Document Viewer

Turnitin Originality Report

Processed on: 22-Feb-2019 4:25 PM SAST
ID: 1081925846
Word Count: 108632
Submitted: 1

9007394h:Chapters_1-8.pdf By Debbie Collaros

Similarity Index	Similarity by Source	
6%	Internet Sources:	5%
	Publications:	2%
	Student Papers:	N/A

include quoted include bibliography exclude small matches download print mode: quickview (classic) report

<1% match (Internet from 23-Apr-2009)
http://www.sagepub.com

<1% match (Internet from 01-Jun-2016)
http://repository.up.ac.za

<1% match (Internet from 23-Feb-2009)
http://www.pubmedcentral.nih.gov

<1% match (Internet from 01-Dec-2015)
http://www.iaca.net

<1% match (Internet from 28-Aug-2017)
https://people.ok.ubc.ca/stporter/Publications_files/Historical%20foundation%20and%20current%20%20applications%20for%20criminal%20profil

<1% match (Internet from 08-Jan-2015)
http://www.researchgate.net

<1% match (Internet from 24-Jan-2014)
http://www.ia-ip.org

<1% match (Internet from 21-Apr-2010)
http://www.liv.ac.uk

<1% match (Internet from 24-Mar-2014)
http://www.docstoc.com

<1% match ()
http://www.iaca.net

<1% match (Internet from 21-Feb-2013)
http://beardocs.baylor.edu

<1% match (Internet from 06-Mar-2014)
http://www.edra.org

<1% match (Internet from 03-Feb-2008)
http://www.popcenter.org

<1% match ()
http://lrd.yahooapis.com

<1% match (publications)
Gérard N. Labuschagne. "The use of a linkage analysis as evidence in the conviction of the Newcastle serial murderer, South Africa", Journal of Investigative Psychology and Offender Profiling, 10/2006

<1% match (Internet from 01-Nov-2018)
http://summit.sfu.ca

<1% match ()
http://www.rcmp.ca

<1% match (Internet from 14-Feb-2019)
https://onlinelibrary.wiley.com/doi/full/10.1348/135532509X463347

<1% match (Internet from 08-Feb-2019)
https://repository.up.ac.za/bitstream/handle/2263/68024/Hall_Exploring_2018.pdf?isAllowed=y&sequence=1

<1% match (Internet from 22-Feb-2012)
http://www.ia-ip.org

<1% match (Internet from 20-Dec-2014)
http://hunteremkay.com

<1% match (Internet from 08-Jun-2018)
https://link.springer.com/content/pdf/10.1007%2Fs11896-008-9027-6.pdf

<1% match (Internet from 13-Mar-2014)
http://www.pearsonhighered.com

<1% match (Internet from 18-Sep-2014)
http://www.cognitivemap.net

<1% match (Internet from 26-Apr-2016)
http://legalportal.am

<1% match (Internet from 25-Mar-2014)
http://www.coursehero.com

<1% match (publications)
Richard N. Kocsis, Andrew F. Hayes. "Believing is Seeing? Investigating the Perceived Accuracy of Criminal Psychological Profiles", International Journal of Offender Therapy and Comparative Criminology, 2016

<1% match (Internet from 03-Aug-2017)
http://uir.unisa.ac.za

<1% match (Internet from 15-Jul-2014)
http://www.genrica.com

<1% match (Internet from 13-Jul-2016)
https://www.ukessays.com/essays/psychology%20/cognition-refers-to-thinking-psychology-essay.php

<1% match (publications)
"Encyclopedia of Criminology and Criminal Justice", Springer Nature, 2014

<1% match (publications)
Horning, Amber M., C. Gabrielle Salfati, and Gerard N. Labuschagne. "South African Serial Homicide: A Victim-Focused Behavioural Typology : South African Serial Homicide", Journal of Investigative Psychology and Offender Profiling, 2014.

<1% match (Internet from 21-Apr-2016)
http://repository.up.ac.za

<1% match (Internet from 01-Nov-2018)
http://germatik.com

<1% match (Internet from 11-Nov-2013)
http://www.sagepub.com

<1% match (Internet from 05-Feb-2019)
http://uir.unisa.ac.za

<1% match (publications)
Richard N. Kocsis, Gillian Z. Heller. "Believing Is Seeing II: Beliefs and Perceptions of Criminal Psychological Profiles", International Journal of Offender Therapy and Comparative Criminology, 2016

<1% match (publications)
Labuschagne, Gérard N., and C. Gabrielle Salfati. "An Examination of Serial Homicide in South Africa: The Practice to Research Link : Serial homicide in South Africa: practice to research", Journal of Investigative Psychology and Offender Profiling, 2014.

<1% match (publications)
Salfati, C. Gabrielle, Gerard N. Labuschagne, Amber M. Horning, Marina Sorochinski, and Jackie De Wet. "South African Serial Homicide: Offender and Victim Demographics and Crime Scene Actions : Serial homicide demographics", Journal of Investigative Psychology and Offender Profiling, 2014.

<1% match (Internet from 29-Nov-2013)
http://citeseerx.ist.psu.edu

<1% match (Internet from 26-Feb-2018)
http://tandfonline.com

<1% match ()
http://behemoth.maze.ucl.ac.uk

<1% match (Internet from 03-Nov-2014)
http://rangers.rwtraip.kittery.k12.me.us

<1% match (publications)
Rossmo, . "Target and Hunt", Geographic Profiling, 1999.

<1% match (Internet from 12-Apr-2009)
http://http-server.carleton.ca

<1% match (Internet from 04-Mar-2015)
http://epublications.bond.edu.au

<1% match (Internet from 11-May-2010)
http://http-server.carleton.ca

<1% match (Internet from 03-Mar-2017)
http://documents.mx

<1% match (Internet from 17-Nov-2017)
https://www.scribd.com/doc/148016230/Qualitative-Data-Analysis-An-Expanded-Sourcebook-2nd-Edition

<1% match (Internet from 02-Aug-2014)
http://data.planetar.edu.al

<1% match (Internet from 26-Dec-2017)
https://d-nb.info/1113875542/34

<1% match (Internet from 18-Dec-2006)
http://fred.mems.duke.edu

<1% match (Internet from 04-Oct-2017)
https://dspace.lboro.ac.uk/dspace-jspui/bitstream/2134/10732/1/Thesis-2004-Bosley.pdf

<1% match (Internet from 06-Feb-2019)
https://repository.up.ac.za/bitstream/handle/2263/46281/Madjitey_Socio_2015.pdf?isAllowed=y&sequence=1

<1% match (Internet from 15-Feb-2019)
https://core.ac.uk/download/pdf/56371942.pdf

<1% match (Internet from 31-Mar-2016)
http://eprints.hud.ac.uk

<1% match (Internet from 01-Jul-2003)
http://corpus-delicti.com

<1% match (publications)
Jonghan Sea, Eric Beauregard. "Body Disposal", International Journal of Offender Therapy and Comparative Criminology, 2017

<1% match (Internet from 11-Mar-2016)
http://etheses.bham.ac.uk

<1% match (Internet from 26-Oct-2009)
http://etd.lsu.edu

<1% match ()
http://203.34.9.76

<1% match (Internet from 12-Dec-2010)
http://epublications.bond.edu.au

<1% match (publications)
Pekka Santtila, Markus Runtti, Andreas Mokros. "Predicting Presence of Offender's Criminal Record From Antisocial Lifestyle Indicators of Homicide Victims", Journal of Interpersonal Violence, 2016

<1% match (Internet from 24-Nov-2018)
https://www.tandfonline.com/doi/full/10.1080/1068316031000116265

<1% match (Internet from 21-Sep-2017)
http://discovery.ucl.ac.uk

<1% match (publications)
Rossmo, . "Geographic Profiling", Geographic Profiling, 1999.

<1% match (publications)
Sorochinski, Marina, C. Gabrielle Salfati, and Gerard N. Labuschagne. "Classification of Planning and Violent Behaviours in Serial Homicide: A Cross-National Comparison Between South Africa and the US : Planning and violent behaviours in serial homicide", Journal of Investigative Psychology and Offender Profiling, 2014.

<1% match (publications)
Jessica Woodhams. "A Test of Case Linkage Principles with Solved and Unsolved Serial Rapes", Journal of Police and Criminal Psychology, 07/13/2011

<1% match (Internet from 19-May-2016)
https://www.ncjrs.gov/pdffiles1/nij/grants/242960-242995.pdf

<1% match (Internet from 01-Oct-2010)
http://athenslearning.org

<1% match (Internet from 22-Oct-2018)
https://www.ncjrs.gov/pdffiles1/nij/grants/198117.pdf

<1% match (Internet from 18-Jan-2019)
https://www.tandfonline.com/doi/full/10.1080/10683160500126227

<1% match (Internet from 14-May-2016)
http://aut.researchgateway.ac.nz

<1% match (Internet from 18-Apr-2016)
http://psychology.about.com

<1% match (publications)
"Handbook of LGBT Communities, Crime, and Justice", Springer Nature America, Inc, 2014

<1% match (Internet from 12-Jan-2017)
http://academicworks.cuny.edu

<1% match (Internet from 14-Feb-2019)
https://link.springer.com/article/10.1007%2Fs10896-007-9101-3

<1% match (Internet from 24-May-2016)
http://ir.canterbury.ac.nz

<1% match (Internet from 17-May-2011)
http://www.asiaing.com

<1% match (Internet from 16-Nov-2012)
http://ccj.sagepub.com

<1% match (Internet from 18-Oct-2017)
https://core.ac.uk/download/pdf/53320.pdf

<1% match (Internet from 17-Apr-2011)
http://socyberty.com

<1% match (Internet from 05-Feb-2019)
https://repository.up.ac.za/bitstream/handle/2263/25159/Complete.pdf?isAllowed=y&sequence=9

<1% match (Internet from 13-Feb-2014)
http://www.cudzieslova.sk

<1% match (Internet from 24-Jan-2011)
http://www.sagepub.com

<1% match (Internet from 24-Apr-2016)
https://lra.le.ac.uk/bitstream/2381/7869/1/2008woodhamsjphd.pdf

<1% match (Internet from 17-Dec-2015)
http://eprints.aston.ac.uk

<1% match (Internet from 03-Mar-2017)
http://researchonline.jcu.edu.au

<1% match (Internet from 06-Feb-2019)
https://www.verywellmind.com/clark-hull-biography-1884-1952-2795504

<1% match (publications)
Rossmo, . "Serial Murder", Geographic Profiling, 1999.

<1% match (publications)
Helinä Häkkänen. "Distance patterns and disposal sites in rural area homicides committed in Finland", Journal of Investigative Psychology and Offender Profiling, 10/2007

<1% match (Internet from 02-Mar-2018)
http://www.diva-portal.org

<1% match (Internet from 27-Nov-2014)
http://www.researchgate.net

<1% match (Internet from 22-Nov-2017)
https://eprints.qut.edu.au/107855/1/Belinda_Parker_Thesis.pdf

<1% match (Internet from 20-Feb-2019)
http://www.children.gov.on.ca

<1% match (Internet from 19-Apr-2014)
http://te_en_Venezuela_y_Latinoamricaresearchgate.net:8080

<1% match (Internet from 18-Jun-2018)
http://scholarcommons.usf.edu

<1% match (Internet from 09-Mar-2014)
http://upetd.up.ac.za

<1% match (Internet from 09-Mar-2017)
http://uir.unisa.ac.za

<1% match (Internet from 16-Aug-2015)
http://www.gis.smumn.edu

<1% match (Internet from 16-Jul-2017)
https://repositorium.sdum.uminho.pt/bitstream/1822/9860/1/tese.pdf

<1% match (Internet from 12-Nov-2018)
https://rucore.libraries.rutgers.edu/rutgers-lib/50522/PDF/1/play/

<1% match (Internet from 26-Feb-2016)
http://eprints.ioe.ac.uk

<1% match (Internet from 10-Feb-2019)
http://whenrealitybites.blogspot.com

<1% match (Internet from 17-Feb-2019)
http://mockforums.net

<1% match (publications)
Corcoran, Jonathan, Renee Zahnow, and Gary Higgs. "Using routine activity theory to inform a conceptual understanding of the geography of fire events", Geoforum, 2016.

<1% match (publications)
Samantha Lundrigan. "Spatial patterns of serial murder: an analysis of disposal site location choice", Behavioral Sciences & the Law, 07/2001

<1% match (Internet from 28-Apr-2012)
http://researcharchive.vuw.ac.nz

<1% match (Internet from 04-Sep-2017)
https://www.scribd.com/document/214705578/Crime-Scene-Profiling

<1% match (Internet from 20-Apr-2011)
http://www.ia-ip.org

<1% match (Internet from 03-May-2010)
http://people.uncw.edu

<1% match (Internet from 24-Mar-2010)
http://www.mun.ca

<1% match (Internet from 09-Sep-2014)
http://jacklevinonviolence.com

<1% match (Internet from 15-Apr-2015)
http://list25.com

<1% match (publications)
Richard N. Kocsis. "An Empirical Assessment of Content in Criminal Psychological Profiles", International Journal of Offender Therapy and Comparative Criminology, 2016

<1% match (publications)
Richard N. Kocsis, Jenny Middledorp. "Believing is Seeing III: Perceptions of Content in Criminal Psychological Profiles", International Journal of Offender Therapy and Comparative Criminology, 2016

<1% match (Internet from 09-Sep-2013)
http://wn.com

<1% match (Internet from 22-Jan-2015)
http://www.ashgate.com

<1% match (Internet from 20-Jun-2018)
http://docplayer.net

<1% match (Internet from 23-Mar-2016)
http://www.tpmap.org

<1% match (Internet from 03-Jan-2017)
http://onlinelibrary.wiley.com

<1% match (Internet from 16-Jun-2015)
http://www.sajhrm.co.za

<1% match (publications)
Petherick, Wayne A., and Brent E. Turvey. "Alternative Methods of Criminal Profiling", Criminal Profiling, 2012.

<1% match (publications)
British Journal of Forensic Practice, Volume 7, Issue 3 (2012-08-06)

<1% match (publications)
Richard Block. "Finding a serial burglar's home using distance decay and conditional origin-destination patterns: a test of empirical Bayes journey-to-crime estimation in the Hague", Journal of Investigative Psychology and Offender Profiling, 2009

<1% match (publications)
Benoit Leclerc, Jean Proulx. "An Opportunity View of Child Sexual Offending: Investigating Nonpersuasion and Circumstances of Offending Through Criminological Lens", Sexual Abuse: A Journal of Research and Treatment, 2017

<1% match (Internet from 07-Dec-2014)
http://www.docstoc.com

<1% match (Internet from 09-Sep-2013)
http://en.m.wikipedia.org

<1% match (Internet from 22-Feb-2012)
http://www.ia-ip.org

<1% match (Internet from 06-Sep-2017)
http://openaccess.city.ac.uk

<1% match (publications)
Kylie Reale, Eric Beauregard. "Body Recovery After the "First 48": Implications for Sexual Homicide Investigations", Homicide Studies, 2018

<1% match (publications)
Enzo Yaksic. "The folly of counting bodies: Using regression to transgress the state of serial murder classification systems", Aggression and Violent Behavior, 2018

<1% match (publications)
LABUSCHAGNE, GÉRARD. "The Use of Linkage Analysis Evidence in Serial Offense Trials", Advances in Police Theory and Practice, 2014.

<1% match (publications)
JONNY STEINBERG. "How Well Does Theory Travel? David Garland in the Global South", The Howard Journal of Crime and Justice, 2016

<1% match (Internet from 07-Feb-2017)
http://n.ereserve.fiu.edu

<1% match (Internet from 07-Feb-2019)
https://repository.up.ac.za/bitstream/handle/2263/60957/Masote_Teachers_2017.pdf?isAllowed=y&sequence=1

<1% match (Internet from 23-Feb-2015)
http://www.digplanet.com

<1% match (Internet from 22-Feb-2014)
http://www.inpact-psychologyconference.org

<1% match (Internet from 20-Sep-2017)
http://lib.dr.iastate.edu

<1% match (Internet from 29-Oct-2014)
http://ujdigispace.uj.ac.za

<1% match (publications)
Richard S. Lazarus. "Association-learning Theory and Personality.", Adjustment and personality, 1961

<1% match (publications)
Nicole Colombino, Cynthia Calkins Mercado, Elizabeth L. Jeglic. "Situational Aspects of Sexual Offending: Implications for Residence Restriction Laws", Justice Research and Policy, 2010

<1% match (publications)
Eric Beauregard, Benoit Leclerc. "An Application of the Rational Choice Approach to the Offending Process of Sex Offenders: A Closer Look at the Decision-making", Sexual Abuse: A Journal of Research and Treatment, 2016

<1% match (publications)
Richard N. Kocsis, Jenny Middledorp, Andrew C. Try. "Cognitive Processes in Criminal Profile Construction: A Preliminary Study", International Journal of Offender Therapy and Comparative Criminology, 2016

<1% match (Internet from 12-Nov-2015)
http://www.researchgate.net

<1% match (Internet from 17-Jan-2015)
http://nwupl.owvlab.net

<1% match (Internet from 24-Jan-2014)
http://www.ia-ip.org

<1% match (Internet from 19-Feb-2015)
http://www.researchgate.net

<1% match (Internet from 30-Jun-2009)
http://www.liv.ac.uk

<1% match (Internet from 17-Aug-2014)
http://www.officialcoldcaseinvestigations.com

<1% match (Internet from 30-Sep-2018)
http://journals.sagepub.com

<1% match (Internet from 29-Oct-2017)
https://www120.secure.griffith.edu.au/rch/file/67c63a0b-4806-4fca-b75e-d7d88ab1cb0a/1/Cheyne_2016_01Thesis.pdf

<1% match (Internet from 16-Nov-2012)
http://etd.ohiolink.edu

<1% match (Internet from 08-Feb-2019)
http://citeseerx.ist.psu.edu

<1% match (Internet from 05-Feb-2019)
https://repository.up.ac.za/bitstream/handle/2263/28570/Complete.pdf?isAllowed=y&sequence=7

<1% match (Internet from 15-May-2018)
https://onlinelibrary.wiley.com/doi/abs/10.1111/j.1745-9125.1989.tb00862.x

<1% match (Internet from 14-Dec-2018)
http://etheses.dur.ac.uk

<1% match (Internet from 26-Oct-2017)
http://www.jssm.org

<1% match (publications)
Salfati, C. Gabrielle, Amber M. Horning, Marina Sorochinski, and Gerard N. Labuschagne. "South African Serial Homicide: Consistency in Victim Types and Crime Scene Actions Across Series : Serial homicide consistency", Journal of Investigative Psychology and Offender Profiling, 2014.

<1% match (publications)
Ned Levine. "Bayesian Journey-to-Crime Estimation: An Improvement in Geographic Profiling Methodology", The Professional Geographer, 2011

<1% match (publications)
Derek J. Paulsen. "Connecting the dots: assessing the accuracy of geographic profiling software", Policing: An International Journal of Police Strategies & Management, 2006

<1% match (publications)
D. Kim Rossmo, Ian Laverty, Brad Moore. "chapter 6 Geographic Profiling for Serial Crime Investigation", IGI Global, 2005

<1% match (publications)
"Handbook of Childhood Psychopathology and Developmental Disabilities Assessment", Springer Nature America, Inc, 2018

<1% match (publications)
Envisioning Criminology, 2015.

