers also have been generated by serious inferential leaps about the characteristics of homicides with unknown victim/offender relationships (Best, 1999). Adding counts of cases of unknown relationships with homicides recorded by police as involving strangers, the FBI was able to claim that stranger homicides had risen to the point of constituting roughly 53% of all homicides (Riedel, 1998). The ability to claim that more than half of homicides involves strangers provides a platform for greater claims on criminal justice resources. If criminological theories and public policy are derived from the empirical distribution of homicide, the rise in "unknown" homicides over time makes it even more important that we investigate systematically the sources of similarity and differences between "unknown" and "known" relationship homicides.

Whereas the classification of victim/offender relationships as unknown may simply be a reflection of the uncleared status of the case at the time police records are compiled (see Maxfield, 1989; Riedel, 1987), several important questions remain surrounding these homicides. The first is to what extent the characteristics of these homicides resemble homicides with known victim/

offender relationships and conversely, to what degree they are qualitatively distinct. The second issue concerns whether there has been a change in the nature of homicides with unknown victim/offender relationships over time. In other words, do the types of homicides classified as having an unknown relationship in the 1970s display the same characteristics as unknown relationship cases in the 1990s? The final question is to what degree a homicide in which the victim/offender relationship is unknown can be assumed to involve strangers. The first two of these questions have rarely been addressed, and what little evidence that exists has not been collected systematically. The third issue has received some attention in the criminological literature, but the findings are mixed.

Using Qualitative Comparative Analysis (QCA) and data from the U.S. Supplementary Homicide Reports (SHR) for 1976 through 1998, the current study explores these three issues about the nature of unknown relationship homicides. We begin with a review of the existing evidence on unknown homicides and then describe how QCA can be used to explore the nature of the similarity and differences between unknown and known homicides. The results of our comparative analysis are then discussed in terms of their implications for future research.

REVIEW OF THE LITERATURE

In line with the three questions of central interest to this research, we draw on previous literature that (a) compares unknown victim/offender relationships to other relational categories, (b) documents changes over time in unknown victim/offender relationship homicides, and (c) contributes to the debate concerning whether unknown victim/offender relationships are mainly stranger killings.

Comparing Characteristics of Unknown to Other Relationship Categories

In one of the few studies addressing this issue, Petee, Weaver, Corzine, Huff-Corzine, and Wittekind (2001) found that homi-

cides with unknown victim/offender relationships are most similar to stranger homicides, although they share several characteristics that are similar to acquaintance homicides. However, they also noted that unknown relationship homicides are unique with respect to some situational characteristics, resembling neither stranger nor acquaintance killings. This research revealed a higher classification of unknown victim/offender relationships as drug-related compared to family or stranger killings. Unknown homicides were less likely than stranger homicides but more likely than family or acquaintance homicides to involve a handgun (although only marginally so in the case of acquaintances). Homicides involving unknown relationships were also more likely to involve Black victims.

Decker's (1993) research on St. Louis homicides from 1985 to 1989 indicated that homicides involving unknown relationships are more often instrumental, occur in an auto, and are committed with a gun than other relationship categories (classified as friends, romantic link, relative, acquaintances, and strangers in this study). In both of these studies, comparisons between unknown and other types of relationships across victim and offense attributes have been carried out sequentially (i.e., one variable at a time). We extend these studies by using a methodological technique (i.e., QCA) that allows for an examination of how unknown relationship cases differ from others with respect to the full combination of these attributes.

Trends in Unknown Victim/Offender Relationships

The study by Petee et al. (2001) compared unknown to other relationship categories over a 6-year period from 1987 through 1992. They found that compared to family homicides, unknown relationship cases were increasingly more likely to involve handguns and male victims over the time period examined. Unknown relationship cases were increasingly less likely to involve knives over time compared to both family and acquaintance homicides. Compared to stranger homicides, unknown relationship cases were increasingly more likely to be drug related from 1987 until 1990, after which the differences began diminishing.

Although various other studies document trends in unknown relationship homicides over time with respect to their *quantity*

(see e.g., Munford, Kazer, Feldman, & Stivers, 1976; Riedel, 1987, 1998; Rojek, 1996; Zahn & McCall, 1999), to our knowledge no one has examined whether a qualitative change in the nature of these cases has occurred as well. However, whether the change has been quantitative or qualitative has very different implications. If the structure of unknown relationship homicides has not changed over time, then the recent rise in these cases would simply reflect an increased volume of basically the same type of homicide. In other words, the rise is a reflection of the fact that there are now more of these types of cases but their structure has remained stable. On the other hand, if there has been a qualitative change in the types of cases that are classified as having unknown relationships, the increase would be more indicative of a change in the nature of killings over time. Under these conditions, an explanation for the rise in unknown relationship cases should be focused on emergent forms of killings in recent decades that pose obstacles to identifying the perpetrator.

