Upcoming Conferences

30th Canadian Congress on Criminal Justice
Viewpoint 2005: Is the future ours to see?
October 20-22, 2005 Calgary, Alberta
www.ccja-acjp.ca

2005 Joint Canadian Evaluation Society (CES) / American Evaluation Association (AEA) Conference
Crossing Borders, Crossing Boundaries
October 26-29, 2005 Toronto, Ontario
www.evaluationcanada.ca

Association for the Treatment of Sexual Abusers (ATSA) 24th Annual Research & Treatment Conference
Battling Sexual Abuse with Prevention and Treatment
November 2-5, 2005 New Orleans, Louisiana
www.atsa.com

Canadian Centre on Substance Abuse National Conference 2005
Innovation and Action
November 13-16, 2005 Markham, Ontario
www.ccsa.ca

The American Society of Criminology (ASC) Annual Meeting
November 16-19, 2005 Toronto, Ontario
www.asc41.com

American Correctional Association's Winter Conference
January 28-February 1, 2006 Nashville, Tennesse
www.aca.org

Members on the Move

Shelley Brown has left CSC and gone to the NPB!

Jennifer van de Ven is now housed at Warkworth Institution!

Andrew Harris has escaped from Warkworth and is now back in the National Capital Region.

Chantal Langevin has a little evaluator on the way!

Any more news? Contact us.

The CPA October Submission Deadline is Approaching .

Don't forget to get your submission in by October 21, 2005 for next year's conference!

CPA 67th Annual Convention
June 8-10, 2006 Calgary, Alberta

Students' Water Cooler

The Students' Water Cooler is a new feature of *Crime Scene*, designed to give students a voice. If you have any information, advice, or would like to communicate with other students through a submission, please contact us! In this edition, we are showcasing the work of Shevaun Corey, winner of the Student Poster Prize at this year's Annual CPA Convention.

The Effect of Task Complexity on Predictive Accuracy in a Geographic Profiling Task

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Introduction

Geographic profiling is defined as "…an information management strategy for serious violent crime investigations that analyses crime site information to determine the most probable area of offender residence" (Rossmo, 2000). Predictions of offender residence are typically obtained through computerized geographic profiling systems, which utilize distance decay functions (representing the fact that offenders are more likely to commit crimes close to home) to produce probability surfaces that indicate the area most likely to contain the offender's home (Rossmo, 2000). Despite the popularity of these systems, researchers have recently examined alternative approaches to making such predictions. One approach examines the feasibility of non-actuarial approaches to geographic profiling, by teaching people how to use simple heuristics, or rules of thumb, to predict where offenders live (e.g., Snook, Taylor, & Bennell, 2004). The two heuristics that have been studied most thoroughly are the Circle heuristic, which states that the majority of serial offenders live within a circle that encompasses their entire crime series, or the Decay heuristic, which states that the majority of serial offenders live close to the majority of their crimes.

Previous research that has examined this non-actuarial approach to profiling is limited in a number of ways. First, student samples have been focused on. Second, only serial homicide has been examined. And, third, the actual task presented to participants has been unrealistic in its simplicity. The current study addresses these limitations. More specifically, we examine the ability of police officers to make accurate geographic profiling predictions in cases of serial burglary under conditions that more closely approximate the complex environment of real world police investigations. To achieve this enhanced level of complexity/realism we manipulated two factors that have been deemed important to consider when making geographic profiling predictions: the number of crimes upon which the profile is based (three, five, or seven) and the degree of topographical detail that must be considered when constructing the profile (topography or no topography).

Method

Participants

Participants included 91 police officers of varying ranks that were recruited from a large police service in the United Kingdom. The participants were randomly assigned to a Control (n = 30), Circle (n = 28), or Decay (n = 33) group. Of the 91 participants who responded when asked their age and gender, there were no significant differences between the three groups on either variable.

Procedure

The police officers were informed they would be making predictions about the likely home location of 36 serial burglars. Maps for these 36 offenders (consisting of crime site locations and a hidden home base) were randomly selected from a larger database of solved serial burglaries committed in St. John's, Newfoundland, Canada. One third of the maps depicted three burglary locations, another third depicted five burglary locations, and the last third depicted seven burglary locations. Half of the maps included topographical information while the other half did not.

Each officer made geographic profiling predictions on 18 maps (counterbalanced for number of crimes and topography) by marking an X where they thought the offender lived. Officers in the Circle or Decay group were then informed of their group specific heuristic (participants in the Control group completed a filler task). All of the officers then made predictions on the other 18 maps (counterbalanced for number of crimes and topography). Predictive accuracy was measured by hand as the straight-line distance (in mm) between the predicted and actual home location of the offender.

The same 36 maps were analyzed by the computerized geographic profiling system *CrimeStat* and predictive accuracy was measured by calculating the difference in distance between the highest point of probability (the predicted home location) and the actual home location of the offender.