<1% match (publications)
Jonghan Sea, Donna Youngs, Sophia Tkazky. "Sex Difference in Homicide: Comparing Male and Female Violent Crimes in Korea", International Journal of Offender Therapy and Comparative Criminology, 2017

<1% match (publications)
Hillary B. Katz, Joseph Leach, Gemma Reynolds, Sue Wilkinson et al. "Reviews: Biological Psychology: An Illustrated Survival Guide, Evolution and Genetics for Psychology, Exploring Developmental Psychology: Understanding Theory and Methods, Fundamentals of Psychology, Historical and Conceptual Issues in Psychology, Interpretative Phenomenological Analysis: Theory, Method and Research, Psychology for Inclusive Education: New Directions in the Theory and Practice, The Psychology Companion, The Sage Handbook of Quantitative Methods in Psychology, Study Skills for Psychology Students, Writing Essays at University: A Guide for Students by Students", Psychology Learning & Teaching, 2010

<1% match (Internet from 17-Apr-2018)
http://homepages.vub.ac.be

<1% match (Internet from 27-Apr-2015)
http://curve.carleton.ca

<1% match (Internet from 03-Nov-2018)
https://link.springer.com/content/pdf/10.1007%2F978-1-59745-109-3.pdf

<1% match (Internet from 27-Feb-2016)
http://arizona.openrepository.com

<1% match (Internet from 03-Jun-2015)
http://researchdirect.uws.edu.au

<1% match (Internet from 08-Feb-2019)
https://www.scribd.com/doc/147567202/DRS-2010-Montreal-Conference-Proceedings-pdf

<1% match (Internet from 05-Nov-2017)
https://link.springer.com/content/pdf/10.1007%2F978-0-387-09757-2.pdf

<1% match (Internet from 03-Sep-2010)
http://http-server.carleton.ca

<1% match (Internet from 23-Mar-2018)
http://journals.sagepub.com

<1% match (Internet from 01-Jul-2013)
http://www.eaplstudent.com

<1% match (Internet from 14-Mar-2011)
http://www.slideshare.net

<1% match (Internet from 02-Jan-2019)
https://www.scribd.com/document/240073751/Offender-Profilling

<1% match (Internet from 21-Sep-2017)
https://link.springer.com/content/pdf/10.1057%2F9781137457653.pdf

<1% match (Internet from 21-Aug-2014)
http://www.besecure-project.eu

<1% match (Internet from 23-Jun-2015)
http://homicideresearchworkinggroup.org

<1% match (Internet from 11-Mar-2016)
http://cech.uc.edu

<1% match (Internet from 14-Oct-2017)
https://dspace.mah.se/bitstream/handle/2043/20828/Bachelorthesis.MeitOhrn.pdf?sequenc=

<1% match (Internet from 27-Sep-2006)
http://jar.sagepub.com

<1% match (Internet from 17-Jun-2011)
http://www.universityessays.com

<1% match (Internet from 17-Nov-2014)
http://openaccess.city.ac.uk

<1% match (Internet from 24-Apr-2016)
https://lra.le.ac.uk/bitstream/2381/8032/3/2008carterajphd.pdf

<1% match (Internet from 20-Sep-2017)
https://open.bu.edu/bitstream/handle/2144/15446/Newcomb_bu_0017N_10902.pdf?isAllowed=y&sequence=1

<1% match (Internet from 30-May-2016)
http://cacsprd.web.virginia.edu

<1% match (Internet from 20-Dec-2016)
http://roar.uel.ac.uk

<1% match (Internet from 02-Oct-2014)
http://boc.mtholyoke.edu

<1% match (Internet from 24-May-2016)
http://dspace.flinders.edu.au

<1% match (Internet from 25-Feb-2017)
http://researchonline.jcu.edu.au

<1% match (Internet from 05-Sep-2017)
http://wlv.openrepository.com

<1% match (Internet from 14-Feb-2019)
https://en.wikipedia.org/wiki/Environmental_criminology

<1% match (publications)
Robert R Hazelwood, Janet I Warren. "Linkage analysis: modus operandi, ritual, and signature in serial sexual crime", Aggression and Violent Behavior, 2004

<1% match (publications)
Jeffery R. Osborne, C. Gabrielle Salfati. "Re-Conceptualizing "Cooling-Off Periods" in Serial Homicide", Homicide Studies, 2014

<1% match (publications)
Carrie Trojan, C.Gabrielle Salfati. "Linking Criminal History to Crime Scene Behavior in Single-Victim and Serial Homicide: Implications for Offender Profiling Research", Homicide Studies, 2011

<1% match (publications)
Karin Heinrichs, Fritz Oser, Terence Lovat. "Handbook of Moral Motivation", Springer Nature, 2013

<1% match (publications)
Louise Wattis. "Revisiting the Yorkshire Ripper Murders", Springer Nature, 2018

<1% match (publications)
Susan McNeeley. "Lifestyle-Routine Activities and Crime Events", Journal of Contemporary Criminal Justice, 2014

<1% match (publications)
Amanda L. Farrell, Robert D. Keppel, Victoria B. Titterington. "Lethal Ladies", Homicide Studies, 2011

<1% match (publications)
"Handbook of Early Intervention for Autism Spectrum Disorders", Springer Nature America, Inc, 2014

<1% match (publications)
Grant Duwe, William Donnay, Richard Tewksbury. "Does Residential Proximity Matter? A Geographic Analysis of Sex Offense Recidivism", Criminal Justice and Behavior, 2008

<1% match (publications)
Alasdair M. Goodwill. "Multidimensional Latent Classification of 'Street Robbery' Offences : MDS latent classification of robbery", Journal of Investigative Psychology and Offender Profiling, 01/2012

<1% match (publications)
David Canter. "Prioritizing Burglars: Comparing the Effectiveness of Geographical Profiling Methods", Police Practice and Research, 9/2007

<1% match (publications)
Paul Michael Cozens, Greg Saville, David Hillier. "Crime prevention through environmental design (CPTED): a review and modern bibliography", Property Management, 2005

<1% match (Internet from 15-Jun-2013)
http://moodle.rockyview.ab.ca

<1% match (Internet from 30-Apr-2012)
http://dspace.uta.edu

<1% match (Internet from 07-Oct-2011)
http://www.scribd.com

<1% match (Internet from 25-Nov-2013)
http://uir.unisa.ac.za

<1% match (Internet from 18-Dec-2009)
http://bka.de

<1% match (Internet from 20-Jan-2013)
http://dspace.uta.edu

<1% match ()
http://childrenfirst.org.za

<1% match (Internet from 19-May-2016)
https://www.ncjrs.gov/pdffiles1/nij/grants/248832.pdf

<1% match (Internet from 26-Feb-2014)
http://repository.up.ac.za

<1% match (Internet from 05-Feb-2019)
https://repository.up.ac.za/bitstream/handle/2263/28546/dissertation.pdf?isAllowed=y&sequence=1

<1% match (Internet from 03-Jul-2014)
http://www.coursehero.com

<1% match (Internet from 02-Nov-2009)
http://ses.library.usyd.edu.au

<1% match (Internet from 08-Jun-2017)
http://www.crin.org

<1% match (Internet from 06-May-2009)
http://www.helendagner.com

<1% match (Internet from 30-Jul-2018)
https://pauljtaylor.com/wp-content/uploads/2015/09/2007-CJPSS-Snook_et_al.pdf

<1% match (Internet from 21-Sep-2017)
https://link.springer.com/content/pdf/10.1057%2F9781137391322.pdf

<1% match (Internet from 02-Mar-2018)
https://www.tandfonline.com/doi/full/10.1080/10683160500056945

<1% match (Internet from 28-Aug-2017)
http://summit.sfu.ca

<1% match (Internet from 20-Jun-2018)
http://docplayer.net

<1% match (Internet from 01-May-2014)
http://www.mun.ca

<1% match (Internet from 21-Oct-2015)
http://www.slideshare.net

<1% match (Internet from 25-Oct-2017)
https://mro.massey.ac.nz/bitstream/handle/10179/11812/02_whole.pdf?isAllowed=y&sequence=2

<1% match (Internet from 11-Nov-2009)
http://etd.ohiolink.edu

<1% match (Internet from 08-Sep-2013)
http://iris.lib.neu.edu

<1% match (Internet from 30-Aug-2017)
http://diginole.lib.fsu.edu

<1% match (Internet from 03-Nov-2017)
https://crimesciencejournal.springeropen.com/articles/10.1186/s40163-015-0036-3

<1% match (Internet from 03-Dec-2018)
https://epdf.tips/serial-murderers-and-their-victims.html

<1% match (Internet from 27-Feb-2016)
http://arizona.openrepository.com

<1% match (Internet from 29-Mar-2016)
http://eprints.hud.ac.uk

<1% match (Internet from 09-Apr-2016)
https://lra.le.ac.uk/bitstream/2381/31293/1/U139444.pdf

<1% match (Internet from 12-Feb-2018)
https://en.wikipedia.org/wiki/Geographic_profiling

<1% match (Internet from 18-Aug-2007)
http://www.popcenter.org

<1% match (Internet from 26-Nov-2008)
http://www.aic.gov.au

<1% match (Internet from 05-Aug-2010)
http://crimepsychblog.com

<1% match (Internet from 26-Nov-2014)
http://dev.cjcenter.org

<1% match (Internet from 09-Apr-2015)
http://www.researchgate.net

<1% match (Internet from 23-Jun-2015)
http://homicideresearchworkinggroup.org

<1% match (Internet from 24-May-2016)
https://www.ncjrs.gov/pdffiles1/nij/grants/249880.pdf

<1% match (Internet from 23-Mar-2017)
https://www.huduser.gov/portal/periodicals/cityscpe/vol13num3/Cityscape_Nov2011_Modelling_Criminal.pdf

<1% match (Internet from 14-Sep-2010)
http://seab.envmed.rochester.edu

<1% match (Internet from 09-Sep-2013)
http://www.cmc.qld.gov.au

<1% match (Internet from 20-Jan-2014)
http://www.homelesshub.ca

<1% match (Internet from 21-Apr-2014)
http://www.drmauricegodwin.com

<1% match (Internet from 24-Apr-2014)
http://www.personal.psu.edu

<1% match (Internet from 15-Dec-2014)
http://s1.uploadpa.com

<1% match (Internet from 04-Mar-2016)
http://opus.bath.ac.uk

<1% match (Internet from 09-Apr-2016)
http://eprints.mdx.ac.uk

<1% match (Internet from 23-Feb-2017)
http://digitalcommons.ithaca.edu

<1% match (Internet from 24-Oct-2017)
https://espace.library.uq.edu.au/data/UQ_384075/s4305213_phd_finalthesis.pdf?Expires=1508961116&Key-Pair-Id=APKAJKNBJ4MJBJNC6NLQ&Signature=QgcZn5prQMLJq9bsf2h5tgPTabmIS~xAEeVNOtY6BCHsbx7MChPUpKHhe33cCyOHOIhPYB~Elp~ooyGxI~gf/XRoMQRWIB6sSf2aqcon6EmmdcrDQcuJEXsS79OwG8edkQRiMp0wvkGLvGJqMe3nE46lxXARpLcYyMONQJFSu7gsGteAlEpCzwtGhcowIhOuaG0-QFk2cPHYcNAbmV5gO4gkSVvpzdxt6V1PZmkYFVxk2OHHu6DllGAyW6GSaQoNRsk0GZDG6s1BujJl2eeXFPrJSic~r57NrzTUCirTioWQLkMVninw__

<1% match (Internet from 04-Nov-2017)
https://era.library.ualberta.ca/files/7m01bk92k/Larocque_RachelleMJ_Fall2009.pdf

<1% match (Internet from 06-Nov-2017)
http://digitalassets.lib.berkeley.edu

<1% match (Internet from 06-Feb-2019)
https://repository.up.ac.za/bitstream/handle/2263/46278/Sonnenberg_Significance_2015.pdf?isAllowed=y&sequence=1

<1% match (Internet from 14-Sep-2003)
http://www.business.mmu.ac.uk

<1% match (Internet from 29-Sep-2003)
http://giswww1.bcit.ca

<1% match (Internet from 15-Mar-2008)
http://www.midland.edu

<1% match (Internet from 05-May-2010)
http://digitalcommons.unl.edu

<1% match (Internet from 23-Oct-2011)
http://www.africa4womensrights.org

<1% match (Internet from 19-Feb-2017)
http://documents.mx

<1% match (Internet from 08-Aug-2017)
https://dspace.lib.cranfield.ac.uk/bitstream/1826/12261/1/Sayles_R_2015.pdf

<1% match (Internet from 08-Sep-2017)
http://theses.ucalgary.ca

<1% match (Internet from 28-Sep-2017)
http://ufdcimages.uflib.ufl.edu

<1% match (Internet from 27-Nov-2017)
http://www.as.edu.rs

<1% match (Internet from 05-Jan-2018)
http://openaccess.city.ac.uk

<1% match (Internet from 06-Feb-2019)
https://akademiai.com/doi/full/10.1556/2006.5.2016.032

<1% match (publications)
John M. Hadley. "Relearning.", Clinical and counseling psychology, 1958

<1% match (publications)
Paul J. Taylor, Brent Snook, Craig Bennell, Louise Porter. "006 Investigative psychology.", American Psychological Association (APA), 2015

<1% match (publications)
Joshua Kent. "Efficacy of standard deviational ellipses in the application of criminal geographic profiling", Journal of Investigative Psychology and Offender Profiling, 10/2007

<1% match (publications)
"The Urban Fabric of Crime and Fear", Springer Nature America, Inc, 2012

<1% match (publications)
Richard N. Kocsis, Gillian Z. Heller, Andrew Try. "Visual Versus Narrative Case Material: The Impact on Criminal Psychological Profiling", International Journal of Offender Therapy and Comparative Criminology, 2016

<1% match (publications)
N. A. Langdon. "Functional Analysis of Precursors for Serious Problem Behavior and Related Intervention", Behavior Modification, 07/09/2008

<1% match (publications)
"Encyclopedia of Child Behavior and Development", Springer Nature America, Inc, 2011

<1% match (publications)
Jessica Ebberline. "Geographical profiling obscene phone calls-a case study", Journal of Investigative Psychology and Offender Profiling, 2008

<1% match (publications)
Beavers, Gracie A., Brian A. Iwata, and Meagan K. Gregory. "Parameters of reinforcement and response-class hierarchies : RESPONSE CLASS", Journal of Applied Behavior Analysis, 2014.

<1% match (publications)
Ashley Hewitt, Eric Beauregard, Garth Davies. ""Catch and release"", Policing: An International Journal of Police Strategies & Management, 2012

<1% match (publications)
Melanie C. Mogavero, Ko-Hsin Hsu. "Sex Offender Mobility: An Application of Crime Pattern Theory Among Child Sex Offenders", Sexual Abuse: A Journal of Research and Treatment, 2017

<1% match (publications)
Gerbrand G Mans. "Using PGIS to Conduct Community Safety Audits", The Electronic Journal of Information Systems in Developing Countries, 2006

<1% match (publications)
Kathleen Heide. "Sexually Motivated Child Abduction Murders: Synthesis of the Literature and Case Illustration", Victims & Offenders, 01/2009

<1% match (publications)
"Handbook of Evidence-Based Practices in Intellectual and Developmental Disabilities", Springer Nature America, Inc, 2016

<1% match (publications)
Marissa P Levy. "Auto Theft: A Site-Survey and Analysis of Environmental Crime Factors in Atlantic City, NJ", Security Journal, 09/08/2008

<1% match (publications)
"Concluding remarks", Forensic archaeology, 2015.

<1% match (publications)
Kyeyoung Park. ""I Really Do Feel I'm 1.5!": The Construction of Self and Community by Young Korean Americans", Amerasia Journal, 2019

<1% match (publications)
Scott, H., and K. Fleming. "The Female Family Annihilator: An Exploratory Study", Homicide Studies, 2014.

<1% match (publications)
Volkan Topalli. "Criminal Expertise and Offender Decision-Making", The British Journal of Criminology, 2005

<1% match (publications)
Michael L. Benson. "White-Collar Crime from an Opportunity Perspective", The Criminology of White-Collar Crime, 2009

<1% match (publications)
James Ost, Alan Costall, Ray Bull. "False confessions and false memories: a model for understanding retractors' experiences", The Journal of Forensic Psychiatry, 2001

<1% match (publications)
"Creating Holistic Technology-Enhanced Learning Experiences", Springer Nature, 2013

<1% match (Internet from 11-Mar-2016)
http://cech.uc.edu

<1% match (publications)
David Joubert. "Developmental correlates of offending patterns in serial rapists", Journal of Criminal Psychology, 2012

<1% match (publications)
Douglas M. Walker. "Casinonomics", Springer Nature America, Inc, 2013

<1% match (publications)
Kocsis, R. N., and G. B. Palermo. "Disentangling Criminal Profiling: Accuracy, Homology, and the Myth of Trait-Based Profiling", International Journal of Offender Therapy and Comparative Criminology, 2013.

<1% match (publications)
Brin Hodgskiss. "Lessons from serial murder in South Africa", Journal of Investigative Psychology and Offender Profiling, 01/2004

<1% match (publications)
Bruinsma, . "Social Bond", Encyclopedia of Criminology and Criminal Justice, 2014.

<1% match (publications)
Alfredo Verde, Antonio Nurra. "Criminal Profiling as a Plotting Activity Based on Abductive Processes", International Journal of Offender Therapy and Comparative Criminology, 2009

<1% match (publications)
David Canter. "Beyond'Offender Profiling': The Need for an Investigative Psychology", Handbook of Psychology in Legal Contexts, 03/15/2003

<1% match (publications)
Ned Levine. "Introduction to the special issue on Bayesian journey-to-crime modelling", Journal of Investigative Psychology and Offender Profiling, 10/2009

<1% match (publications)
Brent Snook, Kirk Luther, John C. House, Craig Bennell, Paul J. Taylor. "The Violent Crime Linkage Analysis System", Criminal Justice and Behavior, 2012

<1% match (publications)
Joshua D. Kent. "Incorporating Land Cover within Bayesian Journey-to-crime Estimation Models", International Journal of Psychological Studies, 05/28/2012

<1% match (publications)
Richard N. Kocsis, Ray W. Cooksey, Harvey J. Irwin, Greg Allen. "A Further Assessment of "Circle Theory" for Geographic Psychological Profiling", Australian & New Zealand Journal of Criminology, 2016

<1% match (publications)
"The Criminal Act", Springer Nature, 2015

<1% match (publications)
Kuo, S.-Y., S. J. Cuvelier, C.-J. Sheu, and J. Zhao. "The Concentration of Criminal Victimization and Patterns of Routine Activities", International Journal of Offender Therapy and Comparative Criminology, 2012.

<1% match (publications)
Robertson, Rachel E., Joseph H. Wehby, and Susannah M. King. "Increased parent reinforcement of spontaneous requests in children with autism spectrum disorder: Effects on problem behavior", Research in Developmental Disabilities, 2013.

<1% match (publications)
"Geospatial Technology and the Role of Location in Science", Springer Nature America, Inc, 2009

<1% match (publications)
Brent Snook. "On the Complexity and Accuracy of Geographic Profiling Strategies", Journal of Quantitative Criminology, 03/2005

<1% match (publications)
"Forensic GIS", Springer Nature America, Inc, 2014

<1% match (Internet from 07-Apr-2016)

http://mro.massey.ac.nz

<1% match (publications)
Al-Azza , Narmin Dawood. "The Development of the Writing Skill in Action Pack Textbooks (1 - 6) in Jordan : An Analytical Study", University of Jordan, 2006.

<1% match (Internet from 04-Jul-2003)
http://www.law-forensic.com

<1% match (Internet from 19-May-2016)
https://www.ncjrs.gov/pdffiles1/nij/grants/208993.pdf

<1% match (publications)
Back, C.. "Managing the legal proceedings: An interpretative phenomenological analysis of sexually abused children's experience with the legal process", Child Abuse & Neglect, 201101

"Joh! It's completely a question I have never been asked before" (South Africa's most notorious serial murderer, sentenced to a world record of 2410 years, on being asked why he chose the particular areas that he did to murder his victims) CHAPTER I INTRODUCTION 1.1 Introduction and Rationale South Africa is a society overwhelmed with repeat violent offenders and law enforcement is equally overwhelmed with crime information. There is a call for a more scientific and systematic approach to crime identification and investigation in which there is a better understanding of offender behaviour in general and the availability of the information and analytical tools to act on that understanding (Canter & Youngs, 2010). Increasingly, law enforcement agencies globally are opening themselves to modified crime management systems and a developing scientific discipline, Investigative Psychology, is actively working towards making such a contribution. Investigative Psychology was borne out of the understanding that psychology can contribute towards offender investigations in multiple ways. The discipline is concerned with the application of empirically-based psychological principles and theories that may be relevant to the investigative process. The styles and patterns of offender actions are explored in all types of offences, from arson to serial murder, determining how these relate to the offenders' characteristics (Canter, 2000a; Canter, 2004b; Canter & Youngs, 2010). Investigative Psychology essentially poses the question: what does the offender reveal about himself by how and where he commits a crime? A subdivision of Investigative Psychology, geographical profiling, essentially focuses on the second part of that question: the where. Geographical profiling has been developed in recent decades and is based on environmental psychology, which has essentially concerned itself with exploring the interaction between human beings and their physical context. Studying the spatial patterns of legal activities will enrich our models and theories of criminal behaviours, since there are similar geographical patterns between the two, and thus there is much to be gained from the careful analysis of the activities of criminals across a map. According to Labuschagne (2012a), geographical profiling that is researched and confirmed is useful during a crime series investigation and can also be used later at the trial. The profiling can offer partial evidence of the overall linkage analysis under the heading Geographic Patterns of the Crime Scenes and the aim is to assist the process of making the linkages sufficient to establish that the accused is the perpetrator of the multiple crimes in question. An important factor affecting linkage analysis is that the judge in court may disregard linking evidence unless it has been supported by research. It is therefore imperative that geographical profiling be researched further in South Africa and that it develops into a commonly accepted principle within the field of crime investigation, if it is to be used as an effective linking tool. This research aims to develop further our theoretical perspective for understanding local serial murderers' interactions with their physical environment for the purposes of assisting local investigators in using the serial murderers' psychogeography to link future multiple crimes to a perpetrator. This in turn enables law enforcement agencies to red flag an area in which a serial offender is operating and thus focuses their patrolling efforts (Rossmo, 1993; Rossmo, 1995b). 1.2 The Aims and Objectives This research aims to isolate one of the factors or predictors of an offender's future behaviour – that of his geographical locales (the where) – and thus will focus not on the internal workings of his psyche but rather on the external and observable geographical behaviour of where the offender commits his crimes, and how that can be used by those tasked to investigate and prosecute such offenders. In addition, the research focus will be on serial murder specifically, the definition of which will be discussed shortly. Focus will be given to the exploration and further understanding of how serial murderers view their domain of offender operation - why they group their crimes in a certain geographical way - and how that base influences many offenders in the choice of where they conduct their criminal activities (Canter, 2007). Therefore, the fundamental question asked in this study is: what does the serial offender reveal about himself by where he commits his crimes? A comparison will be made of three aspects of the offenders' crime geography: (1) the actual geo-maps of their crime site clusters (areas that were geographically profiled); (2) their drawn mental maps of their normative lives and spatial movements; and (3) their descriptions of their movements during their crime series: why did they choose a certain area; what would have made them relocate to another area; why did they ultimately move to another area, if relevant? 1.3 Expected Outcomes The outcome of this research will ultimately be to assist those investigating these crimes and those prosecuting these crimes, to have a better understanding of how and why serial murderers select certain areas for their criminal activities. For the investigator this will allow him or her to better strategise how to apprehend the offender by identifying his area of operation or predict the next potential crime scene location. For the prosecutor it can be used as evidence against the offender when it comes to prosecuting crimes with regards to Similar Fact Evidence. In South Africa, the presiding officer of the court can determine (without expert testimony) whether particular crimes are similar enough in their nature as well as circumstantially to warrant being viewed as the work of one offender. However, the presentation of expert evidence in this regard significantly increases the likelihood that the presiding officer will convict on the modus operandi of the similar cases. This increases the amount of evidence against an offender (who under South African law will be prosecuted for each crime, not just his worst one). It allows for a series of crimes to be investigated together under one investigator or task team, thereby using police resources more efficiently and minimising unnecessary repeat court appearances. As Labuschagne (2012a) explains, linkage analysis aims to aid the officer in reaching this conclusion and geographical profiling aims to aid the linkage analysis. 1.4 Clarifying the Terminology There are two main concepts that need to be clarified in terms of how they are understood in the title and purpose of this study: serial murder and psychogeography (where the offender is engaging in the serial murdering behavior and why he is doing it there). A discussion of the broad understanding of each is presented by way of introduction. 1.4.1 Serial murder. Infamous Canadian serial offender, Clifford Robert Olson: "We can't look into other serial offenders minds as to what they do unless they allow to give their thoughts and views. You don't find many that have done this any place" (as cited in Rossmo, 1995a:7). Schlesinger (2008) advocates for the term compulsive over serial in describing those who offend in a repetitive fashion, specifically for those who are motivated because of an abhorrent internal sexual drive. The inner urge to act murderously on their disturbed sexual fantasies, once satisfied, typically paves a pathway of repeat offending. Schlesinger (2008:17) explains that "serial may be easier to understand than compulsive", since this has psychological meaning within the mental health sciences, but that the term used should denote the difference in underlying dynamics that motivate those who repeatedly offend. He uses the example of contract killers, who repeat their offenses for money, not sexual gratification. This study agrees with his first point, however, and will retain the term serial as it describes what the offender is actually doing. This is more in line with the study's focus on external, observable behaviour rather than on internal psychological processes or motives. Although serial murder is certainly not a new phenomenon, the term serial offender (made popular by Ressler & Shachtman, 1992), is quite recent and its definition

