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Geographic Profiling Survey: A Preliminary Examination of
Geographic Profilers' Views and Experiences

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ABSTRACT

Geographic profiling can be described as an investigative technique that involves predicting a serial offender's home location (or another anchor point) based on where he or she has committed their crimes. Although the use of geographic profiling in police investigations appears to be on the rise, little is currently known about the procedure and how it is used in operational settings. To examine these issues a survey was distributed to police professionals in the United States, Canada, the United Kingdom, Germany, Australia, Japan, the Netherlands, and South Africa. The survey consisted of questions designed to assess: (1) how geographic profiles are constructed, (2) the perceived usefulness and accuracy of geographic profiling, (3) whether core geographic profiling conditions are examined before profiles are constructed, and (4) the types of cases where geographic profiling is used. The results suggest that geographic profiles are commonly used in operational settings even when geographic profiling conditions are violated. In addition, general perceptions of geographic profiling accuracy and usefulness appear to be high. Although preliminary in nature, the results from this study help enhance understanding of how geographic profiling is used in police investigations around the world, and under what conditions. The survey also provides directions for future research on the topic of geographic profiling.

Keywords: geographic profiling, serial offenders, crime investigation, serial crime,

investigative psychology

INTRODUCTION

Geographic profiling (GP) is ‘a criminal investigative methodology that analyses the locations of a connected series of crime to determine the most probable area of offender residence’ (Rossmo, 2012, p. 144). Although there are many different ways in which GP can be used to aid in the investigation of serial crime, it is often relied on as a tool for prioritizing potential suspects, with those suspects living closest to the predicted home location being focused on first (Rossmo, 2000). Despite the use of GP in police investigations appearing to be on the rise, little is currently known about the GP procedure and how it is used in operational settings. Thus, the current study helps fill this gap in the literature through the use of an international online survey.

Conducting GP

Although there are many different strategies available for conducting GP, all of them rely on the same underlying theoretical assumptions: (1) most serial offenders do not travel far from their home location to commit their crimes (distance decay) and (2) most serial offenders live within the area covered by their criminal activity (domocentricity). These numerous GP strategies can be broadly classified as either spatial distribution strategies or probability distance strategies (Snook, Zito, Bennell, & Taylor, 2005). Spatial distribution strategies involve using the distribution of crime site locations to calculate a central point, which serves as the offender’s predicted residence. Some examples of spatial distribution strategies include the calculation of the centroid, spatial mean, and the centre of minimum distance. The centroid calculation is one of the most commonly used spatial distribution strategies and involves averaging the x - y coordinates of a linked series of crimes to identify the likely location of the offender’s residence.

Probability distance strategies, on the other hand, predict the offender's residence by applying a type of mathematical function (e.g., linear, lognormal, truncated negative exponential) to each of the crime sites. This produces a probability surface that specifies how likely it is that the offender resides in each of the possible areas within their activity space (Snook et al., 2005). This surface can then be searched in a systematic fashion for the offender's residence (i.e., starting at the highest point of probability and working outward). The use of computerized systems that rely on probability distance strategies (e.g., *Rigel*, *CrimeStat*, *Dragnet*) is currently the most common way of conducting GP (Snook et al., 2005).

Accuracy of GP

A range of research has been conducted to assess the accuracy of various GP approaches with some of this research focusing on the accuracy of computerized GP systems. Rossmo (2000), for example, used information from selected FBI serial murder cases to evaluate *Rigel* and found a mean hit score percentage of 6% (i.e., on average, only 6% of the total prioritized search area had to be searched before the offender's home location was found). Similarly, Canter, Coffey, Huntley, and Missen (2000) examined the GP system *Dragnet* by using body disposal locations of 79 American serial killers and found an average hit score percentage across the sample of 11%.

Other research has compared the accuracy of simpler spatial distribution strategies to that of more complex probability distance strategies. For example, Snook et al. (2005) rated 11 different GP strategies (six spatial distribution and five probability distance strategies) in terms of their complexity and assessed their accuracy using crime data from 16 UK serial burglars. They found that strategy complexity was not positively correlated

with accuracy, suggesting that complex GP strategies are not necessarily better than simpler strategies. In another study, Paulsen (2006a) compared several GP systems (*Rigel, Dragnet, CrimeStat*) to spatial distribution strategies using crime series of various types and found that the more complex probability strategies did not generate substantially more accurate geographic profiles than the simple spatial distribution strategies.