Unknown Relationships and Stranger Homicides

The situation of high percentages of unknown victim/offender relationship homicides in recent decades has inspired a debate about whether the cases in this undetermined category are all or primarily all stranger homicides. Three basic positions have been taken on this issue.

The first of these essentially equates *unknown* with stranger, hypothesizing that the inability to determine a prior relationship between the victim and offender indicates that there was not one (e.g., Maxfield, 1989; Riedel, 1987; Rojek & Williams, 1993). In other words, they were strangers. However, empirical support for this position that unknowns are stranger homicides is weak.

In his classic study of homicide in Philadelphia, Wolfgang (1958) concluded that many of the cases in his research in which the victim/offender relationship was classified as unknown were likely stranger homicides. He did so by implying that the high level of robbery-related killings among the unknowns was indicative of a stranger relationship. However, a number of studies have since found that not only do the categories of felony/instrumental and stranger homicides not completely overlap but that the overlap is far less than has typically been assumed (see e.g., Block,

1987; Decker, 1996; Riedel & Zahn, 1985; Williams & Flewelling, 1988; Zahn & Sagi, 1987; Zimring & Zuehl, 1986).

The second position is that homicides where the relationship is unknown are distributed in the same proportions as cases involving known victim/offender relationships. In other words, if 15% of known victim/offender relationship homicides involved strangers, approximately 15% of the cases in the unknown category are also killings of strangers. This position is supported by research by Scott Decker (1993).

Decker (1993) recorded victim/offender relationships on the basis of available paper records from 1985 through 1989 from the St. Louis Police Department using an expanded classification system. In doing so, he was able to reduce the number of cases classified as unknown to 4%. After recalculating the proportion of cases for each victim/offender relationship with the unknowns omitted, the resulting distribution across relationship categories corresponded closely to national data. Decker found that rather than stranger homicides accounting for the majority of unclassified events, the distribution of unknowns is comparable to that for known relationships.

The third view is that the reality lies somewhere in between these other two positions. Rather than the category of undetermined cases being solely constituted of stranger homicides, it may include cases of all types of victim/offender relationships but be made up disproportionately of stranger killings. This latter position is supported by a small body of research seeking to statistically adjust for missing data on victim/offender relationships. For example, Williams and Flewelling (1987) estimated stranger homicides from those classified as unknown using a variable measuring felony involvement (homicides that occurred during a robbery or rape, etc.). They formulated a procedure to estimate the proportion of stranger homicides using an adjustment based on the circumstances surrounding the case. Using this adjustment on SHR data from 1980 to 1984 for cities of 100,000 or more, the metropolitan areas in which they are located, and the 50 U.S. states, they estimated stranger homicides to represent 25% of all homicides. Using this additional information provided by the situational circumstance results in a downward adjustment of family and acquaintance homicide rates and an upward adjustment

of stranger rates when compared to an adjustment involving a direct extrapolation of the constitution of known cases to unknown cases.

Regoeczi and Riedel (2003) used the expectation-maximization algorithm to impute values for unknown victim/offender relationships for Chicago and Los Angeles using a wide range of victim, offender, and offense characteristics as predictors. The findings indicated that many of the unknown cases likely involve intimate partners, other family, and friends/acquaintances. However, they disproportionately involve strangers. Yet even after imputations, stranger homicides do not increase more than approximately 5%.

The focus of an analysis by Pampel and Williams (2000) was to compare four alternative procedures of compensating for missing data on victim/offender relationships using both cross-sectional and longitudinal estimation. These methods ranged from weighted, unadjusted methods (which adjust for underreporting by police agencies but do not change the distribution of types of homicides) to weighted, between-city methods (which weights for nonreporting and imputes missing data on the victim/offender using data on victim and circumstance characteristics of homicide incidents). They conducted an analysis based on homicide data for 91 of the 100 largest cities in the United States in 1990 after 9 cities that did not report data to the SHR were excluded. These results were compared to those produced using the sample of 168 cities of 100,000 or more from the research by Williams and Flewelling (1987).

Only the weighted within-city and between-city methods alter the distribution of cases within relationship categories and thus are of interest to us here. The former procedure produced no change in the percentage of homicides involving intimates or family members, whereas acquaintance homicides drop between 4% and 5% and stranger homicides increase between 2% and 6%. Using the between-city method resulted in a decrease in the percentage of homicides for intimates and family members. With respect to acquaintance and stranger homicides, there are very notable differences depending on the year examined. For example, in 1980 this procedure led to a 5% reduction in homicides involving acquaintances, but it yielded a 4% increase in 1990.

Stranger homicides increase as much as 14% in 1980 but only 3% in 1990. That these adjustment procedures have a very different effect on the distribution of cases within relationship categories over time may reflect a change in the types of cases classified as having an unknown victim/offender relationship. As Pampel and Williams (2000) noted, homicides with unknown victim/offender relationships have increasingly moved toward conforming to the characteristics of acquaintance homicides over time.