continues to be debated. For Holmes and Holmes (2002:337), the important question should be whether serial murder "is qualitatively and quantitatively different from other murders". Is serial murder fundamentally different because these offenders enact behaviours that would be regarded by most as neither rational nor normal (Knight, 2006)? Are they different because of the unusual indications found at their crime scenes/bases: post mortem mutilation or cannibalism; positioning the corpse in a stylised or dramatic fashion; sexual assault; overkill; torture; necrophilia and souvenir collection of clothes such as panties; belongings such as jewellery; and/or body parts (Kocsis, Irwin & Hayes, 1998)? While there may be several interesting characteristic elements of serial murder, it would be deemed important that it is defined solely in terms of its necessary criteria. Over the years, researchers and law enforcement agencies have used various definitions of serial murder. Some of these will be discussed shortly. While the definitions have shared several common themes, they have also differed in terms of particular requirements like the number of murders committed, the temporal aspects of the murders, whether victims are strangers or not, and the types of motivation. Firstly, there is much debate regarding the number of victims that a serial murderer needs to have killed in order to be classified as such. Holmes and Holmes (1998) and Brooks, Devine, Green, Hart and Moor (1987) refer to at least two or more murders whilst Douglas, Burgess, Burgess and Ressler (1992), Ressler, Burgess and Douglas (1988), Zappalà and Bosco (2007) and Scott (2008) all stipulate three or more victims. Jenkins (1994) would propose that up to four murders are required while Dietz (1986) advocates that at least five victims must be involved before an offender can be classed as a serial murderer. A second consideration in the definition of serial murder concerns the temporal aspects. Holmes and Holmes (1998) described three types of serial murder that are categorised based on the number of victims and the cooling-off period (time between murders): mass murder (the killing of three or more people at the same time), spree murder (the killing of at least three or more people within a 30 day period) and serial murder (which has emotional cooling-off periods between homicides). The cool -off period can range from hours to years (Brooks et al., 1987; Zappalà & Bosco, 2007) and is considered the essential aspect that separates the serial offender from other multiple offenders (Ressler et al., 1988; Rossmo, 2000). This thesis accepts the view held that "at least two victims must be murdered in temporally unrelated incidents with an interval of more than 24 hours" (Zappalà & Bosco, 2007:266). The stranger victim is another issue raised in the definition of serial murder. Holmes and De Burger (1988), in their descriptive list of the central elements of serial murder, mention that victim and perpetrator are strangers or light acquaintances. Other authors also describe how these victims are frequently unknown to the offender and appear to be selected haphazardly (Holmes & Holmes, 1998; Kocsis et al., 1998). Therefore, although precise definitions of serial murder differ, it is commonly accepted that the victim and the offender are strangers. Furthermore, that there is more than one murder, the murders commonly occur at separate locations, are separated in time by cooling-off periods and have no direct connections between them. Motivation has been a central element discussed and debated in the various definitions of serial murder. Holmes and Holmes (1998) assert that these offenders may generally appear to have no obvious motive for the murder whereas Zappalà and Bosco (2007:265) view it as "a compulsive act that, unlike most other forms of murder, is typically motivated by factors such as passion, revenge, or profit". Ressler et al. (1988) state that serial murders are predominantly psychologically motivated while Canter (1994) and Egger (1997) refer to the offender's powerful control over the victim. Brooks et al. (1987) state that the crime scene evidence reflects the offender's sadistic and sexual behaviour. Holmes and De Burger (1988) offered a fourfold typology of serial murderers based partly on the murderer's motive. In his study on the analysis of the social construction of the serial murderer, however, Cater (1997) determined that the hedonistic, power/control and mission-oriented typologies offered by Holmes and De Burger (1988) were too general to be mutually exclusive and definitive. The problem with motive is that human behaviour has a complex set of reasons and explanations for it. The search for a motive often does not help solve the case but is more an indication that the police are having trouble solving it (Canter, 2007). Among all the other reams of information that investigators have to sift through, it can even sometimes serve to distract and confuse them. Citing the detective Hamish Campbell, Canter (2007) proposes that we ignore why the crime was committed and focus instead on the important aspects that would lead us to the murderer. In their Psychologically Motivated Crimes Course Manual, the South African Police Service define serial murder as "occurring when a suspect(s) murder two or more victims on at least two separate occasions and the motive for the homicides are not primarily for material gain nor to eliminate a witness in another matter" (Labuschagne & Salfati, 2015:4). As mentioned by the Head of the Investigative Psychology Section of the South African Police, G. Labuschagne (personal communication, 14 February, 2015), serial murder in South Africa tends to have a sexual theme, commonly seen in the rape or indecent assault of the victim. A multi-disciplinary symposium hosted by the Federal Bureau of Investigation (FBI) in 2005 decided that motivation had no place in a general definition, as it would complicate the definition. It was agreed that the following factors needed to be included: "one or more offenders; two or more murdered victims; incidents should be occurring in separate events, at different times; and the time period between murders separates serial murder from mass murder" thus settling on a definition of serial murder as "the unlawful killing of two or more victims by the same offender(s), in separate events" (Morton & Hilts, 2005:9). A simple and broad definition that will be used in this thesis similarly discounts any description of motive, since motive is not viewed as a criterion nor is it the focus of the study. However, the spatial attribute of serial murder as mentioned by Canter and Youngs (2010) is necessary for this thesis and has been incorporated as the last part of the definition. It is described thus: Serial murder is understood to be the multiple killing of stranger victims committed by the same offender with an emotional cooling-off period between crimes, usually at distinct locations. We now turn our attention specifically to these spatial aspects of serial murder. 1.4.2 Psychogeography of serial murder. Psychogeography, a subfield of geography, was defined by Debord (1955:1) as"the study of the precise laws and specific effects of the geographical environment, consciously organised or not, on the emotions and behaviour of individuals". The particular interest in the interactions between criminals and their surrounding environments, as evidenced by the crime settings of their criminal acts, was pioneered by the Brantinghams (1981). Their environmental criminology approach placed the focus on the contextual or environmental factors that can influence criminal behaviour; how the inner psychological journeys of offenders were transformed into physical, criminal journeys. Environmental criminologists frequently make use of maps to look for crime patterns (Verma & Lodha, 2002). For Goodwin (1998), understanding the context in which the serial murderer targets his victims is necessary for understanding his hunting patterns. It has been repeatedly discovered that criminals tend to have a base in distinct areas that are located close to areas that offer opportunities for crime and thus, do not require much travelling to access (Canter, 2008). An FBI publication of their 2005 symposium on serial murder concurs that most serial murderers have very specific geographic areas in which they operate - comfort zones that are usually defined by an anchor point (such as a residence, location of employment, or the home of a relative) – and that the journey from a base point to the crime scene is often quite short (Morton & Hilts, 2005). The definition of the psychogeography of serial murder offered in this thesis is based on the integrated behavioural/environmental learning theories of Routine Activity, Response Hierarchy and Mental Mapping, as discussed in the following chapter. A summary is presented here. People move in familiar ways with least effort, building internal representations of their usual activity spaces as they go about their daily routines. This learning process is no different for the serial murderer, except that as he moves about, he learns of criminal possibilities along these paths. Given that he successfully achieves his murderous goals by doing so, he is likely to repeat (and reinforce) the familiar areas in which he acts out these criminal behaviours. These movements get increasingly less cognitive and become unconscious, learned habits. To have the greatest chance of success and to avoid detection, mental maps (internal representations) of the places that serial murderers ordinarily use and are well known to them influence them in where they seek out their victims, murder them and dispose of their bodies. In turn however, these locations give insight into the mental maps, and thus probable activity spaces, of serial criminals. Observing where they continue to commit their crimes then, tells us something about their formed mental maps of their familiar activity spaces (Hull, 1943; Dollard & Miller, 1945; Tolman, 1948; Canter, 1977; Cohen & Felson, 1979; Brantingham & Brantingham, 1981; Rossmo, 2000; Felson, 2006; Canter, 2007; Cohen & Felson, 2010; Canter & Youngs, 2010). This thesis then understands the psychogeography of serial murder to be concerned with how serial murderers view the domain around their base (whether home or otherwise) and how their

decisions to seek out opportunities for crime are impacted by their learned mental maps of their routine activity spaces. 1.5 Structure of the Thesis Chapter one serves as an introduction to the study: its rationale and aims. Chapter two addresses its theoretical foundation, the environmental learning theories of the psychogeography of human behaviour, with particular emphasis on response hierarchy, routine activity and mental mapping. Geographical profiling is discussed in Chapter three with its application to serial murderers. Chapter four regards the methodology of the study and Chapter five presents the interview results followed by the analysis in Chapter six. Some themes to be covered include: why the offenders chose to act where they did; why they deviated in any instances where they did deviate from their modus operandi or geography; why they later reverted to their original scenes; and why there were certain time lapses between murders. Summary conclusions and recommendations for future research will be presented at the end, in Chapter seven. "All behavior must necessarily occur in space" (Clark Hull) CHAPTER II PSYCHOGEOGRAPHY OF HUMAN BEHAVIOUR As discussed in the previous chapter, this thesis understands the psychogeography of serial murder to be concerned with how serial murderers view the domain around their base (whether home or otherwise) and how these learned mental maps influence their crime- seeking behaviours within the geographical landscape. In essence, it is trying to understand how offenders view and experience their world, in particular their activity space. Serving as the theoretical foundation of this understanding, this chapter examines how people generally learn and gain experience in the context of the spatial environment (behaviourism and environmental psychology) and how this observably executed, geographical behaviour specifically applies to the serial murderer (environmental criminology). Based on this foundation, the integration of the theories of response hierarchy, mental mapping and routine activity are presented as the joint theoretical framework in this research. 2.1 Behaviourism Tarde (1903), a sociologist, claimed that crime starts as a fashion and becomes a custom while Sutherland (1939), dubbed the father of American criminology, asserted in his Differential Association Theory that offending behaviour is learned and furthermore, that it is learned similarly to how any other behaviour is acquired. The nature versus nurture debate has always been a contentious issue in Psychology: how much of our behaviour is innate and how much of it is learned. Hence, some psychologists would argue that criminal behaviour must be learned, since no person is born an offender, while others would search for evidence of congenital traits that could predispose some people to criminal behaviour later in their lives. The quest to really and fully understand the motives (the why) and the modus operandi (the how) of the offender is a complex process and would exceed the capabilities of a single study. Since this thesis has the specific aim of isolating one of the factors of serial murder, the geographical place, the selected foundational theory need not explain the internal workings of the offender psyche but should rather focus on the external and observable geographical behaviour of where he commits (and may continue to commit) his crimes. Is human geographical behaviour learned, patterned and predictable? If so, can it be argued that this predictability can be extrapolated to the spatial behaviour of the serial murderer? We take a look at the foundational theories of learned behaviour by way of introduction. 2.1.1 Early behaviourists. The notion of human learning finds its origins in the prominent work of the early behaviourists. On the nurture side of the crime debate, behaviourism is a theory of learning founded upon the notion that behaviours are all acquired and shaped through interaction with the environment and our responses to environmental stimuli: a process called conditioning (Akinsanmi, 2012). Behaviourism postulates then that the offender is essentially a passive respondent to contextual stimuli. Both positive and negative reinforcement shape and condition his behaviour and they increase the likelihood of the antecedent behaviour being repeated. In contrast, both positive and negative punishment decreases this probability. Positive punishment refers to stimulus application while negative punishment refers to the withholding of a stimulus. Learning is thus viewed as a change in behaviour in the offender. Social learning, a branch of behaviour theory that is relevant to criminology, specifically views criminality as more than instincts or drives but as a function of learned habits that have resulted from experiences with the environment (Hale, 1993). It is acknowledged at the beginning, that on its own, behaviourism certainly does not account for all types of learning nor does it explain the full complexity of human behaviour, including offender behaviour, because internal mental states and unconscious determinants are not taken into consideration (Akinsanmi, 2012). It does, however, remain an influential theory to the present day and it provides a useful framework for examining specifically the observable, geographic nature of multiple crimes. Because it is based upon observable actions, behaviourism research data is easier to quantify and collect. The term behaviourism was coined by Watson (1913) who campaigned strongly for scientific and objective methods in the research of psychology. With his extreme Methodological Behaviourism (called S-R Theory), "a theoretical orientation based on the premise that scientific psychology should study only observable behavior" (Weiten, 1989:8), Watson emphasised external behavioural reactions to situations, rather than the internal, mental states of people. In his opinion, since there was no way to directly observe inner mental events, there would be no way to verify conclusions drawn about them either. He proposed that for psychology to be a scientific discipline, the introspective method of examining cognitions, emotions and moods would need to be removed as a focus of study in favour of observable behaviour (responses) to stimuli (detectable input) from the environment. Watson (1913) proposed that the process of classical conditioning – learning a new behaviour via the process of association - was able to explain all aspects of human psychology. He recognised the significance of Pavlov's (1927) theory of classical conditioning. It had paved the way for a new, more objective method of studying behaviour that operated on a principle of stimulus-response and assumed that a learner is basically a passive respondent to environmental stimuli. These principles were demonstrated in his experiment with dogs. Pavlov rang a bell each time that he brought food to the dogs: a conditioned stimulus. At first, the dogs salivated at being presented with food but after some time they began to associate the ringing bell with their food and would salivate when hearing the bell even if food was not presented simultaneously (a conditioned response). While the neutral signal was the tone sound, the spontaneous reflex was salivation in response to food. Pairing the tone (neutral stimulus) with the presentation of the food (environmental stimulus), the sound alone could elicit salivation (Pavlov, 1927). Watson (1913) regarded the S-R conditioning as the essential basis of learning and habit formation that was also applicable to human beings. For him, individual differences in habitual responses were due to different experiences of learning and that these habits, if frequently and recently repeated in the context of effective stimuli, were reinforced (Watson, 1913). It was William James (1890), a cognitive psychologist, who used the term habit and intended it to refer to behaviour requiring minimal conscious control. He said, "A strictly voluntary act has to be guided by idea, perception, and volition, throughout its whole course. In a habitual action, mere sensation is a sufficient guide, and the upper regions of brain and mind are set comparatively free" (James, 1890:115–116). Similarly, Guthrie's Contiguity Theory (1935) stated that learning happened when a neutral stimulus and a response occurred almost simultaneously. For him, a specific response given to a particular stimulus will tend to be associated with and repeated in response to that particular stimulus in the future, and thus begin to create a habit. Conversely, he proposed that breaking an undesirable habit involved identifying the triggering cues and then electing to offer a different response to those cues (Guthrie, 1935). The criticism laid against his theory was that it was insufficient to explain more complex learning, however (Brennan, 1998). Though many recognised the classical conditioning theory as very mechanistic and robotic, some behaviourists continued to campaign for Watson and Pavlov's ideas. Skinner's (1953) Radical Behaviourism, though not denying the existence of internal mental states and therefore not as mechanistic as Watson in his view that we're helplessly controlled by environment, insisted that they could not be studied scientifically. Skinner was heavily influenced by the work of Thorndike (1911), who introduced the concept of reinforcement. Reinforcement "is the process in which a behaviour is strengthened by the immediate consequence that reliably follows its occurrence. When a behaviour is strengthened, it is more likely to occur again in the future" (Miltenberger, 2003:69). Skinner (1953) agreed with Pavlov, that the most basic form of learning is associative learning, and described a secondary reinforcement where a neutral stimulus could become reinforcing if associated with the reinforcing stimulus. Operant conditioning made use of rewards and punishments to reinforce given responses. Skinner viewed learning in terms of shaping voluntary human behaviour as a result of greater or lesser negative or positive reinforcement and punishment. Most social behaviour (including verbal behaviour, sexual behaviour, driving a car) is of an operant nature, caused by external stimuli (Kazdin, 2001). Positive unconditioned reinforcers include food, water and sexual stimulation while pain or extreme heat or cold can serve as unconditioned negative reinforcers. Secondary or conditioned reinforcers, on the

other hand, are stimuli that were once neutral but became reinforcers by being at least occasionally paired with an unconditioned reinforcer or an already established conditioned reinforcer. The effectiveness of the reinforcement can be affected by several factors, including the immediacy and consistency of the resulting consequence, when it is contingent upon that behaviour, when there is a state of deprivation or some other establishing operation and also when the reinforcer is greater in amount or intensity. Individual differences can also play a role as reinforcers vary from person to person (Miltenberger, 2003). Miltenberger (2003) suggests that positive and negative reinforcement can be distinguished by asking three questions: (1) What is the behaviour? (2) What happened straight after the behaviour - was a stimulus added or removed? (3) What happened to the behaviour thereafter? Was the likelihood of it being repeated, increased? Of the two types of reinforcement, Skinner (1953) found positive reinforcement to be the more effective. Unlike classical conditioning, operant conditioning explains more complicated and even criminal behaviour, where reinforcing and rewarding consequences (excitement, monetary gains, and power) can serve to maintain criminal actions. For Miltenberger (2003), however, operant conditioning has its limitations in explaining behavior too. According to the theory, every single action must be individually reinforced. Offender activities require planning and preparation and these activities are often not rewarding, so how do serial murderers learn to spend tedious and long hours canvassing areas and victims, for example? 2.1.2 Hull's response hierarchy. The learning theories of Watson, Thorndike and Pavlov were later extended and synthesised by Hull into a Stimulus-Organism- Response (S-O-R) theory, a neobehaviouristic approach that continued to emphasise the study of observable behaviour but also permitted the notion that careful conclusions could be drawn about an organism's internal state (such as needs, drives and habits). Essentially it was Hull (1943; 1952) that introduced the idea of individual uniqueness into behaviourist learning theory. Like Pavlov, Hull concurred that behaviour is based upon learned S-R habits. Hull agreed with Watson that there could be less emphasis on mental phenomena although he did acknowledge the possibility of studying these unobservable processes. He also agreed with Thorndike and Skinner that learning is influenced by rewards. However, Hull maintained that there were additional determinants (intervening variables) unique to each individual and situation that could also influence the predictability and degree of a response. Hull believed that operationalised (made measurable) mental activities could be explored and explain the relationship between the environment and behaviour. He called these mediating processes intervening variables and said that they were physiological, such as hunger and the sex drive (Hull, 1943). Hull (1943) referred to the gradient of reward – that a response would be strengthened the more jointly it is followed by reward – and concluded that the repeated cycle of stimulus-response learning would ultimately form a habit: trial-and-error behaviour chaining. Brennan (1998) describes the two important determinants of behaviour, as viewed by Hull: habit strength and the organism's drives. Habit strength refers to the likelihood of a response occurring when it has previously been rewarded in the presence of the stimulus and it depended on two principles: contiguity and reinforcement. The learning process is contiguity (close temporal relationship) between stimulus and response, under conditions of reinforcement. The second important influence on behaviour, the organism's drives, are primary responses that are motivated by internal, biological states such as hunger, or external states such as pain. Furthermore, drives can also be secondary (acquired drives) in that they have been learned by association to feelings of satisfaction or distress (Brennan, 1998). To illustrate with the serial offender, one might become driven to murder if murdering someone has previously been associated with a great sense of power. Hull (1943) proposed that the strength of an S-R habit developed because the rewards reduced the drive (fulfilled a need) and that together with stimulus intensity and reward immediacy, these strengthened response likeliness (created motivation). At the same time, inhibitory factors like fatigue decrease the likelihood and strength of the response. According to Hull, therefore, it is possible that different responses with varying degrees of habit strength can be learned in relation to the same stimulus (Hull, 1943). In summary, Hull had suggested that learning happens as a result of experiences that eventually culminate into routine actions. His basic assumption was that the excitatory potential E (the tendency to produce a given response under the effect of a stimulus), determining the strength of a response is a multiplicative function of a learning factor, habit strength H, and a generalised drive factor, D, illustrated as E = H X D (Brennan, 1998). Dollard and Miller (1945; 1950) used Hull's theory and referred to four fundamental concepts about learning: drive, cue, response and reward. Drive refers to wanting something, such as the desire to kill, which motivates learning as it impels the individual to respond. Cue is noticing something distinctive, such as a potential victim walking alone in a familiar place, which determines what, where and when a response will be given. Cues can include sights, smells or even thoughts. The closer the connection between the cue and the response, the better the learning in terms of response accuracy and speed. Response involves doing something, which is learned and could be to kill the victim nearby for example. The drive has impelled the person to respond to particular cues. Responses that are selected from the full range of possible or beneficial options become the most likely and dominant behaviours, thus developing a response hierarchy. Responses may shift their positions in the hierarchy, however, particularly if the dominant response is blocked for any reason. The serial offender, aware that his dominant response will incur heavy punishment, may then produce different responses that he perceives will most achieve his desire for gratification while minimising penalty. Reward is getting something because of a response in the learning sequence, which therefore strengthens the response because the drive is reduced. For example, murdering in the physical proximity will provide more immediate release of aggressive tension. Rewards can be innate or learned and they tend to shift responses up the hierarchy, while punishment or extinction shifts them lower. The revised hierarchy is termed the resultant hierarchy (Dollard & Miller, 1950). Hull's theory occupied a dominant position in behaviourism throughout the 1940s and 1950s with his elaborate and systematic account of behaviour systematised into mathematical expressions (Hull, 1952). Although some asserted that many details of the theory did not stand the empirical test, Hull's drive reduction theory served as a general theory of learning which inspired further work by other researchers (Brennan, 1998). It is upon Hull's proposed cycle of stimulus-response learning which ultimately forms a habit, that the concept of Response Hierarchy is based. Response Hierarchy refers to the ordering of a series of responses according to the likelihood of their being elicited by a particular stimulus and can essentially be viewed as the way of least effort. It postulates that people are typically lazy by nature and thus behave and move in familiar ways and along familiar paths that require the least effort. Hull (1943:293) referred to this as the "law of less work". Over time, through conditioning and the learned stimulus- response-reward cycle, these become unconscious habits (dominant responses) and a response hierarchy is formed. When responding to a stimulus, people default to the most habitual option. However, if this response is not possible, the second response down the hierarchy will be selected. Similarly, if the second response is prevented, then the third response is chosen and so forth (Chaplin & Krawiec, 1970). Dollard and Miller's (1945:14) description of the relationship between their four factors of learning offers a useful summary of the response hierarchy: The drive impels responses, which are usually also determined by cues from other stimuli not strong enough to acts as drives but more specifically distinctive than the drive. If the first response is not rewarded by an event reducing the drive, this response tends to drop out and others to appear. The extinction of successive non-rewarded responses produces so-called random behaviour. If some one response is followed by reward, the connection between the cue and this response is strengthened, so that the next time that the same drive and other cues are present, this response is more likely to occur. This strengthening of the cue-response connection is the essence of learning. Hence, the physical geographical locales in which we conduct our behaviour ultimately become less cognitive, planned or rational in choice and are more a reflection of learned behaviour that have just become habitual patterns (Chaplin & Krawiec, 1970). An example of a response (R) hierarchy in a serial murderer, on seeing the potential victim (stimulus S), could be: ? R1: stalk and kill the victim within the familiar terrain (dominant response) ? R2: stalk, restrain, move and kill the victim away from familiar terrain ? R3: stalk, restrain, move and kill the victim far away from familiar terrain ? R4: suppress the impulse to kill, go home and release aggression by punching a punch bag ? R5: suppress the impulse to kill and just walk/drive past the victim After being exposed to the stimulus (S), people, who are generally lazy by nature (and possibly view this as the most intelligent choice), will ordinarily opt for the easiest response (R1). When this repeated response elicits a repeated reward, it becomes the habitual dominant response and a resultant hierarchy is established. Similar to the laboratory rat in the Skinner Box experiment (1953), who repeatedly pressed the lever because it had learned that this was an easy way to be repeatedly