Finally, a series of studies have been conducted to examine whether clinical (i.e., human-based) forms of GP are as effective as more complex (i.e., computer-based) forms of GP (e.g., Bennell, Snook, Taylor, Corey & Keyton, 2007; Paulsen, 2006b; Snook, Canter, & Bennell, 2002; Snook, Taylor, & Bennell, 2004). Bennell, Taylor, and Snook (2007) conducted a review of this research and found that training participants in simple GP strategies (i.e., heuristic training) resulted in significantly more accurate predictions. In addition, this training often, but not always, allowed human judges to perform as well on GP tasks as a range of computer-based forms of GP.

One possible reason for these conflicting findings is the use of two different evaluation measures: (1) error distance and (2) hit score percentage. Error distance refers to the distance between the offender's predicted home location, which is produced by the GP technique being examining, and his or her actual residence. Hit score percentage, on the other hand, refers to the percentage of the total prioritized search area (produced by the GP system) that has to be searched (when working from the highest to the lowest probability point) before the offender's home base is located. Although hit score percentage is considered more reflective of how geographic profiles are used by police in an investigative setting (Rossmo, 2011), some still consider error distance useful as it can

be easily calculated and readily applied to all methods of GP, including those that do not produce search areas (i.e., strategies that result in a single prediction point), and it has been recommended for use in a National Institute of Justice funded proposal of how to evaluate GP systems (Rich & Shively, 2004).

Conditions of GP

According to Rossmo (2000, 2005), GP is only feasible when the following five conditions are met:

1. the offender has committed a minimum of five crimes,
2. the crimes are linked to the same offender and the series is relatively complete,
3. the offender committing the crimes has not commuted into the area of criminal activity,
4. the offender has not moved anchor points (or operated from multiple anchor points) during his or her crime series, and
5. the distribution of suitable targets (i.e., the target backcloth) is relatively uniform around the offender's home.

However, at the time of the investigation it is often challenging to determine whether all of these conditions have been met; for example, whether the offender is a commuter or a marauder. Marauders can be described as those offenders whose home location (or anchor point) is located within their area of criminal activity, whereas commuters commit their crimes in a different area from their home (Canter & Larkin, 1993). Paulsen (2007) found the “best guess” rate of commuter/marauder predictions to be 60%, which suggests that accurate commuter/marauder predictions may not be possible at the time of the investigation. However, prediction accuracy did increase to

81% when designated predictor variables, which were all known or could be calculated at the time of the investigation, were used. The three significant predictor variables were all geographic or temporal in nature. In contrast, the traditional modus operandi related variables (e.g., victim type, crime type, and night-time activity), which are more readily available at the time of the investigation, were not significant predictors of commuter/marauder classification.

In addition, these conditions have not always been met in previous GP research. For example, studies examining GP accuracy have often included offenders who have committed a minimum of only three crimes (e.g., Paulsen, 2006a; Snook et al., 2004). As well, many GP accuracy studies have included both commuters and marauders, in their analyses (e.g., Canter et al., 2000; Paulsen, 2006b). However, Rossmo (2005) suggests that these GP studies bear little resemblance to actual police investigations, emphasizing the need for research examining the GP procedure and how it is used in operational settings.

Type of cases where GP is used

Although originally developed for the investigation of serial murder, GP has subsequently been applied to numerous other serial crime types, such as rape, arson, robbery, bombings, burglary, fraud, auto theft, and kidnappings (Rossmo, 2012). However, research does suggest that GP accuracy can be expected to vary depending on the crime type to which it is applied. For example, in Paulsen's (2006a) study where the accuracy of several GP systems was compared to that of spatial distribution strategies, he found that crime type did indeed influence the accuracy of the GP profile, regardless of what GP profiling strategy was used. Specifically, certain crime types (auto theft, street

robbery, and residential burglary) yielded substantially more accurate results than other crime types (commercial robbery and larceny). In addition, findings from other research suggest that offenders of interpersonal crime are more likely to be marauders than offenders of property crime (e.g., Canter & Larkin, 1993; Kocsis & Irwin, 1997; Santtila, Laukkanen, & Zappalà, 2007). Given that GP is only accurate when applied to marauding offenders, it can be expected that GP will be more accurate when applied to interpersonal crime than when applied to property crime.