Messner, Deane, and Beaulieu (2002) used an approach to imputing unknown victim/offender relationships that is based on a log-multiplicative model known as the heterogeneous column RC(L) model, where the category of unknown victim/offender relationships is “scaled” relative to those categories in which the victim/offender relationship is known based on associations with other variables. The scale scores are then used to allocate cases with unknown victim/offender relationships. Using this technique, values are imputed for unknown victim/offender relationships in SHR data separately for the years 1996 and 1997 based on the association between victim/offender relationships and circumstances (felony, other felony, nonfelony, other nonfelony, and undetermined). This imputation method results in a greater proportion of unknown victim/offender relationships being allocated to the stranger category (which increased from 17% to 24%) than the methods used by Williams and his colleagues (Pampel & Williams, 2000; Williams & Flewelling, 1987), whereas the proportion of cases in all other categories declined after imputation.

This small body of research makes an important contribution to the homicide literature in tackling the much-ignored problem of how to handle cases with unknown victim/offender relationships. However, the focus of these studies has been largely on the estimation of missing data with very little attention directed toward the nature of these unknown victim/offender relationship cases. Perhaps even more important, this research has not systematically examined changes in the structure of unknown relationship homicides over time. If the structure of homicide situations involving unknown victim/offender relationships differs substantially across time periods, this could have important implications for approaches to estimating missing data.

QUALITATIVE COMPARATIVE ANALYSIS

As a methodological approach for developing empirically based typologies, Qualitative Comparative Analysis has been increasingly used to examine similarities and differences in the combinations of attributes that underlie a classification variable (see Amenta & Poulsen, 1994; Coverdill, Finlay, & Martin, 1994; Drass & Ragin, 1989; Miethe & Drass, 1999; Ragin, 1987, 2000). The QCA method allows the logic of intensive, case-oriented research to be applied to studies involving substantial sample sizes (Ragin, 2000).

QCA is well suited as an analytic approach for the study of homicide situations because it maintains the integrity of the homicide situation as the unit of analysis. This is a reflection of its case-oriented approach that considers each homicide case holistically as a configuration of attributes. In the current study, QCA permits an examination of the configurations or combinations of attributes of unknown victim/offender relationships. In this respect, we are able to assess whether different homicide structures (i.e., combinations of attributes) underlie cases with unknown relationships compared to those with known relationships not by sequentially analyzing each variable but by examining how different attributes combine to form qualitatively distinct profiles.

An analysis using QCA begins with the construction of a truth table that lists all distinct configurations of the victim and situational variables appearing in the data. If nine binary variables are used to define the structure of homicide situations, there are 512 (2^9) possible combinations of attributes. The truth table provides information about which configurations or combinations of attributes are (a) unique to unknown victim/offender relationships (i.e., observed only among the unknown and not observed among the known relationship cases), (b) unique to known victim/offender relationships (i.e., observed only among known and not observed among unknown relationship cases), (c) common to both unknown and known victim/offender relationships (called *contradictions*), and (d) logical possibilities that are not observed in the data. By comparing the relative numbers of cases within these unique and common configurations, QCA provides

an empirical basis for determining the qualitative distinctness of cases involving unknown versus known victim/offender relationships.

THE CURRENT STUDY

This analysis uses SHR data from 1976 through 1998 to address the issue of unknown victim/offender relationships on three fronts. First, we use QCA to examine whether homicides with unknown victim/offender relationships are qualitatively different from those in which the victim/offender relationship is known. Second, we examine whether the situational structure of homicides involving unknown victim/offender relationships has undergone any change over time in the hopes of contributing to our understanding of the dramatic increase in the percentage of unknown cases in recent decades. Finally, we test the claim that unknown homicides are stranger homicides by comparing the structure of these two types of homicides to assess the degree to which they are common.

The structure of homicides is defined for the purposes of these analyses on the basis of attributes for which information is likely to be known. Prior research has shown, not surprisingly, that homicide cases missing information of victim/offender relationship also tend to be missing information on other offender-related variables such as offender gender, age, and race (Regoeczi, Miethe, & Drass, 2001; Regoeczi & Riedel, 1999). Although the level of missing data for variables representing the circumstances or motive is typically slightly less than for offender variables, it too is often missing where the victim/offender relationship is unknown.¹ As a result, the following variables were used to define the structure of homicide situations: victim gender (coded male vs. female), victim race (White vs. Black vs. other), victim age (< 20 vs. 20 to 29 vs. 30 or older), lethal weapon (gun vs. knife vs. other), multiple victim (no vs. yes), and urban location (population over 100,000 vs. less populated areas). There are little missing data in the SHR files for these variables.