rewarded with food, so the serial murderer learns to perpetrate crimes with the least effort (in close proximity to his base, more familiar, more immediate). Thus when the serial murderer then gains the reward (the release of sexual and/or aggressive tension), so the tendency to murder close-by becomes the habitual default response. This is reflected in the equation below as: S - R1 - R1 - R1 R2 R3 Within the operant conditioning literature, the response-class hierarchy has received little attention over the years. However, recent research has developed a model of a response-class hierarchy such that the phenomenon might be more easily studied (Shabani, Carr & Petursdottir, 2009). Consistent with the response class hierarchy hypothesis, researchers have determined that precursor behaviours, like screaming or foot stomping, were functionally related to and occurred immediately prior to more severe problem behaviours, such as head banging and body hitting, suggesting that they were thus members of the same response class (Smith & Churchill, 2002; Harding, Wacker, Berg, Barretto, Winborn & Gardner, 2001; Richman, Wacker, Asmus, Casey & Andelman, 1999). Other studies have demonstrated that the extinction of different members of a response class results in the resumed increase of other recently reinforced responses and that members of the hierarchy are mainly related in terms of response effort (Shabani et al., 2009; Magee & Ellis, 2000; Shukla-Mehta & Albin, 2003). Understanding how this process occurs has important implications and would thus be useful for future research (Lieving, Hagopian, Long & O'Connor, 2004). 2.1.3 Tolman's mental mapping. Hull (1943) had stressed that the goal of learning should be thought of as a reward or reinforcement and that it was necessary for learning to occur whereas Tolman (1948) believed that learning could occur in the absence of a goal (identifying this as latent learning), which perked great interest since it seemed contradictory to the commonly- held view that reinforcement was necessary for learning to occur or that learning occurs as an automatic response to environmental stimuli. In his two-week classic experiment, Tolman observed the daily behaviour of three groups of rats that had been placed in mazes. The first group of rats always found food at the end of the maze. The second group never found food, while the rats in the third group only received food on the eleventh day. The rats in Group 1 had learned to dash to the end of the maze, while those in Group 2 wandered around randomly in the maze. For the first ten days, the rats in Group 3 behaved similarly to the rats in Group 2. However, when food was introduced on the eleventh day, these rats also quickly learned to rush to the end of the maze. Within a day, they performed as well as the rats in Group 1. Other experiments indicated that latent learning can occur in a shorter space of time. As Tolman (1948) demonstrated in his experiments, organisms can apply prior learning to future situations and therefore Tolman challenged the reductionistic view of automated responses to stimuli, as proposed by Watson and Hull. Tolman (1948) viewed behaviour to be goal directed and that cognition, which can be defined as "the mental processes involved in acquiring knowledge" (Weiten, 1989:16) and includes expectations and hypotheses, was learned and deduced from directly observing behaviour. Translated in terms of serial murder, here is an example. An offender walks past a nail boutique at the back of a shopping complex en route to his supermarket every week. He observes that the boutique is quite secluded and that women leave the shop alone. If one day he should feel compelled to attack a woman, he would recall the boutique and be able to head straight to that locale because he already knew where it was. An intervening variable in Tolman's approach was the cognitive or mental map: a mental representation of surroundings. As demonstrated in his experiments with rats, the animals learned a cognitive map of the maze by recognising the significance of environmental cues along the route that lead to food. As the rats practised, they had opportunities for building the map and as they were rewarded, their behaviour had purpose. He referred to this as place learning and stated that learning a place requires a cognitive map of that place. According to him, the cognitive map creates the possibility of learning new and faster pathways (Tolman, 1948). Mental maps will be discussed again later in the chapter. Opposing views on reinforcement were offered as explanations for the latent learning experiments. For Hull, learning occurs when a motivating and reinforcing state are both present, whereas Tolman denied that reinforcement is required for learning (Spence & Lippitt, 1965). Cole (1953:337) offered the following conclusion regarding latent learning: Perhaps the main emphasis should be placed upon the fact that the rapid reorganization of skills under the stress of motivation cannot take place without the preceding skills. The moral does not seem to be that learning takes place without any reinforcement, since there was reinforcement in the sense that some events regularly followed others even in the preliminary runs before food was brought in. Hull's many productive students - among them Mowrer, Dollard and Miller - continued to develop his ideas over the years. Though still not willing to make conscious thought the focus of study, they did soften their positions on the acceptability of internal mental states (Brennan, 1998). Mowrer's (1960) two-stage theory merged the theories of Hull and Tolman and highlighted the use of two learning principles. Hull maintained that drives were internal states, the reduction of which was rewarding and Mowrer proposed that fear was one such drive. Mowrer created a distinction between classical and instrumental learning. He campaigned for all learning being sign learning (classical conditioning) while solution learning (reinforcement) was viewed dualistically: incremental reinforcement/punishment (where stimuli became signs of fear) and decremental reinforcement/reward (where stimuli became signs of hope) He stated that it was not sufficient for an organism to expect something; it would need to do something (Chaplin & Krawiec, 1970). Similarly, Tolman also later softened his position and practically bordered on accepting reinforcement theory for certain kinds of learning. He ultimately stated: In the course of learning something like a field map of the environment gets established in the rat's brain. We agree with the other school that the rat in running a maze is exposed to stimuli and is finally led as a result of these stimuli to the responses which actually occur. The incoming impulses are usually worked over and elaborated in the central control room into a tentative, cognitive-like map of the environment. And it is this tentative map, indicating routes and paths and environmental relationships, which finally determine what responses, if any, the animal will finally release (as cited in Chaplin & Krawiec, 1970:192). It is the contention of this thesis, that both of these behaviourist approaches can be merged in the understanding of the learned spatial behaviour of people, including serial offenders. Like Tolman's rats, the individual who is familiar with his locale, will be able to follow various routes to a given place even if his usual pathway is blocked. Hull's reward expectancy is important though. If the individual is anticipating a reward and this is changed or removed, the behaviour will be affected; that is, the learning of the mental map is reinforced by expecting and receiving rewards (Chaplin & Krawiec, 1970). The foundational theories of learned behaviour were examined and the focus now shifts to the context in which this learning and human experience occurs: the spatial environment. 2.2 Environmental Psychology The origins of environmental psychology are not known; however, Willy Hellpach is credited with being the first to use the term and discussed the impact of environment on people in his book, Geopsyche (Hellpach, 1935). Developed after the Second World War, environmental psychology primarily explores the relationship between people and their environment and it can be defined as "a multidisciplinary behavioural science, both basic and applied in orientation, whose foci are the systematic interrelationships between the physical and social environments and individual human behavior and experience" (Veitch & Arkkelin, 1995:5). Lewin (1951) expressed environmental psychology as an equation: B = f (P, E) where behaviour (B) is a function (f) of two interdependent variables, the Person (P) and the Environment (E). In the current thesis, environments are perceived as areas where repeated interactions with space occur: the activity space. The activity space constitutes the area in which the person resides and conducts daily activities (going to work, engaging in recreational activities). Schmitz (2004) describes the activity space of an offender being within his awareness space, the area about which an offender has general knowledge. Places within the activity space are defined by boundaries, which mark the edges or outer limits of the place and thus differentiate one place from another as well as their associated messages, meanings and rules. Boundaries enclose places and thus behaviours since they influence our understanding and use of places. Multiple physical elements can act as boundaries and any change that allows distinction. For example, the edge where the pavement meets the grass can distinguish the public road from someone's private property. On a larger scale, rivers, mountains, railway tracks or highways can act as boundaries. These are never absolute as places can always be connected by a bridge, a gate or a window for example (Farbstein & Kantrowitz, 1978). Environmental psychology can thus be viewed as the psychology of activity space. Environmental psychology finds its theoretical background in the work of Piaget's (1973) general intellectual development and it proposes four levels of organisation of spatial cognition. In the sensorimotor phase, an infant moves within space in a totally egocentric fashion with no environmental representations. Later, the child begins to internalise his spatial actions through assimilating impressions from his environment into the

sensorimotor schemas and then accommodating the schemas to the environment. This fixed system of reference is initially domocentric (focuses on the home) and later focuses on other routes, landmarks and familiar places. Coordination of these differentiated parts occurs when the early school child begins to develop concrete operations and a better understanding of his broader environment. By adolescence, formal operations have developed and the individual can both act in concrete space as well as mentally contemplate a theoretical space without relying on concrete cues (Canter & Stringer, 1975). Tolman's (1948) concepts of latent learning and cognitive maps helped pave the way for the rise of a cognitive focus in psychology. His work also made an important contribution to the field of environmental psychology, since its central idea is that human cognition plays an important role in the perception of environment and that mental representations of certain real world characteristics exist. Theories have thus developed regarding the idea that cognitive systems enable people to respond appropriately to their environment. Churchill, in an address regarding the rebuilding of the House of Commons (in Canter, 1975:4), said: We shape our buildings and afterwards, our buildings shape us. Boulding (1956) referred to a person's image of the world – his total subjective knowledge combined or the total structure of what the person believes to be true. He essentially emphasised the importance of man's subjective interpretation of his experiences in determining his actions. This paved the way for an association to be established between this psychological structure and his unique reactions to the environment. Canter (1975) posited a cognitive model of human interactions with their physical environments – what he refers to as environmental interaction. He stated that our presence in the environment is purposive in that we are present in a place because of the roles we are performing in that place. Canter stated, "We interact with the environment over time and over space. These interactions are related to social and personal goals. Our interaction with the environment is always part of our interaction with others" (1975a:10). He added that there are a range of different interactions between a person and his environment and that these are not simple relationships. Man is an adaptive, goal oriented being who has a preferred level of interaction with other individuals that he attempts to control. As he explains, "All interactions between people involve at least a partial exposure of the qualities of self. The use of space, as an integral part of the control of both verbal and non-verbal communications, facilitates the successful presentation of the self to the people who make up an individual's world" (Canter & Kenny, 1975:163). We can ask: (1) What do people want? (2) How do factors such as familiarity or levels of personal control affect people's satisfaction? Furthermore, there can be an emphasis on the social aspects which give rise to this comprehension or with the cognitive structures that underlie it. The initial major attempts to understand the impact of the physical environment upon behaviour established that the social milieu was more significant than the physical milieu in influencing behaviour. Canter and Kenny (1975) argued that cities that are a source of stress to people are not those that are noisy or dirty necessarily, but those whose physical arrangements disrupt social relationships or encourage patterns of activity in which the proximity between two persons is accidental and insignificant. Haynes (1980) also stated that the arrangement of buildings is known to influence the patterns of social interaction among residents and cites an example of a housewife who may have fewer friends than her neighbours because her front door faces in the wrong direction. For Farbstein and Kantrowitz, "A place can be a powerful medium for communicating, expressing or reinforcing social relationships" (1978:55). Canter's (1975) cognitive model was concerned with the goal of people making sense of their surroundings and actively searching out information in order to facilitate that goal. He explained that variations are possible though. Given the notion that spatial behaviour is learned, it is feasible to expect that we may find different behaviours in different cultural contexts. Veitch and Arkkelin (1995) support this theory, stating that different environments elicit different behaviours. For example, we behave one way in church and another at a funfair. Included in this reaction are all the plans, goals, intentions, and expectations within the individual as well as a mental map of the environment within which to rehearse behaviours; that is, the behaviour is place-specific. However, we do not eat because we are in a restaurant. We have formed an image, think-travelled to a place, planned for how to get there and what to expect in order to execute pre-planned behaviours. Notably, according to Veitch and Arkkelin (1995), we also frequently make comparison judgements between images of two environments and these form the bases for why we prefer and seek out the one over the other. Planning and thinking must take place somewhere. It can be planned from where the behaviour will be carried out (eating because one passed a restaurant) or in a place remote from where the action will be (eating at home because one is hungry). The effectiveness of the planning is influenced by the level of knowledge of the environment as well as the level of congruence between the perceived aspects of the environment and the actual elements of the environment when one arrives there (Veitch & Arkkelin, 1995). There are other multiple mini-theories that have conceptualised the organism-environment relationship and may be of particular applicability to offenders. These theories are mentioned briefly. The stimulus load approach advocates that because people are restricted in the quantity of information that they can process, they will ignore and filter input that exceeds this capacity, barring critical information. As a result, they can experience errors in judgement, decreased frustration tolerance and may possibly also be nonresponsive to the needs of others. Similarly, the theory advocates that there are behavioural effects in stimulus-deprived environments (for example prisons) and that claustrophobic reactions result from isolated or monotonous living (Veitch & Arkkelin, 1995). Haynes (1980:22) explains: As the pace of life quickens, the brain is less able to handle the increased amount of incoming information and mental images become more simplified and possibly more distorted. The effects begin to be noticeable in human behavior. Cities are associated with higher than average rates of broken families, mental and physical illness, alcoholism, drug abuse, delinquency, violent crimes and suicide. Could these disorders be the results of failure to cope with an overloaded environment? The behavioural constraint theory refers to a phenomenon called psychological reactance: the need to reestablish our control over our environment when we perceive that this has been lost (Brehm & Brehm, 1981). Furthermore, if these attempts to reassert control fail, learned helplessness can set in (Seligman, 1975). Conversely, perceived control over one's environment can alleviate these possible negative outcomes and positively influence our behaviours (Langer & Rodin, 1975). Adaptation-level theories take it a step further and maintain that in the wake of too much or too little stimulation, people will either adapt (change their response to the environment) or adjust (change the environment). Perception of the environment requires man to interpret the physical and social components of his stimulus field. For Sonnenfeld (as cited in Lowenthal, 1969:52), the perception of a stimulus as difficult, significant or dangerous is a function of culture, economy, personality, experience and race and these will condition adaptation level which in turn determines the person's subsequent sensitivity to that stimulus. Sonnenfeld adds that "divergence between one's ideal and actual worlds would indicate a level of adaptation to, or contentment with, one's own environment" (as cited in Lowenthal, 1969:52). Thus, individual differences are recognised within people and their differences in behaviour can be ascribed to their different adaptation levels. This does not clarify whether responses are socially appropriate or not though, as in the case of the offender. Environmental-stress theories state that people must cognitively appraise the environment as threatening (environmental features are perceived through the senses and deemed to exceed some optimal point) before stress occurs and that the individual then responds in some way so as to alleviate the stress. Veitch and Arkkelin (1995) assert that theories of stress offer effective assessment of person- environment relationships since stress can be understood in terms of physiological, affective and cognitive responses to the environment. In addition, this approach allows for the prediction of behavioural coping as well as the consequences of unsuccessful coping, albeit difficult to objectively determine which particular conditions can be deemed stressful (Veitch & Arkkelin, 1995). Perception of the environment and our place in it is required for our individual survival. Haynes (1980:v) states that "it is not the objective assessment of geographical reality which influences human spatial behavior, but what reality is believed to be like". People do not have identical ways of perceiving their environments as information about the world is subjected to mental processing before it is meaningful. A two-part process of perception (millions of information signals are received via the senses) and cognition (where the information is sorted and organised in the brain so that it fits in with other knowledge and values) results in a mental image of whatever aspect of the environment the information has come from. Since this information has been sifted through two sets of filters, the resulting mental image may not be identical to reality. Therefore, human behaviour does not depend on reality but on what people think reality is (Haynes, 1980). The relationship between man and his environment is not a simple cause-effect operation but a more complicated interaction. Therefore, understanding the perceived world is an important step