The current study

As previously mentioned, the use of GP in police investigations appears to be on the increase; however, little is currently known about the GP procedure and how it is used in operational settings. Thus, the current study examined the use of GP in operational settings by collecting survey responses from geographic profilers around the world. It is important to note that the current research is exploratory in nature, allowing for a *preliminary* examination of real-world geographic profilers' views and experiences of GP. Although the results are preliminary, this study still makes an important contribution to the GP literature as the results begin to enhance our understanding of how GP is used in police investigations around the world, and under what conditions. In addition, the results can be used to inform future GP research, which could lead to subsequent improvements in GP from an operational standpoint.

METHOD

Survey Monkey was used to create an online survey that was distributed to police professionals in Canada, the United States, the United Kingdom, Germany, Australia, Japan, the Netherlands, and South Africa, who have personally generated a geographic

profile in order to assist with a police investigation (this was assessed via self-report). Recruitment for participants involved direct contact with colleagues and GP researchers, contact through various police and crime mapping electronic mailing lists and online discussion groups, and contact through word of mouth at police-related conferences. The recruitment message briefly described the study and the survey as well as the requirements to participate. The recruitment message also included a link to the online survey with the survey remaining available for completion for 10 consecutive months (September 15, 2011, until July 15, 2012).

Survey

The survey, which was developed by the authors, required approximately 20 to 30 minutes to complete and contained a total of 47 questions, which were primarily closed-ended (i.e., multiple choice) and designed to assess:

1. how geographic profiles are constructed,
2. the perceived usefulness and accuracy of GP,
3. whether core GP conditions are examined before profiles are constructed, and
4. the types of cases where GP is used.

Although the survey consisted of 47 questions in total, the exact number of completed questions varied across the respondents depending on their answers to previous questions (e.g., if a respondent answered “No” to having received training in GP then they automatically skipped the follow-up question where they were asked to specify the type of training received, thus reducing the total number of questions answered). A copy of the complete survey is available upon request from the first author.

Sample

In total, 35 individuals began the online survey. However, four were excluded from completing the survey as they had not personally generated a geographic profile in order to assist with a police investigation, which was a requirement for participation in the study. An additional nine respondents abandoned the survey midway through and as a result, their partial responses were also excluded from the analysis. Thus, the final sample for the current study consisted of 22 individuals (16 males, 6 females) who had personally constructed a geographic profile (mean age = 44.6 years, $SD = 9.2$; age range = 29 to 65). Fifteen individuals worked for a police department with two of the remaining seven respondents having at least some background experience in policing. Almost three-quarters of respondents (73%) worked in North America (United States $n = 9$, Canada $n = 7$) with the remainder working in the United Kingdom ($n = 2$), South Africa ($n = 2$), Netherlands ($n = 1$), and Italy ($n = 1$). The level of experience in generating geographic profiles varied greatly within the sample with a little over half of respondents (55%, $n = 12$) having generated 10 or less, 18% ($n = 4$) having generated between 11 and 20, one respondent having generated approximately 70, and 14% ($n = 3$) having generated 100 or more; two participants did not respond to this question. In addition, 77% of respondents ($n = 17$) had some form of GP training.

Given the method of survey dissemination (i.e., survey link sent out to an unknown number of potential participants via electronic mailing lists, online discussion groups, and email), it is not possible to determine an exact response rate. However, the small sample size ($N = 22$) suggests that the response rate was low, which is certainly not uncommon in research surveying police personnel. Burrell and Bull (2011), for example, surveyed 72 crime analysts in order to examine their views and experiences of

comparative case analysis and reported that only 18 responded, for a response rate of 25%. In another study, Jamel, Bull, and Sheridan (2008) investigated specialist police service provided to male rape survivors by sending surveys to 300 officers and received just 19 responses (response rate = 6.3%). As well, although it is recognized that the findings of this research will not necessarily be generalizable to all geographic profilers working in operational settings, recall that the purpose of this study was to offer a *preliminary* examination of real-world geographic profilers' views and experiences of GP. Consequently, it was decided that the current, albeit small, sample was sufficient for achieving the primary aims of this research.