In applying QCA, we use a relative or probabilistic rule for defining unique profiles and contradictions. Specifically, we define a configuration as unique when its relative frequency

within that combination exceeds its overall marginal distribution by 10 percentage points. For example, given that 33.3% of the homicides in the SHR across the years investigated involve unknown victim/offender relationships, a particular combination of attributes would be deemed “relatively unique” to unknown victim/offender relationships if they accounted for more than 43.3% of the cases in this particular profile. A 10-percentage-point difference over its marginal proportion is the rule used here to define relatively unique configurations.² Such a probabilistic decision rule is commonly used when QCA is applied to large samples (see Amenta, Carruthers, & Zylan, 1992; Amenta & Halfmann, 2000; Miethe & Drass, 1999; Ragin, Mayer, & Drass, 1984).

RESULTS

The past three decades have witnessed an increase in unknown victim/offender relationships (see Figure 1). Although there has been a great deal of speculation regarding what these unknown victim/offender relationships represent, for the most part these assumptions have remained untested. The current study provides empirical answers to these questions.

We begin by addressing the issue of whether homicides where the victim/offender relationship is unknown have a unique structure compared to homicides with known victim/offender relationships. Qualitative comparative analysis is used to compare unknown and known victim/offender relationship homicides for the full set of years under examination.

Using the 10% difference rule we find that the majority of observed homicide situations are either relatively unique to unknown victim/offender relationship homicides (47.8%) or known victim/offender relationship homicides (24.7%), suggesting that the nature of these killings are qualitatively different (Figure 2). This pattern is consistent with the findings of Petee et al. (2001) that unknown relationship homicides exhibit a unique pattern for some situational characteristics, resembling neither acquaintance nor stranger cases. However, these unique profiles for unknown homicides account for less than one fifth of homicides that have unknown relationships. In fact, about one half of

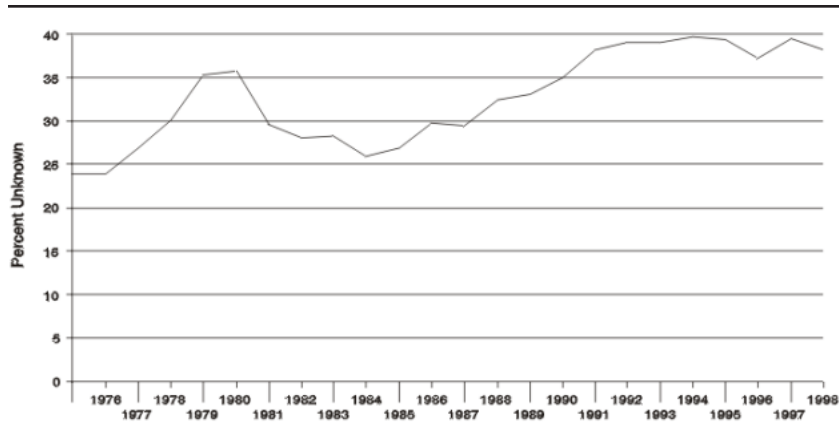


Figure 1: Percentage of Unknown Victim/Offender Relationship Homicides, 1976-1998

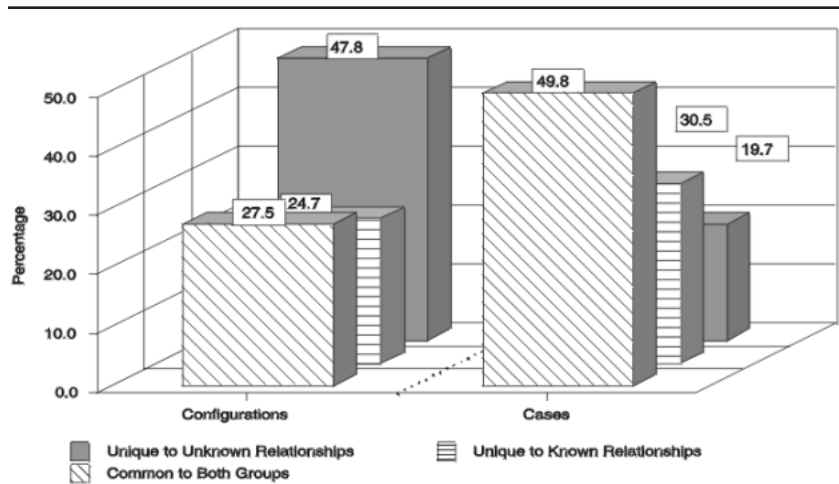


Figure 2: Unique and Common Profiles for Unknown and Known Victim/Offender Relationships

U.S. homicides in the SHR files are represented by combinations of victim and offense attributes that are common to both unknown and known relationships.