towards predicting behavioural patterns and has thus received the attention of planners, geographers, psychologists and certainly crime investigators. Thus far, some of the foundational theories of general human behaviour and learning in the context of the environment have been explored. Environmental criminology, a sub-division of criminology, now focuses our attention specifically onto the interactions between the offender and his activity space. 2.3 Environmental Criminology According to Siegel (1998), one of the primary influences on the social learning of aggressive acts, is provided by environmental experiences. The field of environmental criminology was pioneered by the Brantinghams (1981). It considers the use of land, the design of streets as well as traffic patterns, and it concerns itself with the daily activities and movements of victims and offenders. The information about an offender's activity space is then used to predict where an offender will commit his crimes. Brantingham and Brantingham (1981:21) state that "environmental criminologists set out to use the geographic imagination in concert with the sociological imagination to describe, understand and control criminal events". Influenced by behaviourists Hull and Tolman, Rotter's (1954) criminology theory had a significant impact on social learning theory. Like his environmental psychology counterparts, Rotter also suggested that to understand offender behaviour, the individual's learning history and environmental experiences should both be taken into account. He described personality as an interaction of the offender with his environment and explained the relative stability of his particular responses to situations. He proposed that an offender's behaviour will change if his thinking or the environment to which he responds is altered, adding that this will require greater effort the longer he has spent establishing his beliefs. Preferences, wishes and the expectancy of rewards or disappointments are all important variables that can be modified by learning and experience (Chaplin & Krawiec, 1970). More recently, Canter and Youngs (2010) extended his environmental psychology theory into the crime context and referred to two broad patterns, based on Hull and Tolman's environmental learning theories, which reflect the spatial distribution of any serial offender's crime series. They call the behavioural approach, propinquity and the cognitive approach, morphology. Both approaches assume that crime locations are not random and both draw attention to different aspects of location choice (Canter & Youngs, 2010). In this study, propinquity will be paired off with the theories of response hierarchy as well as routine activity, a model that Rossmo (2000) refers to when describing offender/environment interactions and that is also used as a platform for geographical profiling (to be discussed in the following chapter). Morphology will be paired up with mental mapping. 2.3.1 Behavioural propinquity: routine activity and response hierarchy. Propinquity, (that the crime locations are close to key places in the offender's life, particularly his home base), suggests that learning happens as a result of experiences that eventually culminate into routine actions (Canter & Youngs, 2010). The notion that offenders could become aware of opportunities for crime and /or will seek them out as part of their usual and daily legitimate activities was originally developed by Cohen and Felson (1979) and further expanded by Felson (1994) and Eck (1994; 1995). Mainly focused on providing information regarding the likelihood of individuals becoming crime victims, Routine Activity Theory is one of the main theoretical systems of environmental criminology and is also referred to as Lifestyle Theory. The main idea is that an offender and a victim, as they both engage in their non-criminal spatial activity, need to cross paths in time and space for a crime to be possible, and that the offender has capitalised on this opportunity. The dramatic increase in predatory crime in the United States over the 1960s in particular was attributed at the time to the increased number of individuals willing to break the law: motivated offenders. Taking an alternative approach, Cohen and Felson (1979) proposed that significant increases in opportunity could have caused the escalation of crime. For them, criminal activity is therefore potentially increased not only by more incentivised offenders, but also by an increased number of attractive and vulnerable potential victims. For instance, women's increased participation in the labour force from 1960 to 1970 significantly increased the public visibility of women and the daytime vulnerability of their homes (Cohen & Felson, 2010). In addition to occupational activities, Cohen and Felson (2010) proposed that the United States population was also changing their leisure routines during this period, since households with two income earners meant increased spending on their leisurely activities outside of the home as well as on lightweight items of value for inside the home. According to their theory of Routine Activity, these behavioural patterns increased the likelihood of motivated offenders encountering suitable targets in contexts that lacked adequate guardianship. Cohen and Felson (2010) put their theory to the test and found strong support for this hypothesis. Unlike many other theories of crime, Routine Activity Theory focuses not on the reasons for crime, but on the risks associated with crime. Notably, the theory explores the patterns and predictability of victimisation: how the daily lifestyles of people as well as the locations that they frequent can intersect and create higher victimisation potential (Felson, 2006). Routine Activity Theory analyses the offender's and victim's routine activity spaces and where these two overlap. The overlapping area is where the crime will most likely occur. At the heart of the theory is the idea that where effective guardianship is absent, attractive victims will be targeted. Three essential conditions for the possible perpetration of a crime are thus presented: a motivated offender, who must come together in time and space with an attractive suitable target and the crime-preventative controllers are absent, powerless or corrupt (Felson, 2006). This physical convergence in time and space is represented in Figure 1 and is an adaptation from Burton (2012). Felson (2006) describes these groups: controllers may include handlers (of offenders), capable guardians (of victims) as well as place managers (of offenders and victims). Handlers refer to the people who exert influence in the lives of potential offenders and could include partners, parents, siblings, their children, relatives, teachers, peers and close friends. Offender Potential Victim Inadequate Guardian Figure 1 Routine activity theory. Capable guardians try to protect potential victims from being targeted. Formal guardians could be the police and those in security services while informal guardians could be parents, relatives, teachers, peers, friends or neighbours. However, an ineffective guardian, who is absent, weak or corrupt will not offer sufficient protection. Place managers are the owners and managers of locations and thus regulate site access and behaviours, for both offenders and potential victims. Place managers may include retail traders, parking lot attendants, park workers, janitors, and lifeguards. As with guardians, crime is less likely in the presence of effective place managers (Felson, 2006). The overlapping presence of offenders and attractive targets is not some random distribution across places. The theory is based on two central ideas: Firstly, routine activities create opportunities for crime by providing increased contact between potential offenders and suitable victims. Secondly, these offenders consider when, where, and who to target and engage in routines within areas that have no handlers but have attractive targets. Likewise, victims also engage in lifestyles that remove them from areas of effective guardianship, thereby increasing their chances of being targeted (Felson & Cohen, 1980). With its necessity to consider where crimes actually occur, Routine Activity Theory has been applied to identifying criminal behaviour patterns in specific settings. The research has demonstrated that while some forms of crime have similar types of offenders, victims, and patterns in a range of settings, there are other forms of crime that are domain specific (Felson & Cohen, 1980). A theoretical model based on the routine activity approach, by Brantingham and Brantingham (1981), assumes that the offender moves along familiar paths and learns of possibilities along these paths: what Canter refers to as a journey to crime (Canter & Youngs, 2010). Most offenders do not engage in crime all of the time but vacillate between conventional and deviant behaviours (Agnew, 1994). Routine Activity Theory postulates then that as they engage in their legitimate behaviour, they become familiar with certain paths and potential terrain for their offending behaviour. Schmitz (2004), who geographically profiled seven well-known South African crime series after the fact, states that some of the locations within the offender's daily activity space act as anchor points - typically the residence – and are the places that are of greatest importance to him. Similarly, offenders also have their activity spaces in which they commit their crimes. Some criminal activity space coincides with their normal activity space while other criminals commute to their criminal activity space from their normal activity space. Brantingham and Brantingham (1981) included in their description of these paths, areas beyond the home such as job and recreational areas. In his local research, Schmitz (2004) discovered that the Wemmerpan Serial Murderer initially operated within his normal activity space with his residence as the anchor point. Only once he had discovered that the police were saturating his hunting ground, did he later relocate to his sister several kilometres away to murder another five victims. The Sasolburg Serial Rapist, on the other hand, travelled 30 km to his criminal activity space at the outset of his crime series and used a decoy house as his anchor point to trap his victims. The decoy house was located at the edge of an open space (Schmitz, 2004). Due to the least effort principle applied by most criminals, a high number of crimes can occur just beyond

this buffer zone while the crimes will rapidly decrease the further away they are from the buffer area. According to the FBI (Morton & Hilts, 2005), the very few serial murderers who do travel further to murder, have a travelling lifestyle which offers them multiple zones of comfort in which to operate. A comfort zone can consist of suitable targets and environments as well as acceptable risk levels to the offender. Within such a comfort zone a buffer zone exists, which the offender creates to avoid detection. The offender can however commit a crime or two within this buffer zone. Due to the least effort principle applied by most offenders a high number of crime events occur just outside this buffer zone, which decrease rapidly in number, the further away in terms of distance from the buffer area (Rossmo, 2000). According to Rossmo (2000), temporal patterns such as time of day or even the season should be taken into account since these affect the routine activities of the offender and victim. Furthermore, he adds that although crime rates are usually in proportion to the number of incentivised offenders, motivation can of course decrease if lawful ways become available for offenders to attain their goals. Conversely, motivation may increase when crime is the only viable option. Rossmo (2000) also states that crime patterns are influenced by the assimilated experiences of the offender as well as his future intents. Serial murderers will periodically shift their activities beyond the boundaries of their comfort zones, when experience has boosted their confidence, by external events that cause a change in the pattern, or to avoid detection. For example, if the police are aware of the serial murderer, staking-out his territory and informing the public of this, he may elect to move to another safer area (even temporarily) to hunt for victims and commit the murders (Rossmo, 2000). This takes into account that an offender matures; that is, he learns from experience to improve his decision-making over time. The considered factors that influence these decisions are time, effort and the information available to the offender (Rossmo, 2000). In spite of their thorough planning, serial murderers face complex logistics in selecting and approaching a victim, committing the murder and then disposing of the body successfully, particularly when multiple sites are involved (Schmitz, 2004). As these serial offenders continue to murder successfully without being caught, they begin to feel empowered and are convinced that they will never be apprehended. However, this confidence can cause them to take greater risks and thus leads to their identification and demise. It is not that serial murderers want to get caught. Instead, it is that they feel that they cannot get caught (Morton & Hilts, 2005). Routine Activity Theory makes an important contribution to crime prevention in that it suggests that the reduction of criminal opportunities and the increase of capable guardianship for the public should theoretically stop crime from happening. Therefore, where individuals reside and work and travel become important for understanding where, when, and to whom offender actions are perpetrated (Miethe & Meier, 1990; Mustaine & Tewksbury, 1997). Though some thought does go into offending (Ladouceur & Biron, 1993), planning is more focused upon the immediate crime and not upon its long-term repercussions. Young offenders particularly do not consider the long term consequences of their offences as they are more impulsive, focus more on the immediacy of their rewards and also believe that their apprehension is unlikely (Doob & Cesaroni, 2004; Tunnell, 1996; Bursik, Grasmick & Chamlin, 1990). For this reason, increasing the severity of punishment has limited power to deter potential offenders. Instead, it is thought that crimes will be avoided "if the potential targets are carefully guarded, if the means to commit crime are controlled, if potential offenders are carefully monitored, and if opportunities for crime are reduced" (Siegel & McCormick, 2006:135). For that to be realised, there needs to be an increased emphasis on understanding the actual locales of where crimes take place. With increased knowledge of the physical location, Routine Activity Theory can more effectively provide greater crime prevention by guiding the continued social development of communities (Wiles & Costello, 2008) and educating its people in making smarter decisions about their routine activities. Summing up the theories of Routine Activity and Response Hierarchy then, it is postulated that over time, these familiar routines and physical pathways have ultimately become less cognitive, planned or rational in choice and are more a reflection of learned behaviours that have simply become routine habitual patterns and form a person's dominant geographical responses. In the instance of serial murder then, these offenders also engage in their habitual behaviour (albeit criminal activities) in habitual places. 2.3.2 Cognitive morphology: mental mapping. Morphology, which is the view that the overall geometry of the distribution of offences reflects the offender's internal mental maps of possible crime locations, is linked to Tolman's (1948) notion that we develop internal representations that enable us to make choices that go beyond our own experiences. Canter (2007:182) states: We all build internal representations of our world, representations which are not entirely in accord with the way others may see that world. These are representations of who we are and the psychological journey on which we are engaged, and they are reflected in the places in which we choose to act. A central assumption in this thesis is based on Canter's (2007) postulation that there is a pattern of the evolution of crimes, and that the unfolding inner narrative of the offender is represented in his geography. As the offender travels through an area and commits crimes, he is building up a mental picture of the area that includes the areas between the places he has visited; that is, he has a notion of where places are likely to be in spite of not actually having frequented them (Canter, 2007). The cognitive aspect of action believes that offenders, like the general public, are rational beings who exercise free choice in their behaviour and are incentivised to pursue pleasure while avoiding pain (Siegel & McCormick, 2006). To this end, offenders must also evaluate their place of actions. However, it follows that an offender must have some awareness of a particular geographical locale before he decides upon the crimes that he will commit. The Brantinghams' (1981) model asserts that the crime location will largely be determined by the intersection of this geographical locale and the offender's routine patterns of movement. Included in this is the understanding of how offenders view the domain around their base (whether home or otherwise) and how that base influences many offenders in the choice of what and where they conduct their illegal activities. Environments afford offenders the opportunity to experience repeat interactions with their activity spaces which then enable their images of that space or place, to be developed into cognitive or mental maps. These mental maps are the internal representations of the places they use and comprise knowledge, feelings, familiarity, habitual paths as well as old unnoticed or forgotten experiences (Canter, 1977). Before Tolman (1948), Charles Trowbridge had alluded to the idea in 1913, that some people had imaginary maps in their heads centred upon the locations of their homes, and Frederick Bartlett published a book in 1932 which suggested that individuals draw upon internal representations as a reference when trying to reconstruct a picture (as cited in Gould & White, 1986). Lynch (1960) explored these conceptual systems within the context of particular cities. He interviewed city folk and asked them about their experiences of their physical surroundings. Part of the interview involved asking the sample of city dwellers to sketch a map of their city and to describe in detail a number of trips through the city, highlighting those parts believed to be most distinctive in the individual's mind. For Lynch (1960), the sketch map (as he referred to the mental or cognitive map) was considered very significant. It was viewed as a powerful metaphor for the subject's cognitions and was a representation of the world that the person believed to be true. Lynch concluded that mental facts could not be properly explored separate from the physical environments of which they take cognisance. He was also able to extrapolate from the interviews and sketch maps, the central elements that people used to describe and form accurate images of their city. For him, mental maps consist of the following elements: ? paths – dominant travel routes such as highways and railways; ? edges – boundaries such as rivers, freeways and railways that help to organise cognitive maps; ? districts – subareas, such as business districts or skid rows, that have unifying characteristics and well-established cores, but with indistinct boundaries; ? nodes – intense foci of activities such as intersections, shopping malls, corner shops; and ? landmarks – symbols used for orientation but which are typically not physically entered such as high buildings, trees or structures (Lynch, 1960). Kaplan (1973:275) adds that a cognitive map of the spatial surroundings is essential to human survival as people want to exercise choice: The cognitive map is a construct that has been proposed to explain how individuals know their environment. It assumes that people store information about their environment in a simplified form and in relation to other information they already have. It further assumes that this information is coded in a structure… and that this structure corresponds, at least to a reasonable degree, to the environment it represents…{ but the map} is schematic, sketchy, incomplete, distorted, and otherwise simplified and idiosyncratic. It is…a product of experience… Four domains of knowledge must be included in one's mental map: recognition (knowing where you are; being able to identify the common objects of your environment); prediction (knowing what might happen next, being familiar with what leads to what); evaluation (knowing whether these next things are good or bad, being able to anticipate whether alternative actions have

favourable or unfavourable probable outcomes); and action (knowing what to do, being able to think of effective alternatives). Through these processes, man structures his uncertain environment and makes it livable. By acquiring information, maintaining and using it, humans gain pleasure and can adapt. There are three requirements in the environment for this to be realised: it must be an environment that one can make sense of; it must offer novelty, challenge and uncertainty; and it must permit choice. There also needs to be a balance between an environment of order and one of variety (Kaplan, 1973). Downs and Stea (1973) refer to the mental map as a process by which a person learns and recollects information about the relative sites of phenomena in his daily physical environment. Mental maps are "the invisible landscapes that people carry in their heads" (Gould & White, 1986:ix) Research experiments that have candidates exploring a 2 km radius in unfamiliar terrain, and are then requested to estimate the direction and distance to the starting point, can be understood in terms of path integration as well as recognisable landmarks that are near to the starting point (Baker, 1989). For Bennett (1996), a cognitive map refers to a type of mental representation of the spatial environment. Investigations focus on the features of this cognitive representation, especially upon the systematic distortions in the cognitive map, its hierarchical nature as well as what kind of reference points stand out in the cognitive map. Cognitive maps are important in facilitating the skill of adapting to our environment, problem solving (to make decisions about where things are that we need and how to get to them) and also for communicating to others about the same environment using shared symbols (Veitch & Arkkelin, 1995). The mental map is therefore a generalised map of the area which includes the attractions as well as the features (roads, landmarks) to get to the attractions. Mental maps are influenced by the person's geographic and social location as well as the access to different transport modes available to the individual. For example, a person that does not own a motor vehicle may well have a mental map consisting of areas which can be travelled on foot and areas that are restricted to the routes of taxis. By comparison, a motor vehicle owner's mental map will probably include roads and landmarks found along roads in the area. Canter (2000b) describes how people's sketched maps of a particular area reveal the inner representations or 'mental maps' that they possess of that area and that their accuracy reflects their familiarity with that area. Their distortions also provide clues as to the unique representations that are drawn upon as a reference when drawing mental maps. Our primary knowledge of a terrain is derived from where we spend most of our time, notably where we live and work. Therefore, the offender who is offending in a particular area is demonstrating something of his familiarity with that area. This familiarity may be a product of his illegal actions but will often be influenced by the same limitations that all people face: where he has his base (Canter, 2000b). Since interaction with the environment tends to occur frequently around the home, an offender's local area may have greater social and psychological significance than other areas. For Farbstein and Kantrowitz (1978:74), Mental images can consist of photograph-like pictures of a place or can be fragmentary recollections of feelings, qualities, relationships and objects…(they) are highly individual, since they are based upon our experiences of places, what we notice, what we care about, and what we like. These authors assert that familiarity also influences our image of a place and they state that "our mental maps are as much reflections of ourselves and our society as they are reactions to a given physical environment. The maps we draw can tell us as much about ourselves as they do about our places" (Farbstein & Kantrowitz, 1978:77). Hence they differ according to age, sex, culture, background, location and familiarity with the place. As Gould and White (1986:22) state, "we know more about the areas close to us, and they tend to become much more important than others about which we know little". Haynes (1980) states that usually people feel tied to a certain place by their job, family or friends. He adds that this loyalty to a geographical locale is a very powerful sentiment and often around the home because it has associations with family. However, people also seem to have strong attachment to their immediate neighbourhood, especially if they have resided within it for a long time. Haynes (1980:33) claims that "intimate knowledge of a place, the memories of past experiences there and all the familiar human associations it has, produce a love for it that is never so apparent as when we are away". However, migration occurs when opportunities and attractions are perceived in other places. In his work on the case of the Railway Rapist, Canter (2007) stated that it revealed a person on a vicious journey in which his crimes progressed in confidence both psychologically (from unplanned opportunistic rape to calculated base murder) as well as geographically (from closer areas in which he performed his routine activities to areas further afield). In what Canter (2007) refers to as the most thorough investigation of serial murderers thus far, criminologist Eric Hickey (2002) found that two thirds of the 63 serial murderers operated within an area close to where they resided. Canter explains that "a carousel of influences holds these tendencies together. Where we go depends upon what we know to be available. What we know depends upon where we go. Over time in an area we slowly evolve our understanding of what is where from the contacts we have" (2000b:94). For even the most abnormal offender, he proposes that it may be that the same general geographical limitations are relevant. Therefore, in order for serial murderers (like other human beings) to employ a principle of least effort, they develop mental maps of the familiar area in which they move around. To have the greatest chance of success and to avoid detection, mental maps of areas well- known to them influence serial murderers in where they seek out their victims, murder them and leave their bodies. In turn, however, these locations provide insight into the mental maps, and thus awareness space and probable activity spaces, of serial offenders. 2.4 Psychogeography: Integrated Theoretical Foundation As Canter (2007) clarifies, plotting dots on maps is only part of the story of the offender's geography of crime. He stresses that central to understanding an offender's spatial behaviour, is trying to understand his thought processes about where to commit crimes. In summary, the behaviourist theories of Response Hierarchy and Mental Mapping coupled with the environmental criminology theory of Routine Activity serve as the integrated foundational platform in this study for understanding the psychogeography of serial murder. Each approach, whether route-following or mental-mapping, has validity in different circumstances (Canter & Youngs, 2010). This thesis contends that for serial murderers, the same geographical patterns of habit apply that represent the typical human way of least effort, except that these offenders have learned abnormal behaviour and seek to perform illegal acts. Like their non-offending counterparts, they too tend to be lazy and they generally employ a principle of least effort (Zipf, 1950) to move from one place of interest to another. In order for them to do so, they also develop mental maps of the area in which they move around. As they move, they build internal representations (mental maps) of their usual activity spaces as they go about their daily routines. Given that they successfully achieve their murderous goals by doing so, these offenders will repeat and reinforce these behaviours and will tend to move in familiar ways. Response Hierarchy Theory asserts that over time, these pathways have eventually developed into learned behaviour (albeit abnormal behaviour), becoming less cognitive and more unconscious habits (A. Burke, personal communication, 30 April, 2012). Taking into account the temporal patterns, since these affect the routine activities of an individual, focus is given to the physical spaces in which offenders and victims enact their daily lives and where these overlap. According to the theory, the overlapping area constitutes where the crime is most likely to occur (Felson & Cohen, 1980). To have the greatest chance of success and to avoid detection, the mental maps of serial offenders influence them in where they seek out their victims, murder them and dump their bodies. In turn, however, these locations offer insight into the mental maps, and thus probable activity spaces, of serial murderers (Canter, 2007). Observing where they continue to commit their crimes then, tells us something about the mental maps formed of their familiar activity spaces. In conclusion then, and based on these researched theories of human-environmental interaction, it would seem that human geographical behaviour is indeed learned and can be patterned and predictable. Furthermore, it can also be argued that this predictability can be extrapolated to the spatial behaviour of the serial murderer. This is the focus of the following chapter. Location, Location, Location CHAPTER III GEOGRAPHICAL PROFILING OF SERIAL MURDER The previous chapter examined the theories of how people, including serial murderers, experience their physical activity spaces, and how this translates into learned and patterned geographical behaviour. This chapter will discuss how law enforcement might use this understanding to assist in apprehending serial murderers. A form of Criminal Investigative Analysis which has grown in popularity as a powerful tool in the investigation and linkage of serial murder will be discussed: geographical profiling. There are multiple claims regarding serial murder that lack scientific rigour and typologies that are too simplistic (Canter & Youngs, 2010). There are few indications as to why offenders with particular backgrounds of abuse, dysfunctional parents or mental illness do what they do, when the vast majority of others with similar backgrounds, do not. As Pistorius (2002) mentions, the case studies of