Analysis

Given the small sample size ($N = 22$), the survey data is examined primarily in terms of descriptive analyses, such as frequencies and means, across each of the four themes. Although survey non-completers were removed from the analyses, respondents were permitted to skip (i.e., not respond to) questions. In addition, not all questions were relevant to all respondents. As a result, the total number of responses varies by question and does not necessarily remain constant at 22.

RESULTS

How geographic profiles are constructed

The vast majority of respondents typically or always construct a geographic profile individually (91%, $n = 20$) rather than in a group (9%, $n = 2$). In terms of the GP methods used to generate geographic profiles, 77% reported that they had used computerized GP systems ($n = 17$), followed by spatial analysis techniques and educated guesses (e.g., eyeballing a map and estimating an anchor point) with both having been used by 27% of

respondents ($n = 6$). However, there were some interesting differences among those respondents who had received GP training compared to those who had not. Specifically, a greater proportion of trained respondents (94%, $n = 16$) had used computerized GP systems to generate a profile than untrained respondents (20%, $n = 1$). In addition, a greater proportion of untrained respondents (60%, $n = 3$) reported having used an educated guess to generate a geographic profile compared to the trained respondents (17.6%, $n = 3$).

Among the 17 trained and untrained respondents who had used computerized GP systems, *Rigel* was the most popular at 53% ($n = 9$), followed by *CrimeStat* at 47% ($n = 8$), and *Dragnet* at 18% ($n = 3$). Of the six respondents who had used spatial analysis techniques to generate a geographic profile, the centre of the circle was the most popular (67%, $n = 4$), followed by the median (50%, $n = 3$), centroid (50%, $n = 3$), and centre of minimum distance (50%, $n = 3$). Respondents reported having used a variety of information sources to generate their geographic profiles with crime site locations being the most commonly cited (73%, $n = 16$) (see Figure 1 for frequencies for additional information sources). Finally, GP has most frequently been implemented as an investigative tool by increasing patrol intensity in the area where the offender might live or work (77% for both, $n = 17$) (see Table 1 for frequencies for additional implementations of GP as an investigative tool).

[Insert Figure 1 and Table 1 about here]

Perceived accuracy/usefulness of GP

On average, respondents have found GP to be useful in moving the investigation forward in a little over half of the cases where it has been used ($M = 53.2\%$ of cases, $SD = 28.44$).

Computerized GP systems were ranked the highest with 75% of respondents ranking it as producing both the most accurate and operationally useful profiles. Spatial analysis techniques were ranked second by 70% and 60% of respondents in terms of producing the most accurate and operationally useful profiles, respectively. In comparison to the other two methods, 76% and 80% of respondents ranked an educated guess as producing the least accurate and least useful profiles, respectively. Approximately three-quarters of respondents (77%, $n = 17$) indicated that training should be required for individuals constructing geographic profiles. Finally, almost all of the respondents (91%, $n = 20$) would consider constructing a geographic profile again in the future and all respondents ($n = 22$) reported that they would consider using GP as an investigative tool again in the future.

GP conditions

Recall that Rossmo's (2000) five conditions of GP are: (1) the offender has committed a minimum of five crimes, (2) the crimes are linked to the same offender and the series is relatively complete, (3) the offender committing the crimes has not commuted into the area of criminal activity, (4) the offender has not moved anchor points (or operated from multiple anchor points) during his or her crime series, and (5) the distribution of suitable targets (i.e., the target backcloth) is relatively uniform around the offender's home.

Figure 2 compares the percent of respondents who only use GP if a particular condition is met to those who use GP even if the condition is violated. Note that for conditions 3, 4, and 5 the grey bar consists of both those respondents who do not attempt to determine whether the offender is a commuter, the offender has moved anchor points, or the target backcloth is uniform prior to constructing the GP profile, as well as those respondents

who do attempt to determine those things, but still use GP even if the condition is violated.