Homicide situations involving unknown relationships display considerable diversity in their structures. The 10 most prevalent profiles unique to unknown homicides are shown in Table 1. The first 2 of these profiles stand out as being particularly dominant,

TABLE 1
Qualitative Comparative Analysis of Situations Common and Unique
to Unknown and Known Victim/Offender Relationships, 1976-1998

	<i>Profile n</i>	<i>%</i>
Situations unique to unknown victim/offender relationships		
1. Victim male, Black, 20-29, gun, single victim, urban	18,414 of 38,363	48
2. Victim male, Black, < 20, gun, single victim, urban	6,589 of 14,976	44
3. Victim male, Black, 20-29, gun, multiple victims, urban	1,023 of 1,930	53
4. Victim male, White, 20-29, gun, multiple victims, urban	833 of 1,893	44
5. Victim female, White, 20-29, other weapon, single victim, urban	747 of 1,697	44
6. Victim female, Black, 20-29, other weapon, single victim, urban	846 of 1,692	50
7. Victim male, White, 30-98, unknown weapon, single victim, urban	1,140 of 1,652	69
8. Victim male, Black, 20-29, other weapon, single victim, urban	700 of 1,591	44
9. Victim male, Black, 30-98, gun, multiple victims, urban	661 of 1,407	47
10. Victim male, White, 30-98, unknown weapon, single victim, nonurban	813 of 1,401	58
Situations unique to known victim/offender relationships		
1. Victim male, White, 30-98, gun, single victim, nonurban	17,847 of 22,309	80
2. Victim male, Black, 30-98, gun, single victim, nonurban	9,715 of 11,705	83
3. Victim male, White, 20-29, gun, single victim, nonurban	9,204 of 11,651	79
4. Victim male, Black, 20-29, gun, single victim, nonurban	7,720 of 9,772	79
5. Victim female, White, 30-98, gun, single victim, nonurban	7,346 of 8,162	90
6. Victim female, White, 30-98, gun, single victim, urban	4,820 of 5,951	81
7. Victim male, White, 30-98, knife, single victim, nonurban	4,317 of 5,534	78
8. Victim male, Black, 30-98, knife, single victim, nonurban	3,566 of 4,007	89
9. Victim male, White, < 20, gun, single victim, nonurban	2,942 of 3,724	79
10. Victim male, White, 20-29, knife, single victim, nonurban	2,906 of 3,544	82
Situations common to unknown and known victim/offender relationships		
1. Victim male, Black, 30-98, gun, single victim, urban	35,161	
2. Victim male, White, 30-98, gun, single victim, urban	27,308	
3. Victim male, White, 20-29, gun, single victim, urban	21,349	
4. Victim male, Black, 30-98, knife, single victim, urban	11,252	
5. Victim male, White, 30-98, knife, single victim, urban	9,108	
6. Victim male, White, < 20, gun, single victim, urban	7,870	
7. Victim male, White, 30-98, other weapon, single victim, urban	7,856	
8. Victim male, Black, 20-29, knife, single victim, urban	6,245	
9. Victim male, White, 20-29, knife, single victim, urban	5,845	
10. Victim male, White, 30-98, other weapon, single victim, urban	5,586	

NOTE: For situations unique to unknown victim/offender relationships, 21.7% of all unknown relationship homicides are explained by these dominant profiles (31,766 of 146,556). For situations unique to known victim/offender relationships, 24.0% of all known relationship homicides are explained by these dominant profiles (70,383 of 293,398).

with the number of cases falling off dramatically beginning with the third profile. These 2 dominant profiles involve homicides of Black males younger than 30 years of age who are the lone victims of lethal shootings committed in urban areas. This pattern seems to suggest that on the one hand there are a small number of prevalent homicide situations that pose considerable obstacles in identifying the relationship of the victim to the offender, but at the same time, undetermined relationships arise in a wide array of less frequent contexts. Thus, both standard situational contexts across jurisdictions as well as a number of more idiosyncratic circumstances may characterize homicides involving unknown relationships.

Situations unique to known relationships exhibit greater situational clustering than those unique to unknown relationships. This is evidenced by the finding that a larger number of cases fall within a fewer number of configurations for known relationships, indicating that they are concentrated within a smaller range of profiles. In contrast to homicide situations involving unknown relationships, the most dominant profiles for cases where the relationship is known all involve lone victims and are primarily committed with firearms against older victims in nonurban locations. These situations may be reflective of domestic killings where there is greater ability to identify the perpetrator early on in the reporting process.

Configurations that are common to both types of homicides represent just over one quarter (27.5%) of the profiles, but they account for roughly half of all homicide cases (49.8%) nationally from 1976 through 1998 (Figure 2). The dominant profiles of situations that are common to unknown and known relationships all involve lone male victims killed in urban areas. The victims are frequently older (30 and older) and White. These profiles may represent homicide situations that at times lead to a quick identification of a perpetrator during the early stages of the police investigation, but in other cases this information is more difficult to obtain, resulting in a designation of unknown for the relationship of the victim to the offender. For example, they may represent killings stemming from altercations or the commission of other felonies (i.e., robbery) occurring between acquaintances or strangers where the determination of the relationship may be dependent on

factors such as the presence and willingness of witnesses to provide information about a suspect.

Given the substantial increase in cases with unknown victim/offender relationships over the past few decades, an important empirical question is whether the nature of these homicides has changed over time. We use QCA to examine this issue by comparing unknown victim/offender relationship cases in the 1970s versus the 1990s.