most serial murderers demonstrates that they themselves do not understand nor can explain why they murdered their victims.Furthermore, even if the motive is clearly identifiable at the crime scene, it does not necessarily assist in the apprehension of the offender. Serial murderers are considered the toughest of the offender types to arrest, which is why law enforcers readily seek profiles of their crimes (Holmes & Holmes, 2002). Therefore, since much effort generally goes into their apprehension, the question has sometimes been asked whether they are prolific enough to warrant all the resources that go into profiling them? While no one knows with any certainty how many serial murderers there are (Muller, 2000; Pistorius, 2000), what is known is that serial murder is on the rise within South Africa, with about five new series happening each year and each series having an average of nine murders (Salfati, Labuschagne, Horning, Sorochinski & De Wet, 2015b). According to these authors, this is a high statistic by international comparison. According to Labuschagne (as cited in Retief, 2011), there is no rehabilitation programme for serial murderers and only one has ever been released from a South African correctional centre. Pistorius (2000:249) asserts that "most incarcerated serial killers have admitted that as soon as they are released they will murder again". The greatest number of murder convictions is assigned to Moses Sithole, the local offender who was convicted of 40 rapes and 38 murders (Labuschagne & Salfati, 2015). Since these offenders operate in a fashion that leaves everyone in society at risk of being victimised, it is the view of this research that it is therefore a worthwhile endeavour to strengthen our understanding of serial murder within the South African context and establish whether international research and techniques can be applied and used locally (Sorochinski, Salfati, & Labuschagne, 2015) to assist in apprehending these offenders more speedily. 3.1 Criminal Investigative Analysis (CIA) Since the inception of the FBI's Behavioural Science Unit in 1972 (Davis, 1999; Devery, 2010) and the capture of serial murderer David Meirhofer a year later using its new investigative technique, the growth and use of criminal investigative analysis in law enforcement investigations is notable. By virtue of their multiple murders and oftentimes mutilating and/or psychopathological behaviour, serial murderers specifically, often provide a lot of profiling material with which to work (Geberth, 1996; Wilson, Lincoln & Kocsis, 1997). 3.1.1 Defining CIA and offender profiling. Criminal Investigative Analysis (CIA) is a modern term for the field that was formerly referred to as offender profiling (Geberth, 1996; Davis, 1999; Devery, 2010). While some have differentiated offender profiling from psychological or criminal profiling (Bartol & Bartol, 2008), others have used offender profiling synonymously with these terms. Due to questions regarding its utility, especially by forensic mental health professionals, Torres, Boccaccini and Miller (2006) have discovered that offender profiling is better perceived if it is referred to by a different name. It is important at the outset that a distinction is made between offender profiling in the broader and narrower senses. Offender profiling in the broad sense refers to the field of Criminal Investigative Analysis (G. Labuschagne, personal communication, 5 June, 2014). In this sense, it is an umbrella term for a field that encompasses many types of services or tasks that the analyst fulfils during an investigation, such as equivocal death analyses, psychological autopsies, interview strategies, investigative guidelines and the like. Depending on the context in which it is used, profiling can also have different meanings and include: profiling unknown suspects, intelligence profiling, geographical profiling, DNA profiling, victim profiling, crime scene assessment, as well as using computer databases (Labuschagne, 2003). Within the field of CIA, however, an offender profile in the narrow sense refers to a report describing the investigative characteristics of the unknown suspect who is guilty of the crime (G. Labuschagne, personal communication, 5 June, 2014). Importantly, while offender profiles have been useful to investigators, Devery (2010) has highlighted that using them as evidence of guilt is risky and can even contribute to the miscarriage of justice. The limitations of profiles need to be understood and accepted (Mair, 1995). The profile is not intended to highlight an individual as a suspect, but is rather intended to be used as a base of comparison. Suspects that match the predicted characteristics in the profile to a greater degree are given priority over other suspects. Further evidence would be required to convict someone in particular (Labuschagne, 2003). Furthermore, there needs to be the differentiation of Crime Scene Assessment from Criminal Investigative Analysis. According to Labuschagne (2003), the former term is often used incorrectly as a synonym of offender profiling. The Investigative Psychological Section of the South African Police Services defines Crime Scene Assessment as being an attempt to comprehend what transpired during the execution of the crime (mainly murder), based on what is left at the crime scene itself (Labuschagne, 2003). Labuschagne states that it is an attempt at exclusively reconstructing the events during the time period of the crime as well as trying to determine what occurred between the offender and victim. The purpose of Crime Scene Assessment is not to offer commentary on the motives or personality types of offenders (Hickey, 2002). For Labuschagne (2003), it is a stand-alone activity which can be incorporated into an offender profile and is therefore viewed as developing one part of the profiling process which is standard procedure for the Investigative Psychology Section of the SAPS. In essence, a Crime Scene Assessment is another term that fits under the Criminal Investigative Analysis umbrella. In this study then, Criminal Investigative Analysis (CIA) will be the umbrella term for the field while offender profile, in the narrow sense, will refer to the report describing the unknown offender's characteristics and traits. More specific definitions of these two concepts will be offered. Criminal Investigative Analysis, as described by the Royal Canadian Mounted Police (n.d., para. 1), is the accepted definition in this thesis: Criminal Investigative Analysis (CIA), also known as criminal profiling, is an investigative tool used within the law enforcement community to help solve violent crimes. The analysis is based on a review of evidence from the crime scene and from witnesses and victims. The analysis is done from both an investigative and behavioural perspective. The analysis can provide insight into the unknown offender (characteristics and traits) as well as investigative suggestions and strategies for interviews and trial. In the narrow sense, several definitions of offender profiling have been suggested. The FBI defines it as an "investigative process that identifies the major personality and behavioural characteristics of the offender based on the crimes he or she has committed" (Burgess, Burgess, Douglas & Ressler, 1992: 310). Bartol and Bartol (2008) describe offender profiling as the process of using crime scene information to build a preliminary psychological understanding of an offender, while Canter (1995) describes it as the process of deducing an offender's characteristics based on his behaviour while committing the crime. Turvey (1999:1) refers to it as "the process of inferring distinctive personality characteristics of individuals responsible for committing criminal acts". For Geberth (1996:710), the offender profile is "an educated attempt to provide investigative agencies with specific information as to the type of individual who would have committed a certain crime". Kocsis (2003a:37) defines it as "the process of integrating information gleaned from the investigation of a crime into a description of the likely offender". For Strano (2004:495), offender profiling is pertinent to the analysis of repetitive crimes, like serial murder, and he calls it "an investigative support tool used by skilled law enforcement operators to provide a possible psychological and behavioural profile of an unknown offender". Muller (2000) adds that this information thus narrows the field of suspects and aids in apprehension efforts. Some of these definitions differ in that they include the crime scene behaviour of the offender as the primary source of the analysis while others also incorporate information gleaned from witnesses and surviving victims. The ultimate purpose of narrowing the possible suspects list, apprehending the culprit sooner as well as creating strategies for the trial, is incorporated in one of the proposed definitions. Offender profiling then, is essentially viewed as being used to establish the characteristics of the perpetrator, to assess the crime scene as well as to provide investigative advice. In the case of serial murder, it can also be used to establish a crime series. This approach is used by the Investigative Psychology Section (IPS) of the South African Police Service, whose primary mandate is to assist with any psychologically motivated crimes. In this thesis, the central aspect that is common to all the presented definitions will serve as the main defining factor of offender profiling: that the investigative analysis process aims to produce a description of the likely culprit. Hence, the definition of offender profiling used in this study is the one proposed by the IPS and is described as: Any activity specifically undertaken with the intent of assisting an investigator to determine the most likely type of individual to have committed a specific crime (Labuschagne, 2003:67). 3.1.2 Process of CIA. The process of assisting investigators to narrow their investigative focus and ultimately apprehend the offender, would usually involve: An assessment of the crime scene, attending the autopsy, examining all available docket material such as statements, photographs, forensic reports and investigative decisions. This information is then compared to any available research. Finally, hypotheses are formulated regarding the type of suspect who committed the crime. These hypotheses might be verbally communicated to the investigator but would normally also be formulated in a structured written report

(Labuschagne, 2003:67). According to Labuschagne (2003), this process has two essential stages. The first part of the offender profiling process involves collating all the information, reports (post-mortem autopsy, ballistic reports, and fingerprint reports) and eyewitness statements, victimology and photographs taken from the crime scene, which serves to aid the investigators in terms of creating a probable profile of the suspect. Secondly, the information must be compared to the available research, which is ideally valid for the South African context. After this two-part process, the deduced and conclusive profile is linked to the most plausible group of suspects who would match these characteristics. Very rarely will a profile be so precise that it can identify a particular person as being the culprit (Strano, 2004). Rather, a profile is primarily designed to aid the police by assisting them in reducing the number of potential suspects (Wilson & Soothill, 1996; Muller, 2000; Bartol & Bartol, 2008). Pinizzotto and Finkel (1990) describe the investigative process as an equation: what to why to who. Sourced from the crime scene (what), a certain motivation (why) is assumed and since particular motivations are linked to particular personal characteristics, from this, the possible perpetrator (who) is described. Kocsis and Palermo (2005) add to this, the how and where. This investigative process is based upon the foundational assumption that an individual's personality guides his daily behaviours, legitimate or criminal, and that his personality, signature and modus operandi remain the same (Holmes & Holmes, 1998). Investigators match the crime scene evidence to previously derived personality and behavioural features demonstrated by other criminals in past crimes. Making use of these similarities, the investigator then constructs a description of what characteristics the potential perpetrator could be expected to have (Wafler & Shaw, 2011) so that the overall list of potential suspects is narrowed down (Holmes & Holmes, 1998). 3.1.3 Approaches to CIA. There are three main approaches to CIA (Wilson, Lincoln & Kocsis, 1997; Muller, 2000), although other approaches exist, such as the behavioural evidence approach, crime action profiling (Ebisike, 2008) and Strano's (2004) technique based on the Italian Neural Network for Psychological Criminal Profiling [NNPCP]) system. For Alison, Goodwill, Almond, van den Heuvel and Winter (2010), each of the three main approaches argues for the possibility of identifying a type of potential offender from a cluster of crime scene behaviours and these are: ? diagnostic evaluation (DE) / clinical approach ? crime scene analysis (CSA) / FBI approach ? investigative psychology (IP) / scientific approach According to Turvey (1999), these crime investigation methods can approach knowledge in two distinct ways: nomothetic (inductive) or idiographic (deductive). There is a general debate within the world of offender profiling about which approach should be used. For Turvey, the inductive method studies the abstract and can be described as a tendency to generalise. It is statistical and experiential, and in profiling, it aims to gain general, universal or averaged characteristics. He states that the generalised information based on clusters of data gathered from previous offenders can be used inappropriately to make confident conclusions about a specific offender and that these are predictions, not conclusions (Turvey, 1999). Godwin (2012) states that the conclusions drawn in profiles that are constructed by the FBI (FBI approach) or psychologists (clinical approach), are based exclusively on their work experience, guesswork and the motive of the offender. Thus, he views these methods as deductive rather than inductive, as suggested by Turvey (2008), and describes the process thus: IF the assumptions are true and IF the hypotheses are valid, then the drawn conclusions will also be true. Godwin questions this, stating that the profiler's deductive opinions and premises are neither researched nor empirically tested, as in inductive approaches. He summarises deductive reasoning as the move from the passed-down general information to the case -specific. In contrast, the conclusions of empirically based inductive profiling are derived from the scientific analysis of data sourced from crime scenes, police and psychological reports and victimology. The move is from the specific to the general (Godwin, 2012). Turvey's (2008) deductive approach, on the other hand, is different in that it does not involve averaged, statistical profiles. Instead, it examines each crime as its own set of behaviours and relationships and aims to investigate and understand the facts. This approach studies specific cases in an effort to understand the meaning of the individual, viewed as unique and with characteristics that differentiate him from all other people. The use of the narrative or auto/biography is relevant here. Turvey (2008:105) emphasises that "nomothetic methods should be used to examine individual cases only with the greatest of caution and with utter humility for their limitations. This means theory development only". Muller (2000) also questions whether nomothetic research findings that are based on unrepresentative samples can be applied to specific cases. For Kocsis and Palermo (2005) however, the debate between inductive or deductive reasoning is deemed to be invalid as they question whether the mind actually operates so categorically that one form of reasoning is selected exclusively over the other. Labuschagne (2003) believes in a mix of the two methods. Within South Africa however, and for the purpose of taking environmental and contextual differences into account, amongst other reasons, Labuschagne advocates for Turvey's deductive profiling method. This form of profiling interprets all the collated information to deduce offender crime-scene behaviour patterns and from these, to further deduce the characteristics and demographics of offenders. Furthermore, he says that deductive profiling is also better for the purposes of linkage analysis (discussed at the end of this chapter) and considers the important issue of the behavioural changes of the offender as he progresses with his criminal career. Some behavioural shifts, such as attitudes or beliefs, occur over a period of time while mood swings, emotional arousal substance-induced effects are more acute and can change rapidly. For example, Moses Sithole progressed from tying his victims' hands behind their backs to tying them to their necks, giving him additional control, and the local Lenyenye offender progressed from attacking young women in more accessible areas to older ladies in the veldt (Pistorius, 2000). For Labuschagne, the unfortunate reality is that empirically based information for local cases is currently limited. The deductive method would thus need to make use of the research that is available. 3.1.3.1 Diagnostic Evaluation (DE) / clinical approach. As the initial approach to profiling, diagnostic evaluation examines offenders and their crimes psychologically from a mental illness perspective, attempting to establish motive (Ebisike, 2008). Vanderwall (2007) describes the gains from the fusion of law enforcement and psychology and deems police psychology to be a diverse and vital discipline. Traditionally, psychologists have had (and continue to have) multiple concerns regarding the validity of profiling from an empirical standpoint. Although also done by other professionals such as psychologists, most offender profiling is conducted by those who are trained in law enforcement. However, the desire to be involved in profiling work appears to be increasing amongst psychologists (Torres et al., 2006). According to Wilson et al. (1997), however, diagnostic evaluators seldom have law enforcement experience and they generally base their evaluations on their clinical practice and what they have learned about personality and other psychological conditions. For these authors, validity and utility are thus inadequately assessed or compared. Alison et al. (2010) state that its reliance on a clinician's practical experience, knowledge and sometimes intuition, to draw inferences from crime scene information, makes it difficult to assess how these get translated into formalised and falsifiable knowledge (Muller, 2000). In addition, they question whether this information can subsequently generate useful offender profiles. Strano (2004) reports that there seems to be a blur between intuition and empiricism adopted by the traditional profiler while Devery (2010) asserts that profiling has never been scientific, referring to it instead as an art. An analysis of 130 articles on offender profiling by Snook, Eastwood, Gendreau, Goggin and Cullen (2007), highlights their personal experience and 'common sense' rationales, as opposed to being scientifically based. Furthermore, evidence at the crime scene is not necessarily related to the particular characteristics of the offender and/or some interpretations may be based on outdated interpretations of personality theory (Alison, Bennell, Mokros & Ormerod, 2002; Alison & Canter, 1999; Snook et al., 2007; Bartol & Bartol, 2008). Similarly, when an offender profiler is not familiar with a particular kind of crime, his or her recommendations can misdirect the investigation. An example of this would be muti murders where the offender may remove sexual parts of a victim. To the untrained eye this might be profiled as a sexually motivated murder (Labuschagne, 2012b). An approach to offender profiling where there is an assumed consistency between groups of criminal behaviours and offender background characteristics, is not supported by research. Contemporary trait psychology suggests that Person to Situation interactions affect offense behaviour, as they do legitimate behaviour, and that not knowing the situational context within which a crime occurs makes matching predictable behaviours to some disposition very difficult (Alison et al., 2002). Strano (2004) adds that the psychodynamic approach to most offender profiles offers an interesting but incomplete picture of the event since the social and cultural factors, lifestyle and criminal patterns of the offender are not included, which are essential components of a thorough investigation. Labuschagne (2003:72) suggests that the individual who compiles an offender

profile should ideally "be part and parcel of a greater service to the investigating officer" and that these services should include "crime-scene assessments, assistance in investigative decision-making, assistance with interviewing witnesses and suspects, assistance in dealing with the media and managing the vast amounts of information often collected". Michael McGrath (former president of the Academy of Behavioral Profiling) asserts that forensic mental health practitioners have a unique advantage in creating offender profiles in that they are familiar with psychopathology and can thus deduce personal characteristics from crime scenes. However, he adds that they should be independently motivated to gain extensive additional training if they are to be effective within the field (as cited in Seawell, 2010). As mentioned above however, the downside of mental health professions is their lack of investigative knowledge and experience. 3.1.3.2 Crime Scene Analysis (CSA) / FBI approach. The second and most traditional approach to offender profiling was developed by agents in the Federal Bureau of Investigation (FBI) and was described as "brainstorming, intuition, and educated guesswork …accumulated wisdom, extensive experience in the field, and familiarity with a large number of cases' (Douglas, Ressler, Burgess, & Hartman, 1986:405). According to Rossmo (2000:68), this approach tries to provide the answers to the following three questions: "What happened at the crime scene? Why did these events happen? What type of person would have done that?" To answer these questions, the FBI work through the stages of data collection, crime classification, crime reconstruction followed by the generation of a criminal profile based on the previous steps (Rossmo, 2000). The FBI's Behavioral Science Unit (BSU) interviewed imprisoned serial murderers to determine possible common characteristics and motives (Ressler et al, 1988; Ressler, Burgess, Hartman, Douglas & McCormack, 1986). This resulted in the refined development of a typology that eventually classified crime scenes as organised, disorganised, or mixed. The organised offender is described as being methodical and cunning, self-centred and irresponsible, socially competent but immoral with little regard for social welfare, more likely to have skilled employment, more apt to have brought a murder weapon and use restraints on his victim, as well as more inclined to take the weapon back with him after the murder. The disorganised offender, on the other hand, is viewed as emotionally intense and behaves on impulse. The victim is viewed as being taken by chance and was simply at the wrong place at the wrong time. This offender is described as being less intelligent or socially competent, more unplanned and emotionally chaotic or bizarre in his crime commission, may leave evidence such as the weapon, fingerprints, blood or semen at the crime scene, will have minimal use of restraints, and may possibly even suffer from psychosis (Wilson et al., 1997; Canter, Alison, Alison & Wentink, 2004). The mixed crime scene has both organised and disorganised aspects. As an example, a carefully planned crime may later deteriorate rapidly into a disorganised crime when the original plans do not pan out and strong unexpected emotions are elicited (Douglas et al., 1992). Turvey (1999) questions whether the categories are a typology, stating that they are generalisations and not conclusions. Turvey (2008) discounts the organised/disorganised dichotomy as useful, stating that crime scenes fall somewhere along this continuum. In addition, only a competent forensic analysis can explain how a crime scene, in any given case, presents the way it does. Thirdly, he says that it is generally very difficult to differentiate between the origins of what creates the "disorganised" crime scene since mental illness or rage or drug-induced murder can appear similarly. Turvey (2008) adds that psychopathy is a personality disorder and cannot merely be defined by its absence of psychotic behaviour. The dichotomy also fails to account for the development of the offender over time. As he hones his murdering skills, his crime scenes may present differently from former scenes. Like Turvey, Goodwin (1998) and Canter et al. (2004) consider typologies or dichotomous categories to have very limited practicality in investigations as the only objective source of information is taken from the crime scene (Canter et al., 2004). These typologies have been empirically refuted, predominantly because of a lack of scientific methodology or sound theoretical foundation (Canter et al., 2004; Muller, 2000; Wilson et al., 1997). From their analysis, Canter et al. (2004) revealed no distinct categories of offence characteristics that can be viewed as clear-cut in relation to the two types. For them, the proposal of a mixed category in itself raises empirical questions about the validity of a basic dichotomy. A discussion of the scientific support upon which the organised and disorganised distinction is based, is lacking (Devery, 2010) which leads Kocsis, Cooksey and Irwin (2002) to suggest that the assumption that crime scenes exist along a continuum is likely to be more realistic, with the organised label at one pole and the disorganised label at the other. In addition, Labuschagne and Theron's (2008) research into the common traits of murderers who inserted and left objects inside their victim's vagina, produced findings that were contrary to the organised/disorganised typology. According to the theory, this behaviour would be deemed to indicate a disorganised offender, who would typically have a mental disorder. However, Labuschagne and Theron's (2008) study did not find this to be true of their offenders and they were all declared competent to stand trial and possessing criminal capacity at the time of the crime. In other cases the insertion was part of a hate-crime against the victim who was known to be a lesbian. For Bartol and Bartol (2008), the oversimplification of complex situational behaviours into crime scene typologies are constructed on the previously mentioned fundamental assumption that human behaviour is largely consistent across time and place consistency. 3.1.3.3 Investigative Psychology (IP) / scientific approach. Contributing to this increased focus on empiricism, a new approach to offender profiling has emerged as the third main paradigm of Criminal Investigative Analysis: investigative psychology (IP). Pioneered in 1985 with the work of David Canter and coined as a term by himself and Detective Constable Rupert Heritage in the early 1990's, investigative psychology grew out of the recognition that psychology could contribute powerfully to crime investigation, not only offender profiling (Canter, 2012). It essentially poses the question: what does the offender reveal about himself by how and where he commits a crime? (Canter & Youngs, 2010). Specifically, it is a useful approach in serial murder, where there are multiple crime scenes from which to derive and compare information (Wilson et al., 1997), since its environmental focus incorporates geographical profiling. Geographical profiling is the main focus in this thesis and will be discussed in the following section. Investigative psychology is unlike the other two profiling approaches that lack scientific rigour (Canter, 2012) and that rely on the clinical opinions or practical experience of the 'profiler'. Rather, Canter (2004a) has aimed to make the process of offender profiling a product of systematic social science and where predictions are fundamentally based on empirical evidence (Mullen, 1997). In this regard, the general approach to substantiating any given claim, as outlined by Toulmin in 1958, is favoured as a method of ensuring that a claim about a given offense is firmly grounded on clear premises that can stand up to criticism (Alison, Smith, Eastman & Rainbow, 2003; Alison, West & Goodwill, 2004; Canter & Youngs, 2010). Toulmin (as cited in Alison et al., 2003) listed the main elements required in this process: clarity about the conditions upon which particular claims have been made (the grounds), the justification for relying on those claims (the backing), the conditions under which the claims might not be true (rebuttal) and the certainty of those claims (the modality). Alison and Canter (1999:27) describe this process as follows: Early on in the observation phase of a given domain, hypotheses are necessarily quite general. With increasing knowledge of the area such hypotheses can be developed and refined. Hypotheses are devices used by scientists to select between competing explanations for behavior - those that survive the rigors of scientific debate become 'laws' - those that are rejected on the basis of discoveries are abandoned. Investigative psychology, first established as an academic department at Liverpool University, focuses on the scientific study and prevention of crime (Alison et al., 2004). Included in this focus are the application of social psychological principles, environmental psychology, forensic psychiatry and criminology to criminal behaviour and its investigation (Canter, 2000a; Egger, 1999). Investigative Psychology has also been recognised within the Israeli and South African police services, which have their own IP units (Canter & Youngs, 2010). IP's main topic as an emerging science is "how to appropriately describe and classify the central matters under consideration, i.e. criminals and their activities" (Canter, 2004b:1). Canter and Youngs (2010:4) define the discipline as follows: Investigative psychology is the study of offenders and the processes of apprehending them and bringing them to justice. It deals with what all those involved in crime and its investigation do, feel and think. The dominant objective is the understanding of crime in ways that are relevant to the conduct of criminal or civil investigations and subsequent legal proceedings. As such IP is concerned with psychological input to the full range of issues that relate to the management, investigation and prosecution of crime. But it is also an approach to problem-solving psychology that has relevance far beyond crime and criminality. Developed out of studies of ordinary, non-criminal activity (Canter & Youngs, 2010:xiii), investigative psychology recognises that there are multiple ways in which psychology can contribute to offender investigations. Canter (1989) claims that psychology has