Note that condition 2 is not included in Figure 2 as it was not assessed using a yes/no question. On average, respondents had to be fairly positive that the series of crimes under investigation was committed by the same offender before they would use GP on that series ($M = 74.1\%$ positive that the series of crimes was committed by the same offender, $SD = 21.3$). In addition, many respondents reported that prior to constructing the geographic profile, they would first check with neighbouring police forces to see whether they also have crimes that could potentially be linked to the same offender (65%, $n = 13$) or that they already had access to crimes committed in nearby areas so contacting neighbouring police forces was not necessary (25%, $n = 5$). Thus, it appears that respondents are taking steps to ensure that the crime series is relatively complete and that the crimes can be linked to the same offender. However, it is still possible that GP is used in operational settings when condition 2 is violated given that it is not always possible to determine at the time of the investigation whether the series is complete and whether all crimes in the series were committed by the same offender.

In regards to the remaining four GP conditions, Figure 2 indicates that the majority of respondents still use GP even if these conditions are not met. This is particularly the case for conditions 3, 4, and 5 where 96%, 96%, and 91%, respectively, reported that they still use GP even if that particular condition is violated. The sample was more split over condition 1 with 48% reporting that they only construct a geographic profile if there are at least five crimes in the series, in comparison to the 52% who use GP even if there are fewer than five crimes in the series. When broken down by GP training

the condition results were similar across the two groups except that in comparison to the untrained respondents (20%, $n = 1$), a greater proportion of trained respondents (56.3%, $n = 9$) would only use GP if there were a minimum of 5 crimes in the series.

[Insert Figure 2 about here]

Types of cases where GP is used

Many respondents have used GP to generate profiles for a variety of crime types, such as burglary (59.1%, $n = 13$), robbery (50%, $n = 11$), murder (36.4%, $n = 8$), auto theft (31.8%, $n = 7$), rape (31.8%, $n = 7$), and arson (31.8%, $n = 7$). In addition, approximately a third of respondents (31.8%, $n = 7$) have used GP most often in murder cases followed by burglary and robbery (both at 22.7%, $n = 5$). Table 2 presents the frequencies for all crime types included in the survey. As well, the majority of respondents (68%, $n = 15$) would still use GP in cases where the crime series contains more than one crime type.

The most commonly cited factors that would increase the likelihood of GP being used as an investigative tool include a large crime series (86%, $n = 19$) and the officer in charge of the investigation thinking that GP would be useful (82%, $n = 18$) (see Table 3 for additional factor frequencies).

[Insert Tables 2 and 3 about here]

DISCUSSION

Although the results from the current study are only preliminary in nature, they do begin to enhance our understanding of how geographic profiling is used in police investigations around the world, and under what conditions. Overall, the results indicate that geographic profiles are frequently generated even when GP conditions are violated. More specifically, GP is still being used in investigative settings even when the crime series

contains fewer than 5 crimes, the offender may be a commuter, the offender may have moved anchor points during the crime series, and the distribution of suitable targets is non-uniform around the offender's home.

There are various interpretations possible for the finding that respondents commonly generate geographic profiles even when GP conditions are violated. First, respondents could have inappropriately used GP in problematic cases when they should not have done so, which points to a training issue. Second, respondents could have taken a calculated risk and knowingly used GP in problematic cases, resulting in a geographic profile that was potentially helpful, but not as accurate as it would have been if the conditions had been met. This demonstrates the trade-offs between utility and performance. Third, respondents used GP in problematic cases and found an effective means of managing the violated condition(s), which has been shown to be possible in some cases (Rossmo & Velarde, 2008). This highlights the importance of sharing best practices in managing the violation of conditions when conducting GP. Regardless of the interpretation, this finding indicates that assessing GP accuracy using crime data where one or more of the GP conditions are violated, particularly those that can be hard to determine at the time of the investigation, may actually provide a more realistic assessment of real-world GP accuracy. This is in contrast with Rossmo's (2005) suggestion that GP studies that rely on crime data where these conditions are violated bear little resemblance to actual police investigations.

This claim is not completely accurate; the specific quote was, "their laboratory experiment bears little resemblance to the reality of criminal investigation. Major flaws exist with both data selection (the cases used may not have met the assumptions

underlying geographic profiling, and they only involved a series of three locations, too low for pattern detection), and methods of analysis (nonlinear error was measured linearly, and computerized geographic profiling search strategies were distorted)" (p. 651).