Comparisons over time indicate fundamental changes in homicide situations underlying unknown victim/offender relationship cases. Specifically, more than half of the homicide situations are unique to either the 1970s or the 1990s (see Panel A of Table 2). These unique profiles account for 43% of unknown victim/offender relationship homicides during these two decades. These findings support the notion that the nature of these types of homicides has shifted over time.

Further examination of the unique and common profiles for each decade reveals some very interesting patterns underlying this change. First, the single most powerful attribute that distinguishes situations unique to the 1970s versus the 1990s is the victim's race (Panel B of Table 2). More specifically, the victim is White in 48% of unknown victim/offender relationship homicides that are unique to the 1970s compared to only 17.9% of those in the 1990s. In contrast, the victim is Black in only 22.3% of situations unique to the 1970s compared to 47.6% in the 1990s. The other major shift has occurred with respect to the weapon used. Situations unique to the 1970s have a much higher proportion of knives, whereas guns are far more prevalent in situations unique to the 1990s.

Some of these patterns are also evident from an examination of the 10 most dominant unique profiles for each decade (Panel C of Table 2). The majority of the dominant profiles in the 1970s involve the killing of a lone White male who is 20 years of age and older. In 4 of these situations, the homicide is committed with a knife. Two of the profiles involve female victims who are killed with a weapon other than a firearm or knife, which is perhaps indicative of strangulation. In the 1990s, the dominant profiles of unknown victim/offender relationship homicides look very different. They all involve minority victims (mostly Black), they are

TABLE 2
Qualitative Comparative Analysis of Stability and Change in Unknown
Victim/Offender Relationship Homicide Situations Over Time

<i>Panel A: Configurations and Cases (Using 10% Difference Rule)</i>				
	<i>Configurations</i>		<i>Homicide Cases</i>	
	<i>n</i>	<i>%</i>	<i>n</i>	<i>%</i>
Number of situations observed	472		89,708	
Situations unique to the 1970s	141	29.9	17,105	19.1
Situations unique to the 1990s	162	34.3	21,610	24.1
Contradictions (common situations) for both decades	169	35.8	50,993	56.8
<i>Panel B: Victim and Offense Characteristics Underlying Homicide Situations Unique and Common to the 1970s and 1990s (%)</i>				
<i>Characteristic</i>	<i>Uniquely 1970s</i>	<i>Uniquely 1990s</i>	<i>Both Decades</i>	
Male victim	49.3	53.2	50.9	
White victim	47.7	17.9	35.9	
Black victim	22.3	47.6	39.3	
< 20-year-old victim	36.9	32.8	28.0	
20- to 29-year-old victim	38.7	33.6	27.2	
Gun	17.7	44.3	49.2	
Knife	40.3	29.2	23.4	
Multiple victim	47.5	50.0	27.8	
Large-city location	46.8	51.2	55.6	
<i>Panel C: Unique Profiles Within the Most Dominant Homicide Situations</i>				
	<i>Profile ns</i>		<i>%</i>	
Unknown victim/offender relationships in the 1970s				
1. Victim male, White, 30-98, gun, single victim, nonurban	857	of 2,504	34.2	
2. Victim male, White, 30-98, knife, single victim, urban	788	of 1,868	42.2	
3. Victim male, White, 20-29, gun, single victim, nonurban	499	of 1,410	35.4	
4. Victim male, White, 20-29, knife, single victim, urban	468	of 994	47.1	
5. Victim female, White, 30-98, other weapon, single victim, urban	350	of 929	37.7	
6. Victim male, White, 2029, other weapon, single victim, nonurban	294	of 797	36.9	
7. Victim male, Black, 20-29, knife, single victim, urban	299	of 729	41.0	
8. Victim male, White, 30-98, knife, single victim, nonurban	232	of 629	36.9	
9. Victim female, White, 20-29, other weapon, single victim, urban	150	of 371	40.4	
10. Victim male, Black, 20-29, other weapon, single victim, urban	133	of 348	38.2	

(continued)

TABLE 2 (continued)

	<i>Panel C: Unique Profiles Within the Most Dominant Homicide Situations</i>	
	<i>Profile ns</i>	<i>%</i>
Unknown victim/offender relationships in the 1990s		
1. Victim male, Black, 20-29, gun, single victim, urban	10,677 of 12,328	86.6
2. Victim male, Black, < 20, gun, single victim, urban	4,595 of 4,945	92.9
3. Victim male, Black, 20-29, gun, multiple victim, urban	678 of 770	88.1
4. Victim male, Black, < 20, gun, single victim, nonurban	521 of 566	92.0
5. Victim male, Black, < 20, gun, multiple victim, urban	246 of 266	92.5
6. Victim male, Black, 20-29, gun, multiple victim, nonurban	109 of 123	88.6
7. Victim female, Black, < 20, gun, multiple victim, urban	80 of 92	87.0
8. Victim male, Black, < 20, gun, multiple victim, nonurban	36 of 38	94.7
9. Victim male, other, < 20, gun, multiple victim, urban	20 of 23	87.0
10. Victim female, other, 20-29, gun, single victim, nonurban	12 of 13	92.3