practical application to crime investigation since criminals can be viewed as engaging in interpersonal transactions with their victims within the social context. Canter (2000b) believes that people influence each other's actions and that human behaviour changes over time. He argues that offenders, like other people, psychologically interact with the world in ways that are congruent with their personalities. Thus, their daily and normative behaviours will be reflected in their criminal actions. This consistency principle states that how offenders deal with their victims is how they deal with other people of significance to them. He refers to the behavioural traces that they leave behind and talks about tracing the criminal shadow before the crime. For Canter (2000b:78), the criminal is "more vulnerable in his history than in his future". Investigative Psychology examines offenders' styles and patterns of criminal behaviour and how these relate to their psychological and social characteristics. It aims to apply psychological principles, theories and empirical findings to the broad spectrum of issues pertaining to crime management, investigation and prosecution (Canter, 2014a). For G. Labuschagne (personal communication, 5 June, 2014), it is more a branch of Forensic Psychology that specifically focuses on investigation issues. (i) Central questions. Canter and Youngs (2010) propose that there are five important processes that are pertinent to the investigation process. These are: description (investigators need to be aware of what is significant in a crime, observe it and then record it accurately); classification (they need to recognise what sort of crime they are dealing with as well as how it relates to other crimes); effective inference (they need to be able to derive scientifically-based inferences from their observations); knowledge of criminals and their actions (they need understand why and how offenders act to guide their observations); and effective decisions (they need to know how to make use of their derived inferences to guide their actions). Put differently, these can be formulated into ten classes of operational question (Canter, 2004b; Canter, 2014a): 1. Salience. What features of a crime should receive attention? (Canter & Youngs, 2003) 2. Suspect Elicitation. What sources of information are required to help identify the suspect? 3. Suspect Prioritisation. Of the potential list, who is the most likely offender? 4. Offender Location. Where is his most likely base? 5. Linking Crimes. Which crimes are likely to have been committed by the same offender? 6. Prediction. Where, when and how might the next crime be perpetrated? 7. Investigative Decision Making. How can the investigation be improved? 8. Information Retrieval. How can the process of investigative data collection be modified to greater effect? 9. Evaluation of Information. How can information be assessed as valid or deceptive? 10. Preparing a Case. What sense can be made of the crime that will assist in preparing the case legally? In summary then, the central questions of this field are about the features of crime that should receive prioritised focus and attention, the linkage of a series of crimes to a common perpetrator, and the process of establishing the more likely culprit out of the group of potential suspects (Alison & Canter, 1999). At the heart of this, are "profiling equations". These serve as the empirical foundation for deducing associations between the offence actions and the offender's characteristics. They are also referred to as the "A => C equations" (Canter, 1995) where: A are the actions related to the offence; C are the characteristics of typical perpetrators for such crimes; => is the evidence for deducing one from the other The problem-solving process consists of making deductions about cluster sets of retrieved information, such as offender characteristics, from other sets of data, such as the specifics of what occurs in a crime (Wilson et al., 1997). Effective inferences rely on valid distinctions being made between offenders and between crimes (Canter, 2004b). Inferences made on the basis of the retrieved, evaluated information and the police decisions and actions, may in turn generate further deductions. This inference cycle keeps repeating until the investigation reaches resolution (Canter & Youngs, 2010). (ii) Main concepts and assumptions. The two most prominent concepts that have emerged from investigative psychology are the five-factor model, to predict the offender (Canter, 1994) and the circle theory to predict his residence (Canter & Larkin, 1993). The latter will be discussed later under Geographical Profiling. The five-factor model (Canter, 1994) is the basis of IP's offender profiling method and it proposes crime to be an interpersonal transaction in that the offender-victim relationship is present in varying degrees in all crime (Canter, 1989). Canter (2000a) suggests the possibility of examining the relationship between the characteristics of murderers and behaviours at crime scenes by using psychological theory as a basis. There is support for this interpersonal perspective from Santtila, Häkkänen, Canter and Elfgren (2003), in their research on classifying Finnish murderers and predicting their characteristics from their crime scene actions, and from Blackburn (1998) who observes that many of the traits such as assertiveness, defiance and hostility that repeatedly distinguish offenders from their non-offending counterparts, refer to characteristic relational styles. The five-factor model (Canter, 1994) evaluates five aspects to the interaction between offender and victim: interpersonal coherence, significance of time and place, criminal characteristics, criminal behaviour, and forensic awareness. Firstly, interpersonal coherence examines whether variation in the offender's behaviour is similar during criminal acts and when he is relating to people in noncriminal ways. (Egger, 1999). For Muller (2000), it suggests that actions performed by offenders make sense within their own psychology and that offenders will target victims that they identify with the important characteristics of the people most important to them. There is some support for the notion that serial offenders tend to target victims who share their ethnicity in the United States (Canter, 1989). Therefore, deducing some information about offenders from the victims and their interactions with those victims should be possible. Secondly, significance of time and place lends some information as to the offender's conceptual view of spatial and temporal relationships. (Egger, 1999). This will be discussed further under Geographical Profiling. The third aspect, looking at criminal characteristics, allows for researchers to examine whether the crime and how it was committed can lead to a classification of possible offender subtypes (Egger, 1999). Canter is supported by Rossmo (1997) in his critique of the validity of the FBI's organised- disorganised dichotomy, as well as Holmes and Holmes' (1998) five- fold model of serial murderers, which is based on it. As previously mentioned, Canter and Youngs (2010) challenge the notion of a criminal type and state that these typologies do not provide sufficient differentiation between them since offenders can possess characteristics that could fall into more than one category. Canter believes that there is insufficient distinction between the two categories as well as little theoretical support for it to be useful (Canter, 1994; Canter & Wentink, 2004). He rejects the oversimplification of slotting crimes or criminals into limited 'types' (Canter, 2000b). Youngs (2004) claims that the Offending Actions–Offender Characteristics relationship is a complex one because similar behaviours can consistently indicate different characteristics, and similar characteristics can be inferred from different behaviours. There are two theoretical assumptions within offender profiling which are deemed to signify validity and usefulness. The consistency assumption rests upon the belief that offenders repeat offenses in the same way which relies upon the behavioural variations of an offender across their series being exceeded by the behavioural variations of all other offenders. The homology assumption is that an offender's particular background characteristics and the way in which he commits his crimes are associated, which then suggests that offenders who share styles of crime commission also share background characteristics (Alison et al., 2002). Research demonstrates that offenders can commit crimes in a relatively consistent manner in multiple ways, from their choice of crime type to their behaviour across crimes in burglary, robbery and sexual assault. However, the evidence for the assumption of homology is less encouraging. Beauregard and Field (2008) state that in order to effectively identify possible suspects, the police require the prediction of offender characteristics that is practical and useful to them, such as the offender's age. Mokros and Alison (2002) found no evidence for homology between crime scene behaviours and background characteristics in their sample of rapists and argued that it is therefore too simplistic. However, a more recent study by Goodwill and Alison (2007) indicated that offender age was notably predicted by victim age, but only where the offender acted unprovoked or where it seemed evident that he had planned his attack. This suggests that although some homology is possible between the actions and characteristics of offenders, the greater challenge is to establish which particular behaviours should be used to profile which particular characteristics (Beauregard & Field, 2008). For Mokros and Alison (2002), the assumption of homology will remain non-useful in offender profiling until the contextual factors of a crime are taken into consideration. Youngs (2004) goes further to explain that the challenge is not simply to build up a matching catalogue of behaviour and offender characteristics, but rather to understand the processes by which they are linked. For Canter and Youngs (2003), the personality framework is deemed to be central to offender profiling. Hence, Youngs (2004) suggests that the goal of extended research is to develop a clearer differential relationship between personality and style of offending, adding that the nature and degree of interpersonal control used is particularly important. To achieve this, she

proposes that comparisons in personality be drawn across empirically described offence styles, that models of personality relevant to criminal behaviour are used and that the research examines the way in which personality shapes behaviour. She does clarify that these relationships are not assumed to be accounted for entirely in terms of personality, since there are other influencing factors. She names Canter's (1994) inner narrative, other cognitive processes, learning and experiences among them. Like Mokros and Alison (2002), she also recognises the important influence of social context. This will be explored under Geographical Profiling. Canter and Youngs (2010) propose a Radex of Criminality model in which the 'types' are replaced by themes that can be viewed as all-encompassing but non-independent, blending dimensions of degree from which other themes can be gleaned (like colours being classified along dimensions of blueness, redness and yellowness). It thus encapsulates all possibilities or variations of crime and criminal and "any individual criminal may be thought of as committing a subset of all the possible deviant actions" (2010:111). The Radex has two facets. One facet deals with specificity, moving from the general or aggregate (shared by all offences) to the specific or peripheral. The other facet is thematic and it differentiates between the different qualities of the crimes, radiating around the core (Canter, 2000a). This model is a modification of the Smallest Space Analysis (SSA) of Canter and Heritage (1990). SSA, in short, plots the variables in space where the distance between the variables displays a high or low correlation, therefore the closer the distance, the higher the correlation between the variables in the SSA space. Many studies of the offender - victim interaction have employed this method as a reliable exhibit of behavioural themes within the data (Horning, Salfati & Labuschagne, 2015). Canter and Heritage's (1990) SSA had five factors describing the sexual assault behaviour of a sexual offender but later, Canter (1994) argued that this could be reduced to an interpersonal model in which a serial murderer will usually assign one of three roles to his victim during a crime. This model will be discussed further under victimology, later in the chapter. Canter, Reddy, Alison and Bennell (2001) modified the five factors into four possible themes with differing levels of violation: hostility, control, stealing or involvement. According to Labuschagne (2004), in the case of murder, the variation of sexual assault behaviours may occur after the victim has demised. Hostility involves a con approach with insults and verbal aggression, tearing of the victim's clothes, anal penetration and being violent for the sake of being violent. Here, the victim is a vehicle for the aggressor's desires (Canter, 1994). Control is where the victim is overpowered and used as an inanimate object. The use of weapons, blind-folding, and rear vaginal penetration are correlates. Stealing involves an additional goal of theft from the victim, apart from the sexual assault. There is commonly a blitz attack involved, whereby the victims may be gagged and their goods are demanded. Finally, involvement is what was previously referred to as intimacy by Canter and Heritage (1990), where the victim is treated as a person with whom to engage rather than merely a sexual object (Canter, 1994). Kissing, cunnilingus, compliments and reassurances may be involved. Under this third aspect of interaction between offender and victim, is also the notion of spatial consistency, which falls under Geographical Profiling. The fourth approach, criminal career, relies on the notion that throughout their offending careers, criminals do not alter how they commit crimes albeit that their crimes may escalate and that even these escalations may be due to their experiences during the commission of prior offences. Hence, it may be an option to negatively extrapolate back to their earlier crimes to derive additional evidence (Muller, 2000). For Canter and Youngs (2010), there is some suggestion that serious offences have been perpetrated by offenders with a less serious criminal track record and are therefore older offenders. However, there is not much evidence to support this assumption in sexual offenses. They advocate for additional research to be conducted if we are to understand the criminal career. Finally, forensic awareness is where the offender attempts to mask evidence at the crime scene. For example, he may force his rape victim to bath or comb her pubic hair in an attempt to remove any traces of his hair. This may suggest that he has previous dealings with the police and may therefore have a criminal record, which should aid in narrowing the range of offenders to those with prior offense records (Egger, 1999; Muller, 2000). 3.1.4 Critique of offender profiling. The presupposition of profiling is that crime scene clues are indicators of the personality traits, habits and cognitions of offenders, and that these identified key aspects of the personality can be generalised to other situations, which also includes their future criminal behaviour (Bartol & Bartol, 2008). However, Mischel and Peake (1982) argue, on the basis of their research findings, that human behaviour across different situations is unstable and inconsistent, particularly the dynamic factors of an individual, such as mood swings and drug-induced effects (Bartol, 1996). Furthermore, Jenkins (1994) states that there is a failure to consider the power of the situation to influence behaviour and that traditional profiling has lacked a victimology perspective. Jenkins (1994:463) maintains that "offenders and victims comprise a common and interdependent ecology" and that part of the situation is the victim and all the characteristics brought to the incident by that victim. In their research on burglary, Cromwell, Olson and Avary (1991: 47) concur with the importance of having a victim perspective and concluded that "most burglaries in the jurisdictions studied appeared to result from a propitious juxtaposition of target, offender, and situations". For Canter (2000a), there is research that is difficult to effectively interpret in the absence of sound theory: the consistency of offenders' behaviour over time, and between the criminal and legal spheres, as well as the assumption that crime scene behaviours can be linked to offender background characteristics (Canter, Bennell, Alison & Reddy, 2003; Kocsis et al., 2002, Kocsis, Irwin, Hayes & Nunn, 2000). Canter (2000a) predicts that research will develop slowly since it is not deemed as exciting as the solving of cases. The validity issues in previous studies regarding offender profiling, including the low participation rates and unrealistic testing conditions, has also justified a sense of dubiousness among law enforcers and forensic mental health professionals (Alison et al., 2010). Dowden, Bennell and Bloomfield, (2007) surveyed 132 studies in the offender profiling literature from 1976 to 2007, to examine how the field has grown through the decades. They found that very few individuals have dedicated the bulk of their researching efforts to offender profiling. Furthermore, few have published any research. Kocsis and Palermo (2005:333) refer to the "mountains of conclusions from molehills of research". Moreover, those who do conduct research in this area, such as the FBI agents Roy Hazelwood, John Douglas and Robert Ressler, are foremost investigative consultants, not researchers, and they have had their research criticised (Canter, 2000a; Muller, 2000). Alison and Canter (1999:39) state that "one must check and treat with caution all opinions and not simply assume that because it is said with great conviction by someone with experience that it must be true". The process of profiling has also been criticised by Pinizzotto and Finkel (1990) since it has lacked some coherence in terms of specifying what information should feature in a crime assessment report, how each step is deduced from the former, how investigators interpret and gain pragmatic assistance from a profile nor how valid profiles are composed. Up until recently, available information regarding the development of criminal profiles lacked much empiricism. Studies that have reviewed the reliability of profiles drawn up by professional profilers compared to nonprofilers (Kocsis, 2003b; Pinizzotto & Finkel, 1990) seem to agree that trained profilers generate lengthier detailed reports offering a greater number of predictions about the offender while Kocsis's (2003a) review of his own research concludes that profilers also offered the most accurate predictions about the real offenders. However, Torres et al. (2006) caution that these results are somewhat contradictory, are based on few studies and also derived from the results of less than five profilers who were willing to participate. In addition, Bennell, Jones, Taylor and Snook (2006) believe that it is a mistake to assume that lengthier profiles (quantity) are more accurate (quality) until proven and replicated empirically. They question the soundness of Kocsis' (2003a) accuracy measure, biases in his analysis procedures, and the absence of skills assessment in the sample as well as the validity of his data-collection process. In their examination of the profiling literature, Snook et al. (2007) found that self-labelled profilers did not distinguish themselves from laymen as better performers in their capacity to generate reliable profiles. This also highlights the problem of who really can be considered a profiler? Geberth (1996) refers to knowledge of techniques being viewed as traditions that are passed down the ranks, with many of these authors never having spoken to a murderer nor ever been present at a crime scene. He remarks on the unprofessional and unscientific approach of some police departments who view profiling as some special talent, and therefore deem psychics to be credible profilers. Kocsis (2003b) suggests that the profilers surpassed all the groups with information of nonphysical items possibly because trained profilers are familiar with the research literature on offender classifications, aetiology as well as the history of the offender. However, Bennell et al. (2006) caution that simply showing those professional profilers as being more accurate than the others (Kocsis, Middledorp & Try, 2005) does not rule out the possibility that they can still be very

inaccurate in their profile predictions. Copson (1995), Jackson, Van Koppen and Herbrink (1993) and Kocsis (2003b) found that the greatest benefit offered by profiles to the police was not so much in identifying the guilty person as much as in understanding this unknown person. For Kocsis, Heller and Try (2003), optimal profiling proficiency is achieved by the combined presence of written and visual case material, including written witness and police statements, forensic reports, crime scene photographs, and schematic diagrams or physical evidence such as fingerprints. According to research by Copson (1995), many investigators do find profiles useful but these need to be more critically evaluated and not simply taken at face value. For Canter (2000a) however, a thorough and clear assessment of what psychological basis underpins the process of generating profiles must precede asking how accurate or useful they are. Unfortunately, there has previously been little scientific research of the issues surrounding traditional profiling (Kocsis, 2003a; Canter, 1994). In addition, many published accounts of the profiling technique are written as novels and are thus difficult to evaluate empirically (Godwin, 2001). Although the debates continue, there does seem to be a consensus at least, that more empirical research into evaluating profilers is required. As Canter and Youngs (2010:73) state, "The possibility remains, therefore, that any reasonably well informed and intelligent advisor brought in by investigators can make a useful contribution to an investigation, but that a much stronger research base is needed for this advice to go beyond educated opinion". Therefore, it would seem that it might be questionable whether the profiles generated by professional profilers are actually insightful beyond what the average layman could possibly offer about the offender. For Wafler and Shaw (2011), profile construction should be considered a pseudoscientific technique until it is empirically shown that profilers can correctly predict offender characteristics above the level of random luck and better than the average layman. While profiling intrigues the public, it should be used with due caution until its predictive validity has been reliably demonstrated (Bartol, 1996). Holmes and Holmes (2002) remind us that profiling is but one tool that, on its own, has never solved a case. For Snook, Canter and Bennell (2008a:1270), "the burden is on profilers, who make extraordinary claims about their abilities, to prove their worth by actually participating in controlled experimental studies". Although many of these issues have been recognised, profiling has continued to thrive. The question is "Why"? One explanation by Kocsis (2003b) is that the media have glamourised the profiling technique's value and reliability, as in Harris' novels Silence of the Lambs (1986) and Hannibal (1999). Kocsis (1999: 98) has said that this media focus has resulted in a situation in which "a gross disparity has developed between profiling's reputation and its actual capabilities". Until these movies, the public had neither any idea about profilers nor what methods they actually use (Turvey, 2008). Canter (2000a) concurs that crime fiction is partly the reason why there is confusion over the nature of profiling and its hurried unempirical promotion. A subject such as offender profiling easily creates a sense of hype in which the line between fact and fiction is blurred (Muller, 2000), notably due to media portrayals that alter and distort the realities of crime investigation. The resultant public misperceptions, notably in American jurors in court, has become so concerning that the term "CSI effect" was created (Chesen, 2008; Shelton, 2008). A second possible explanation for why profiling has continued to thrive is that the profiling technique is predominantly used by law enforcement agencies that favour it and show bias towards it as part of their organisational culture (Kocsis, 2003b). Kocsis and Hayes (2004:149) conducted an experimental study that suggests that, At least some component of the belief that profiling is useful to criminal investigations stems from a tendency of police officers to perceive greater accuracy in a profile merely because it is identified as being written by a professional profiler, independent of the objective accuracy of the profile. They offered a suggestion that the bias may exist because police officers possibly view professional profilers as part of their own occupational subculture with which they strongly identify and have a strong relationship built on loyalty. This bias seems to be confirmed when Kocsis and Heller (2004) went on to replicate their previous research but used university students who would be external to this cultural influence and who would thus not be expected to demonstrate such a bias. None of the profile evaluation measures showed any significant differences between the author labels and the profile perceptions across any of the conditions. Additional research also suggests that the greater the belief in profiling, the greater the likelihood of regarding a profile as accurate, notably with information pertaining to an unknown offender's history and criminal behaviour. Therefore, within the law enforcement environment, it is possible that profiling will not be scrutinised and tested as much as other forensic techniques (Kocsis & Middledorp, 2004). Without a solid empirical foundation, an offender profile might just as well be built on psychic visions (Muller, 2000). For Turvey (2008), personal faith and beliefs should not hinder objective methods of investigation that require testing and proving. Such conclusions have no reliability or place in offender profiling since they are vulnerable to bias and cannot be validated. He goes as far as saying that self-claimed psychics are either mentally deficient or fraudulent and that those who have information that only the offender could have, are really something else: suspects or witnesses. Linked to this is the third explanation offered regarding why profiling has continued to thrive and which Kocsis and Hayes (2004) termed operational utilitarianism. This suggests that because profiles are viewed as being useful, police investigators continue to use them. Consequently, it generates a circular argument since because the police continue to use and rely on profiles; it almost acts to serve as proof of profile accuracy. Kocsis and Middledorp (2004) replicated these findings in additional research and concluded that faith in the profiling technique may be due to the many years depicting it so favourably. However, as indicated by G. Labuschagne (personal communication, 14 February, 2015), why would offender profiles continue to be used if they didn't help? Is it not insulting to police members' intelligence to assume that they would continue to use something that never works? Profiling research "needs to focus on the development of practical techniques that make use of profiling that will serve to assist in the investigation of crimes and not just the promulgation of literature based on whatever data may be available" (Kocsis & Palermo, 2005:339). For Egger (1999), however, the critics of profiling often do not clarify what standards profiling is being measured against or even what is meant by profiling. He emphasises that the primary aim of profiling is to narrow the number of possible suspects rather than to identify and single out the guilty offender (Douglas & Olshaker, 1995). Egger (1999) explains that if we are viewing it thus as a tool for investigation, as opposed to solving crimes, its potential is very favourable. He states "Profiles do not need to solve crimes however, if they are successful, they can make the investigator's job easier" (Egger, 1999:258). Turvey (2008:xx) sums up the issue and clarifies that The criminal profiling community cannot continue to play to the images portrayed in the popular media and expect to achieve professional credibility or maintain professional integrity. The criminal profiling community must begin to communicate and agree upon standards, practices, terminology, and methods. It must move away from reliance on subjective expertise and move toward a more professional, more scientific approach if it wishes to carry through into the next century. 3.1.5 The future of CIA. For Copson, Badcock, Boon and Britton (1997), proponents of diagnostic evaluation (DE), statistical approaches to profiling are only reliable if the data that they are based on is reliable. They argue that until there is the development of such a reliable database, offender profiles should be based on the clinical judgement of mental health professionals. Muller (2000) sees great potential value in the application of psychological knowledge to criminal investigation and for it to become a scientific discipline in the future. Particularly in support of the investigative psychology approach, Muller asserts that most of its theories are falsifiable and that its methodology has demonstrated its applicability to the offender's residential location and possible occupation (Godwin & Canter, 1997). He supports Canter's (1989:16) assertion that "all of the main claims that are made by IP lead themselves to specific hypotheses that can be tested against empirical data before being used within an investigation". Furthermore, Muller (2000) acknowledges that IP is making a real attempt to practically apply the field of psychology to legitimate social problems. In his book review of Canter and Youngs' work (2010), Freckelton (2010:331) says: Investigative Psychology is a genuinely important work, synthesising as it does the work of Canter's team at Liverpool University over the better part of two decades. It will be controversial. It articulates theories in a way which will facilitate constructive debate, refinement and further research. It is exceptionally well presented. It is logical, well researched and referenced, readable and entertaining without for the most part descending into the titillating of the sensationalist. It is an engaging and very honest contribution to the evolving discipline of forensic psychology. It should be essential reading for students and practitioners of forensic psychology, criminology, law enforcement and criminal law practice. Muller (2000) cites some of the contributing theories to the field of IP that have positive implications for profiling offenders (Godwin & Canter, 1997; Canter & Kirby, 1995). He does comment though, that little research has been done on