The results also suggest that perceptions of GP accuracy and usefulness were mostly positive among the sample with almost all respondents agreeing that they would construct and use geographic profiles as an investigative tool again in the future. In addition, computerized GP systems were used most frequently and were considered to produce both the most accurate and most useful profiles in comparison to spatial analysis techniques and educated guesses. This finding is interesting given some error distance research suggesting that simple GP strategies, such as trained human judges and spatial distribution methods, can often make GP predictions just as accurate as more complex forms, such as computerized GP systems (e.g., Bennell, Snook, et al., 2007; Paulsen 2006a; Snook et al., 2002; Snook et al., 2004; Taylor, Bennell, & Snook, 2009).

A greater proportion of trained respondents had generated profiles using computerized GP systems than untrained respondents. This finding could simply suggest that geographic profilers are more likely to receive training on how to use computerized GP programs rather than theory. The majority of respondents indicated that they would still use GP in cases where the crime series contains more than one crime type. This is not viewed as overly problematic, however, given that research suggests that the inclusion of multiple crime types in a series does not negatively impact GP accuracy and can even result in more accurate and precise profiles (Leitner & Kent, 2009).

Limitations of the current study and future research

It is still the consensus of the authors that the sample size in the current study was sufficient to provide a preliminary examination of geographic profilers' views and experiences of GP, which was the goal of this research. In addition, the results reported are largely in line with the GP literature, which makes us more comfortable reporting on a sample of only 22 participants. However, it is acknowledged that the small sample size is problematic in terms of providing a more extensive examination. Thus, the small sample size is a major limitation to the current study in that it limits the generalizability of the findings as well as limits the range of possible statistical analyses. Thus, future research could further enhance understanding of how GP is used in police investigations around the world, and under what conditions, by including a larger sample size. A larger sample size would certainly allow for more extensive analyses. For example, the results could be examined across various factors, such as age, police experience, country, and level of GP training, in order to determine whether differences exist in terms of GP use and perceived usefulness and accuracy. It would be particularly interesting to determine whether GP use varies across geographic region.

In addition, non-completion was an issue in the current study. Thirty-one individuals who met the participation requirements began the survey, but only 22 of them completed it. The 29% dropout rate ($n = 9$) could suggest that the survey was too time-consuming as longer online survey length has been associated with decreased completion rates (Galesic & Bosnjak, 2009). Longer online survey length increases the opportunity for respondents to lose motivation or become distracted (e.g., by time pressure or other tasks at work), which help explain survey non-completion (Steinbrecher, Roßmann, &

Blumenstiel, 2015). The results from the current study, however, could be used to inform the development of a future GP survey so that a more streamlined version can be created without the loss of valuable information. As well, a pilot study could be conducted in the future that involves conducting focus groups with those who have constructed geographic profiles for investigative purposes in order to develop survey questions that respondents perceive as more useful, which would help decrease the dropout rate. Response rates in future research could also be improved by obtaining the support of relevant professional associations.

In addition, although we asked participants if they would still use GP even if Rossmo's various conditions were violated, we did not ask them if they have found that violating these conditions impacted the quality of the geographic profile produced. A future GP survey could include a question such as this in order to determine whether profiles violating the conditions are actually less useful in practice than those not violating those conditions. It is also important to note that the GP survey used in the current study was self-report in nature. As with any research relying on self-report data, there was the potential for participants in this study to be deceptive or dishonest in their responses.

Participant recruitment was also an issue in the current study, as indicated by the small sample size. As of 2012, over 600 people worldwide had been trained through a 2-week Geographic Profiling Analysis course that is available through various universities and police agencies internationally (Rossmo, 2012). Unfortunately, it appears that the current study was not successful at reaching those individuals, despite the multiple methods of survey dissemination (i.e., word of mouth, email, online discussion groups,

electronic mailing lists) and frequent survey reminder messages. Thus, sample size could likely be increased in future research through the adoption of alternative methods of survey dissemination as well as through the use of a shorter survey.

CONCLUSION

In conclusion, the results from the current study suggest that geographic profiles are commonly used in operational settings even when geographic profiling conditions are violated. In addition, computerized GP systems are viewed as the most accurate and most useful and are used most frequently. The results also suggest that perceptions of GP accuracy and usefulness are positive with all respondents indicating they would use GP again in the future. Given that these results suggest that police departments will continue using GP as an investigative tool, continued research of effective uses of GP appears to be warranted and useful from an operational standpoint. Thus, although these findings are preliminary in nature and more research is needed, particularly with larger sample sizes, they do begin to enhance our understanding of how GP is used in police investigations around the world, and under what conditions.