NOTE: Model: Yr70v90 = vicmale + vicwhite + vicblack + vic<20 + vic2029 + gun + knife + multvic + urban. For unknown victim/offender relationships in the 1970s, 18.7% of all unknown relationship homicides in the 1970s are explained by these dominant profiles (4,070 of 21,726). For unknown victim/offender relationships in the 1990s, 25.0% of all unknown relationship homicides in the 1990s are explained by these dominant profiles (16,974 of 67,982).

all committed with guns, the victims tend to be younger (in 6 of the 10 they are younger than 20), and there are often multiple victims.

These patterns strongly suggest that homicide situations that result in unknown victim/offender relationships have changed substantially over time. Although the exact nature of these killings is subject to some degree of speculation, the pattern seems to suggest a shift from what may have been the killing of older White males during the commission of robberies and other felonies to killings of young Black males resulting from gang- and drug-related disputes.

This change over time may indicate that the stereotypical killing of the White middle- or upper-class businessman during a bungled attempt to steal his wallet and/or jewelry as cases where police are unlikely to identify a perpetrator have become relatively extinct over time. Perhaps increasingly sophisticated forensic technology, greater reliance on video surveillance, more

extensive self-protective actions, and/or reduced access to such targets has reduced the prevalence of such homicides over time. The shift toward a pattern of unknown victim/offender relationships involving young Black males killed with guns may suggest that the emergence of the crack market in the 1980s is partly responsible for the increase in unknown relationship homicides. Homicide detectives seeking to identify perpetrators of homicides involving young minority males shot during drug transactions and as part of gang rivalries are likely to face considerable obstacles, including a code of silence adhered to by members of the community, witnesses who distrust police or are being sought on warrants, intense fear of retaliation, and a motive that can often be linked to multiple suspects.

Unknown Versus Stranger Homicides

A final issue concerning unknown victim/offender relationship homicides pertains to the speculation that these are predominantly stranger killings. This assumption has led some researchers to combine these unknown cases with those in the stranger category (e.g., Bailey & Peterson, 1995). The existing research that directly or indirectly has examined the claim that unknown victim/offender relationship homicides are predominantly stranger killings has produced varied conclusions (see Decker, 1993; Messner et al., 2002; Regoeczi & Riedel, 2003; Williams & Flewelling, 1987). An investigation of the extent to which these two types of homicides share structural characteristics, however, has not been used as an approach thus far. We attempt to fill that void here by using QCA to examine whether homicide situations involving strangers and unknown victim/offender relationships share a common structure.

The results of this QCA analysis, presented in Table 3, provide evidence both for and against this argument. First, we find that the majority of homicide situations (48.7%) are unique to homicides in which the victim/offender relationship is unknown. Approximately 20% are unique to stranger homicides. However, the 165 homicide situations that are common to both unknown and stranger homicides account for almost three quarters of the homicide cases (74.2%). These findings suggest that an underlying structure of homicide situations is shared by a large number of

TABLE 3
Qualitative Comparative Analysis of Homicide Situations
Unique to Unknown and Stranger Homicides, 1976-1998

	<i>Panel A: Configurations and Cases</i> <i>(Using 10% Difference Rule)</i>			
	<i>Configurations</i>		<i>Homicide Cases</i>	
	n	%	n	%
Number of situations observed	524		208,407	
Situations unique to unknown victim/ offender relationships	255	48.7	24,406	11.7
Situations unique to the strangers	104	19.8	29,406	14.1
Contradictions (common situations) for both groups	165	31.5	154,595	74.2
	<i>Panel B: Victim and Offense Characteristics</i> <i>Underlying Homicide Situations Unique and</i> <i>Common to Unknown Victim/Offender</i> <i>Relationship and Stranger Homicides (%)</i>			
<i>Characteristic</i>	<i>Uniquely</i> <i>Unknown</i>	<i>Uniquely</i> <i>Stranger</i>	<i>Both Groups</i>	
Male victim	44.2	67.0	49.7	
White victim	29.7	35.9	42.8	
Black victim	45.5	12.8	34.5	
< 20-year-old victim	38.8	31.6	30.1	
20- to 29-year-old victim	33.8	27.4	33.3	
Gun	27.2	46.5	37.8	
Knife	36.7	26.3	27.3	
Multiple victim	38.4	53.8	45.5	
Large-city location	54.5	38.5	57.0	

NOTE: Model: Unknown = vicmale + vicwhite + vicblack + vic<20 + vic2029 + gun + knife + multvic + urban.

unknown and stranger homicides, thereby lending support to the argument that many of these unknown homicides may in fact involve strangers.