Design

A 3 (Group: Control x Circle x Decay) by 3 (Crimes: 3 crimes x 5 crimes x 7 crimes) by 2 (Topography: Topography x No Topography) by 2 (Phase: Baseline x Re-test) mixed design ANOVA (with counterbalancing of the within subjects variables) was used to examine predictive accuracy. One-sample t-tests were also conducted to compare the performance of the participants to *CrimeStat*.

Results

A significant main effect for phase, $F(1,88)=21.03$, $p<.001$, was found, with predictive accuracy improving from baseline to re-test for all three groups. A significant two-way interaction was also found between phase and group, $F(2,88)=4.43$, $p<.05$, with a significant increase in predictive accuracy being found for the Circle ($t=7.34$, $df=27$, $p<.001$) and Decay ($t=7.55$, $df=32$, $p<.001$) from baseline to retest, but not the Control group. A significant main effect was found for crimes, $F(2,176)=221.5$, $p<.01$, with officers exhibiting significantly higher predictive accuracy on maps containing five crimes, compared to either three or seven crimes. This occurred because a higher proportion of offender residences were located near the centre of the crime series on maps consisting of five crimes, compared to maps consisting of three or seven crimes. A significant two-way interaction was also found between phase and crimes, $F(2,176)=3.47$, $p<.05$, indicating that the change in predictive accuracy across phases varied depending on whether the maps consisted of three, five, or seven crimes. The increase in predictive accuracy from baseline to re-test was smallest for maps consisting of three crimes, $t=2.54$, $df=90$, $p<.05$, slightly larger for maps consisting of five crimes, $t=3.57$, $df=90$, $p<.01$, and largest for maps consisting of seven crimes, $t=4.02$, $df=90$, $p<.001$. There were no significant main or interaction effects for topography.

When the post-training performance of the three groups was compared to the performance of *CrimeStat*, participants in the Control group performed significantly worse than *CrimeStat*, $t=2.53$, $df=36$, $p<0.05$, but participants in the Circle and Decay groups performed slightly, although not significantly, better, $t=1.16$, $df=36$, $p>0.05$ and $t=1.90$, $df=37$, $p>0.05$, respectively.

Discussion

The current findings are encouraging because they show that a short training session can enable police officers to achieve high levels of predictive accuracy when faced with the geographic profiling task in serial burglary cases. The fact that the levels of predictive accuracy achieved by the trained

groups were comparable to the performance of an actuarial system supports earlier geographic profiling experiments that suggest police agencies may be able to suffice with a fast and frugal training exercise that teaches their officers simple decision rules. This may be especially true for police agencies with limited technological or financial resources. The results also extend previous findings by showing that police officers may not need to take the number of crimes and topographical details into consideration when trying to predict the home location of serial offenders, since the training provided was shown to be effective across conditions of varying complexity.

References

Rossmo, D. K. (2000). *Geographic profiling*. Boca Raton, FL: CRC Press.

Snook, B., Taylor, P. J., & Bennell, C. (2004). Geographic profiling: The fast, frugal, and accurate way. *Applied Cognitive Psychology*, *18*, 105-121.

Coming Soon

In an effort to make *Crime Scene* more enticing to all readers and to facilitate communication across the country, we will be starting a new series in the next issue. To encourage participation from all regions, we will be posing questions and seeking responses from various audiences across the country (our international colleagues are welcome to respond as well). Over the next year, *Crime Scene* will feature perspectives from corrections (institution, community), community (government, non-government, volunteer, private), universities (faculty, students), police, and judicial system professionals, just to name a few.

Heads Up!

We could be looking to *you* for the new

Regional Perspectives Series

Do you work with offenders? Got any tips?

Email us.

In the next issue, the first feature will examine regional perspectives, from both institution and community, on what is working well and what is not in terms of offender treatment. Specifically, the questions posed are:

What is your most useful practice when it comes to offender treatment? Are there any "tips" that you can share with your colleagues?

What practice do you find least useful? Any "tips" on what to avoid? Is there something you have given up doing?

We are looking for the following individuals to answer the questions above:

(1) institutional parole officers and psychologists who work within the institutions or correctional centres (e.g., federal, provincial, territorial, state)

(2) forensic community practitioners, community parole officers, private practice psychologists – anyone who is working with offenders in the community

If you are one of the above individuals and would like to contribute, please write 2-3 lines (50 word maximum) on each set of questions above. Please indicate if your tip is profession-specific or location/region-specific, as well as your profession (area) and the region you are representing:

~ Canada's Pacific Region ~ Canada's Quebec Region ~

~ Canada's Prairie Region ~ Canada's Eastern Region ~

~ Canada's Central Region ~ Canada's Great North ~

~ Our Neighbours to the South ~

~ International Friends and Colleagues ~

Entries can be kept confidential (if requested) and listed only with profession and region.

All the Best for a Great "Submission" Season!