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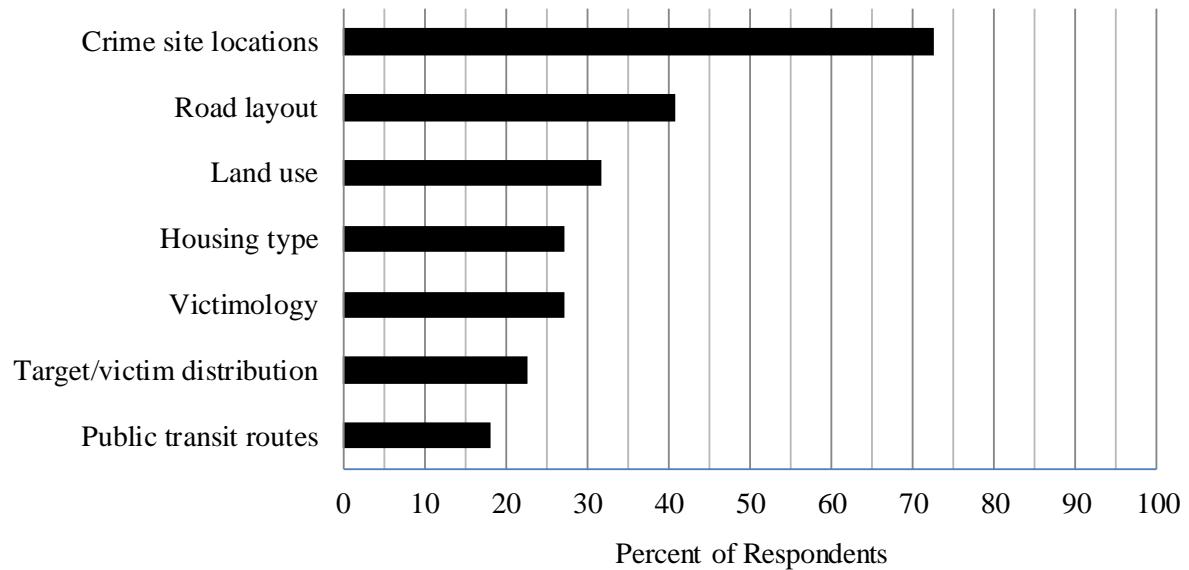


Figure 1. Information sources used to generate geographic profiles.