At the same time, however, several victim and offense characteristics appear to strongly distinguish between unknown and stranger homicides (see Panel B of Table 3). For example, uniquely unknown victim/offender relationship homicides are more than three and half times more likely to involve a Black victim. Uniquely stranger homicides are almost twice as likely to involve guns. Male victims and multiple victims are also much more prevalent among uniquely stranger than uniquely unknown

n homicides. Thus, although situations involving unknown victim/offender relationship and stranger homicides appear to share a similar underlying structure in a substantial proportion of cases, the importance of particular attributes underlying these situations varies across the two groups, suggesting that the entire group of homicides for which the victim/offender relationship is undetermined cannot simply be equated with those classified as stranger homicides.

Further evidence against the claim that unknown relationship cases can be assumed to involve strangers derives from a supplemental QCA analysis in which we compared the structure of homicide situations for unknown and acquaintance homicides.³ Although fewer cases are accounted for by homicide structures common to both of these groups than was found when comparing unknown to stranger homicides, more than half (55.2%) of all homicides fall within configurations common to acquaintance and unknown relationships. These findings are consistent with those of Petee et al. (2001) which demonstrate commonalities between unknown relationships and both stranger and acquaintance killings.

DISCUSSION AND CONCLUSION

Despite a dramatic rise in the number of unknown relationship homicides in recent decades, relatively little is known about the nature of these cases. The current study seeks to fill this void by examining the extent to which these homicides are qualitatively unique and whether their structure has changed over time.

Our results indicate that although some cases involving unknown victim/offender relationships are qualitatively distinct, approximately half of all homicide cases fall within configurations that are common to known and unknown victim/offender relationships. We also find strong evidence of change in the structure of unknown victim/offender relationship homicides over time. Much of this shift in nature appears to be the result of an increase in Black victims and the use of guns.

The finding of a shift in the structure of unknown relationship cases over time has important ramifications for efforts to adjust for missing data on this variable. Specifically, some of the more

cutting-edge techniques for imputing missing data (e.g., the expectation-maximization algorithm and multiple imputation) use other variables in the data set as predictors in the imputation model. However, if the relationship of the predictor variables to those with missing data varies across time, this may adversely affect the resulting imputations. Thus, we would advocate that those researchers using imputation techniques on data covering more than a few years first examine whether there has been a shift in the structure of cases with high levels of missing data over time. Significant evidence of change may imply that the data set should be broken down into smaller groups of years before the imputation process is carried out and reaggregated subsequent to it.

Our results provide qualified support for the argument that unknown victim/offender relationship homicides are stranger killings. We find that although a considerable proportion of homicide situations are unique to homicides with undetermined relationships, nearly half are common to both stranger and unknown homicides. These common situations also account for approximately three quarters of homicide cases. At the same time, unknown relationship cases share common structures with acquaintance homicides. Furthermore, several victim and offense attributes strongly distinguish between unknown and stranger homicides, suggesting a less-than-perfect overlap between these two categories.

Of the three positions outlined earlier concerning whether the cases in the undetermined category are all or primarily all stranger homicides, our results are most consistent with the view that unknown victim/offender relationships include all types of relationships but are disproportionately strangers, a conclusion reached in several other studies seeking to adjust for missing data on victim/offender relationships (see Messner et al., 2002; Pampel & Williams, 2000; Regoeczi & Riedel, 2003; Williams & Flewelling, 1987). In particular, the patterns outlined earlier suggest that numerous unknown homicides probably involve strangers, and thus data on known victim/offender relationships may underestimate the proportion of stranger homicides. However, it is also likely that this category contains other types of victim/offender relationships and thus is not exclusively made up of stranger killings.

Finally, an important conclusion from this research is the danger of assuming that homicides with unknown victim/offender relationships are necessarily stranger killings. Previous inferences about the dramatic rise in serial killers and random violence that derive from the assumption that unknowns are stranger homicides have led to serious distortions about the nature of homicide and have misled the direction of criminological theory and public policy. The QCA results from this study actually indicate that the structure underlying these two types of homicides are distinct at least as frequently as they overlap. Under these conditions, our results serve as a strong reminder of just what it means to say the relationship is undetermined: There is just not sufficient evidence on which to make a determination. Clearly the assumption that stranger and unknown homicides are one and the same needs some rethinking. Primarily, this involves more research on their unique and common profiles across situational contexts and over time.

NOTES

1. For the years under investigation in the present study, the circumstances are unknown for 22.8% of homicides.
2. This "relative uniqueness" rule is conceptually similar to decisions about significance levels in standard statistical tests (e.g., Do you use a .10, .05, or .01 significance level?). Both of these types of decision rules are somewhat arbitrary. However, we used a 10% difference rule because this standard is often treated as the lower limit for claims of substantial differences within contingency table analyses (see Fox, 1998).
3. These results are not presented in table format but are available from the authors.

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