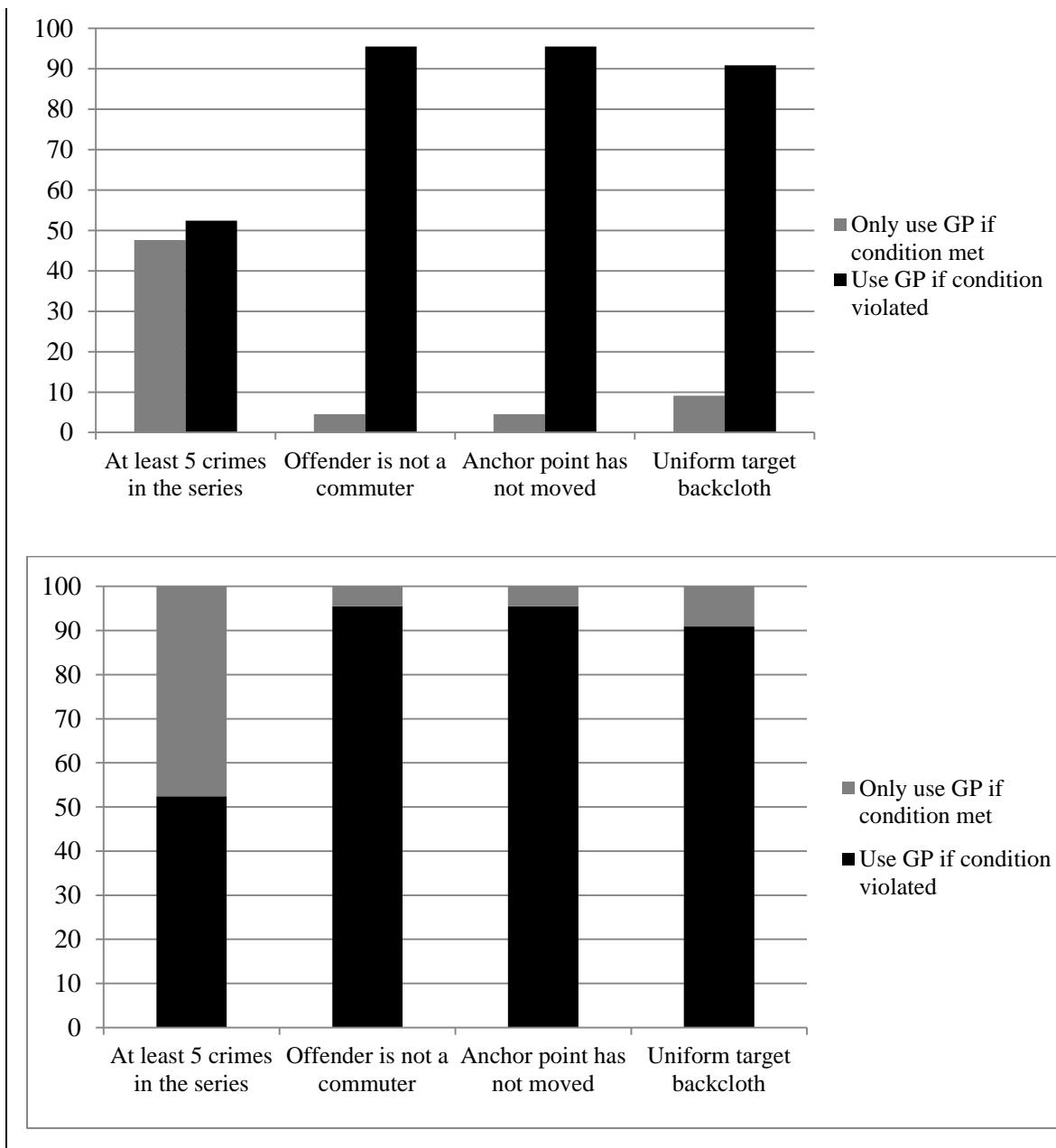


Figure 2. Graph comparing percent of respondents who use geographic profiling if various conditions are violated to those who do not.

Table 1

Response Frequencies for how Geographic Profiling has been Implemented as an Investigative Tool (Total N = 22)

Implementation	Frequency (n)	Percent (%)
Increase patrol intensity in the area where the offender might live or work	17	77.3
Limit the suspect pool	14	63.6
Provide a starting area for door-to-door canvassing	13	59.1
Generate new tips by broadcasting the prioritized search area to the public	8	36.4
Identify an area for mass mail outs	5	22.7
Help determine probable body dump sites	3	13.6
Identify areas for DNA testing	3	13.6
Serve as evidence to help obtain a search or arrest warrant	2	9.1
Other	2	9.1

Table 2

Response Frequencies for Crime Types Where Geographic Profiles have been Generated

(Total N = 22)

Crime Type	Have Used GP		Have Used GP Most Often	
	Frequency (n)	Percent (%)	Frequency (n)	Percent (%)
Burglary	13	59.1	5	22.7
Robbery	11	50.0	5	22.7
Murder	8	36.4	7	31.8
Auto theft	7	31.8	1	4.5
Rape	7	31.8	1	4.5
Arson	6	27.3	0	0
Theft from motor vehicle	3	13.6	2	9.1
Bombings	2	9.1	1	4.5
Shoplifting	2	9.1	0	0
Kidnapping	1	4.5	0	0

Table 3

Response Frequencies for Factors Associated with Increased Likelihood of Geographic Profiling Being Used as an Investigative Tool (Total N = 22)

Factor	Frequency (n)	Percent (%)
Crime series is long (5 or more crimes)	19	86.4
Officer in charge of investigation thinks GP would be useful	18	81.8
More severe crimes were committed	12	54.5
Other investigative leads are not available or are scarce	11	50.0
GP software is readily available	11	50.0
High degree of pressure to solve the crime series	10	45.5
Crime series has been unsolved for a long period of time	10	45.5
Interpersonal crimes were committed	8	36.4
Property crimes were committed	6	27.3