offender narratives and how these are reflected in their crimes. Nonetheless, the IP approach has instigated the increase of academically peer-reviewed research into multiple areas of offender profiling and crime investigation. According to G. Labuschagne (personal communication, 5 June, 2014), its research is relevant to crime investigation. In addition, it has also incorporated a focus on what the police do and has launched an exploration into the significance of "police decision-making, problem solving, evaluating legal testimony and investigative interviewing" (Canter, 2012, para. 5). The profession, the police and the public need to be reassured that compared to the procedures that have been employed in the past, there is a more disciplined approach to the effective application of psychological advice to major crime inquiries (Alison et al., 2004:85). For Kocsis and Palermo (2005:339), "future research needs to fully articulate its conclusions so that other researchers may replicate, build, and ultimately advance the knowledge gained in the area. In this context, therefore, researchers will need to communicate with one another, because this is the basis of the scientific method". Muller (2000) deems IP more scientific than the FBI approach since it has produced testable hypotheses backed up by several empirical studies. Although there is no current reliable published scientifically peer- reviewed study suggesting that the approach is more effective than others (Muller, 2000; Kocsis, 2006), he also suggests that both camps have much to offer one another. Woodworth and Porter (1999:241) concur with this and state that: Our review concludes that a holistic approach that integrates aspects of the rational/deductive method developed by the Federal Bureau of Investigation and the empirical/inductive method developed primarily by investigative psychologists may represent the most promising approach to criminal profiling. There is a general move to a more eclectic approach that combines the advantages of the different methods of profiling and emphasises reliance on empirical research. CIA aims to make an empirical, valid and practical contribution to police investigation (Alison et al, 2010). Research produces averages and classifications. Naturally, any offender could be the exception to some classified or generalised category but as Canter (2007:43) observes, "it is in the nature of averages that there is a greater chance of any examples from the population being more similar to the average than being very different from it". Good science is to recognise established principles upon which to base certain thinking but it is also to be aware of weaknesses in these and to be less certain, unlike the 'over confident psychics' (Canter, 2007). For Canter, the hypothesis only stands until proven otherwise. In recent years, the FBI and some of its retired profilers have embraced the empirical approach to offender profiling and have published their empirical research in various peer-reviewed journals (Hazelwood & Warren, 1999, 2003), thus helping establish a more integrative relationship between law enforcement, psychologists and academics. In addition, there has been a shift towards referring to themselves as behavioural investigative advisors instead of profilers (Canter & Youngs, 2010). The older and limited definition of offender profiling now makes way for a broader, multidisciplinary approach to Criminal Investigative Analysis, thus enjoying more empirical support. In summary, and given that Criminal Investigative Analysis is used worldwide as a forensic technique by investigators (Ainsworth, 2002), there is general consensus that increased understanding of the components of this field is required. The good news is that research has continued and there is still a valued belief in the relevance of offender profiling. As Kocsis and Hayes (2004:158) put it, "once the influence of these beliefs is removed and profiles assessed on their objective merits independent of ones faith in the technique, profiling will progress immeasurably toward being a reliable science". Muller (2000) concurs, stating that the current approaches to profiling have the potential to be scientific (if further researched) and more objectivity and professionalism are encouraged (Alison et al., 2003). The technique does still offer invaluable potential for the future and despite the low research publication rate, Dowden et al. (2007) are optimistic since renowned academic journals are now accepting publications on the subject. Thus, on the upside, Criminal Investigative Analysis has a promising and extremely useful future if its profiling methods consider person-situation interactions as well as the influence of the victim (Bartol & Bartol, 2008). It appears to have grown in use within police investigations (Homant & Kennedy, 1998; Snook et al. (2007) and must continue to be researched to improve its predictive validity. Seawell (2010) has recommended that Criminal Investigative Analysis requires an official regulatory body. The International Criminal Investigative Analysis Fellowship (ICIAF), with their understudy programme that leads to accreditation, serves the function of providing law enforcement agencies throughout the world with a constant level of quality and a benchmark for those wanting to provide criminal investigative analysis services. Locally, Hesselink-Louw and Joubert (2003) cite Superintendent André Neethling, then Gauteng Provincial Co-ordinator of the Family Violence, Child Protection and Sexual Offences Units of the South African Police Service in 2003, as saying that there is also a need for CIA to take into account the unique cultural customs, beliefs as well as socioeconomic and political circumstances found in South Africa. Based on Häkkänen's (2008) divergent findings on Finnish serial homicide when compared to results in other parts of the world, she also concludes that there is a need to consider the cultural-specific patterns in serial murderers when attempting to comprehend and investigate them. Increased local research is required to support assumptions made in the CIA process, as well as focus on the unique culturally specific crimes and criminal actions within South Africa (Labuschagne & Salfati, 2015; Salfati, Horning, Sorochinski & Labuschagne, 2015a; Salfati et al., 2015b; Sorochinski et al., 2015; Horning et al., 2015). 3.2 Linkage Analysis of Serial Murder It was mentioned in chapter one, that the investigation and prosecution of a serial murderer has an added requirement of creating sufficient links between his murders to establish that he, the accused, is the perpetrator of the multiple crimes in question. The challenge to police investigations can be seen as the reverse of the personality question. Psychologists usually have a person and want to know what will be consistent about that person from one situation to another. Police investigators have a variety of situations, criminal events and need to know what consistencies can be drawn out of those events to point to a common offender (Canter & Youngs, 2010:21). According to Rossmo (2000), the linking of crimes is based on information obtained from three methods. The first two are: physical evidence found at the crime scene (notably DNA as well as finger prints and ballistics); and the offender description obtained from eyewitnesses or the victim (assisted by paper or digital photographs of possible suspects, images from video cameras including CCTV and using sophisticated methods of comparing facial features from different images). However, with no eyewitnesses or forensic evidence, it is difficult to link a series of crimes to an offender. Frequently, there is either no DNA evidence at the crime scene or an insufficient amount to allow for identification analysis (Hazelwood & Warren, 2003). An alternative then is to employ the third option, that of linkage analysis, during the investigation (Labuschagne, 2006a). Linkage is a type of behavioural analysis that serves to determine the likelihood of a series of offences having been perpetrated by one offender (Hazelwood & Warren, 2003). For Strano (2004), linkage is central to the CIA process as investigators worldwide attempt to analyse and deduce the common characteristics in a series of crimes, such as serial murder. Linkage analysis helps determine which crimes to include in a series as well as how to focus the search for other similar previously committed crimes or those perpetrated in the surrounding areas (Labuschagne, 2003). It also assists in the prioritisation of suspects and information among the hundreds or thousands of tips. 3.2.1 Linkage assumptions, modus operandi, fantasy and signature. Linkage is based on two assumptions: that an offender will display some form of consistency in his behaviour across a series of offences and that there is enough variation between offenders, allowing them to be differentiated from one another (Bateman & Salfati, 2007; Woodhams & Grant, 2006). Two stable dynamic factors that are important to this process are modus operandi (MO), or the "how to" of a crime, and signature analysis, which is the distinctive behaviour that might suggest a common offender committed multiple crimes (Rossmo, 2000). Hazelwood and Warren (2003) discuss a third factor, the ritual or fantasy-based behaviours. Modus operandi are the specific behaviours and methods that an offender uses across their crimes to commit the crimes successfully (Rossmo, 2000). For Hazelwood and Warren (2003), the MO can range from being simple to really sophisticated, depending upon the intellectual capacity or experience of the offender. In serial sexual crimes, the MO can evolve quickly with significant changes being presented within weeks or months. Rossmo (2000) claims that as serial offenders learn which methods are most effective, they may become bolder and more venturesome in their selection of victims. Factors beyond the control of the offender may also affect how the crime is committed, including the unavailability or reactions of a victim as well as another person's possible interruption of the crime (Hazelwood & Warren, 2003). In addition, modus operandi can also be altered by an offender's declining mental condition, substance use or becoming aware of the media's accounts of their crimes (Turvey, 2002). However, not all aspects of the MO are subject to alteration. If certain behaviour has proven successful for an offender, it is probably going to be

repeated and evident in his future crimes. This familiarity with a certain behaviour allows the offender to anticipate certain outcomes and offers him an increased sense of control, which it turn allows for an increased focus on his sexualised or aggressive motive for the crime (Hazelwood & Warren, 2003). Crime scene behaviour can be assessed using a modus operandi matrix, which consists of stages (hunt, crime and escape) as column headings and actions (defensive and offensive), as row headings (Rossmo, 2000). While repeated actions can contribute to cross-crime linkage, the changeability of an MO can make it difficult to use in profiling. As a result, Bartol and Bartol (2008) warn that investigators can make serious errors if they place too much significance on the MO when linking crimes. Linkage also relies on signature, which Hazelwood and Warren (2003) describe as the unique combination of behaviours that suggest multiple crimes have been committed by the same perpetrator. Because it is relatively consistent in its characteristics, signature may be more stable and useful in the profiling process. Signature symbolises the unique cognitive processes and communication of the offender, extending beyond what is necessary to perpetrate the crime. Body mutilation and/or carvings as well as possible messages that are left behind are some examples (Rossmo, 2000). Related to the signature is the interesting but debatable theory that the most successful profiling of violent serial offenders is when they exhibit psychopathology at the crime scene, such as sadism, torture or post- mortem mutilations (Pinizzotto, 1984), because mentally disordered offenders are deemed to demonstrate greater consistency in behaviour across situations (Bartol & Bartol, 2008; Rossmo, 2000). Hazelwood and Warren (2003) also refer to the ritualistic aspects of serial crimes that originate from within an offender as opposed to the external demands of the situation placed on him in committing a crime. These behaviours are an expression of his motivation for the crime and are symbolic rather than functional. It is common for investigators to identify more features of the MO than of the ritual. Possible MO variables include the temporal features and location of the crime, the weapon used, victim sex and age, and the offender's mode of transport. The ritual, on the other hand, is narrower in focus and has to do with behaviours that express the offender's needs and motive. Therefore, unlike MO, rituals are very individualised, present features of the crime scene that are extraneous to the commission of an offence and can vary in their expression over a series of crimes (Hazelwood & Warren, 2003). From this collective set of information, variables can be determined that can be used to establish the links between crime scenes. This is done by using a case variable matrix where the column headings are the variables identified and the row headings each case that may form the series. Cases with the strongest links between each are linked to a specific series (Rossmo, 2000). Hazelwood and Warren (2003:587) describe five assessment procedures of linkage analysis: (1) gathering detailed, varied, and multisource documentation; (2) reviewing the documentation and identifying significant features of each crime individually across the series; (3) classifying the significant features of the crime as either MO and/or ritualistic constructs; (4) comparing the combination of MO and ritualistic features across the crimes to determine if a signature exists; (5) compiling a written analysis that details the conclusions derived from the available information. The authors add that any dissimilarities noted across the series of crimes should be discussed as well as supporting arguments offered for why the discrepancies do not undermine the final opinion. 3.2.2 Use in court. Linkage analysis is both helpful in the investigation of serial offences and in aiding conviction in the prosecution of offenders. It serves as evidence to persuade the court that a single perpetrator is responsible for committing a series of crimes when there may be a lack of forensic evidence in some of the crimes in the series (Labuschagne, 2006a). Essentially, similar fact evidence is used to try and persuade the court that the person charged is also guilty of other similar offences and is typically presented at the end of the prosecution's case as the final aspect of the overall evidence (Labuschagne, 2012a). The corollary is that it can also be used to express an opinion that an offender might not be the person responsible for a crime or crimes in a series. For example, if Mr X is on trial for crime A, but a linkage analysis has indicated that crime A is linked to B and C, and Mr X could not have committed B and C because he was in custody for example, it can also assist to exonerate him. By examining the circumstances of the crimes and the behavioural similarities, a linkage analysis report can be compiled and presented in the court case as linking evidence in spite of a lack of eyewitnesses or forensic evidence (such as DNA), as was the case in the trial of the Newcastle serial murderer (Labuschagne, 2006a). In South African courts, the presiding officer can decide without expert testimony whether particular crimes share sufficient uniqueness and circumstantial similarities to warrant being viewed as the work of one offender. This increases the amount of evidence against an offender (who under South African law will be prosecuted for each crime, not just his worst one). It also allows for a series of crimes to be investigated together under one investigator, thereby utilising police resources more efficiently and minimising unnecessary repeat court appearances (Labuschagne, 2006a). 3.2.3 Challenges with linkage analysis. There are multiple challenging factors affecting linkage analysis. Firstly, there is the issue of modus operandi and rituals. These are often confused. All of the ritual elements may not be present in every crime and thus will possibly not be recognised as such by the investigator. There may be undetectable ritualistic behaviours that are known exclusively to the offender, and there are some crime features that may serve as both MO and ritual (Hazelwood & Warren, 2003); and a lack of apparent modus operandi or rituals in some of the crimes within the series that may be due to offender impulsivity or mood or other factors beyond his control. It has been conveyed that South African serial murderers regularly use multiple methods of murdering their victims, which should be considered when attempting to link cases (Labuschagne, 2012a). An additional factor for consideration is staging, where an offender changes the crime scene in an attempt to mislead investigators (Rossmo, 2000) or to protect the dignity of the victim (Pistorius, 2005). Then there is the issue of the body. Rapid body decomposition occurs as a result of South Africa's generally high temperatures and predators feeding off corpses, resulting in delays and difficulty in discovering the bodies; and muti murders (Labuschagne, 2004) can also confuse linkage since the body mutilations are as a result of body parts that may have been removed for medicinal and/or empowering purposes and are not the personal signature of the murderer (Labuschagne, 2012a). There is also the issue of crime scene contamination at the hands of the public or even police, who do not report the changes made to the investigating officer analysing the scene (Rossmo, 2000). In addition, and according to Rossmo (2000), stranger-victim crimes are far more difficult to investigate than crimes where the victim and the offender are known to each other. As is the case in most investigations, the aim in stranger victim crimes is to link the victim or scene with potential suspects, the latter being defined from various databases that police agencies have on previous offenders and arrest records (Kind, 1987). Rossmo states that the difficult task of investigating stranger victim crimes is further impeded by the following problems: an information overload created by the high number of possible suspects and blood samples; the high costs of the investigation in terms of person-hours and particularly DNA analysis; public pressure on the police to report results; police inexperience in investigating serial crimes; the evolving experience and strategies of the offender who matures in his crime series, journeying from initial clumsier methods to a slicker operator; and false confessions from disturbed individuals who are seeking publicity or who are attracted to this type of bizarre crime. There is also the issue of linkage blindness (Egger, 1984) where law enforcement agencies are prevented from seeing beyond their area of jurisdiction. The SAPS is divided into different management areas within a province and therefore, certain cases that fall into the jurisdictions of different police stations might not be viewed as the work of one offender due to lack of communication between difference police stations. This is partly overcome in South Africa by a single DNA database managed by the SAPS. Furthermore, there has been very little research published on linking (Woodhams, Hollins & Bull, 2007) thus the judge in court may disregard linking evidence unless it has been supported by research and reflects a principle that is commonly accepted within a certain field (Keppel, 1995; Hazelwood & Warren, 2003; Labuschagne, 2004; Labuschagne, 2006a; Torres et al., 2006). In the UK, submitting offender profiles as legal evidence in court has come under much scrutiny while it is inadmissible as expert evidence because of disagreements about its definition and empirical base (Gregory, 2005). Those who currently generate profiles are challenged with the tasks of availing their data more widely and scientifically validating their profiling methods if linkage is to stand in court (George, 2008). Canter and Youngs (2010) have highlighted that ongoing research on linking crimes has revealed two central issues. Firstly, it is necessary to extend beyond the individual offender's behaviour and explore themes that are reflected in criminals' behaviour as a whole. Secondly, there is a need for ongoing research and increased understanding regarding what it is about these behaviours in their consistency and differentiation, which makes them useful for linkage purposes. 3.2.4 Geographical profiling as an aid to linkage analysis. In response to these challenges,

geographical profiling has become increasingly recognised as an invaluable aid to linkage analysis, since an offender's spatial behaviour is very useful for linking crimes and has been supported by a growing body of research. Grubin, Kelly and Brundson (2001) and Rossmo (2000) recommend using this geographic information to improve the accuracy of linkage analysis reports. Alison et al. (2010) concur, stating that apart from the physical evidence such as DNA, geospatial information appears to hold the most merit for a successful linking process. Furthermore, the geographical closeness of the crime sites may be one of the most useful indicators for linking them (Alison, Snook & Stein, 2001). Others have gone on to explore methods such as Receiver Operator Characteristics (ROC) analysis and shown them to be helpful in determining criteria for linking cases (Bennell & Canter, 2002; Taylor, Bennell & Snook, 2002). Sadly, since ineffective information-gathering of crimes and crime scenes leads to problematic geocoding, this often renders the police unable to effectively perform a linkage analysis (Breetzke, 2006). Canter (2007) recommends that police should, as a standard procedure, map out residents within a certain proximity to the crime scenes that have related criminal records. It is likely that someone who commits such a violent crime has previously broken the law. As such, he proposes the kind of crime mapping that has successfully been achieved in Las Vegas under crime analyst Dan Helms. By placing crimes on electronic maps, the Las Vegas Detective Bureau is able to look for the underlying trends that may be responsible for those points. This would be especially powerful if the different police departments all had access to the same maps. We need to literally 'pin' the serial offenders down. According to Labuschagne's personal experience as head of the Investigative Section of the SAPS, much of what has been researched and assumed about offender geographical patterns are also relevant within the South African context – that serial offenders tend to cluster their crimes and employ similar patterns of movement, that the proximity of the crimes to one another can be used as a linkage factor and that these create implications for determining the offender's base point or home (G. Labuschagne, personal communication, 5 June, 2014). Hodgskiss (2004) supports this view based on his research into South African serial murderers. Therefore, for the sake of effective serial murder investigation, accurately documenting crime sites and conducting increased local research should be high priorities for the SAPS (G. Labuschagne, personal communication, 5 June, 2014). For Labuschagne (2006a), this will allow geographic profiling to offer part of the evidence of the overall linkage analysis under the heading Geographic Patterns of the Crime Scenes as done in the linkage analysis report generated for the Newcastle serial murderer trial. The report was structured under the following headings: "(1) aim of the report; (2) information sources; (3) key terms; (4) linkage analysis; and (5) conclusion" (Labuschagne, 2006a:189). The linkage analysis was based on the manner in which the crimes were committed (the tools used, cause of death, method of obtaining victims, the sexual theme and signature) and the circumstances of the crimes (similar time of crimes, the geographic pattern of crime scenes and consistent victimology). In their continued research into geographic patterns of Italian serial murderers, Zappalà and Bosco (2007) also argue for the provision of contextual information in their court cases as it increases an appreciation of the facts and offender behaviours. The linkage of a murder series is supported in two ways by geographical profiling: the quantitative method of running a geographic information system (GIS) and qualitatively, by understanding and linking the behavioural components of the offender to his multiple crimes (Canter & Youngs, 2010). Schmitz (2004) says that before a quantitative geographic profile can be run, it is necessary to first link the crime scenes to establish the crime series. For him, running a quantitative GIS is simple, whereas establishing that a set of crime incidents are linked is not so straightforward. In addition to dots on maps, behavioural links are also important. Generally, before a geographic profile can make a prediction, investigators must be reasonably certain that the cases are indeed the work of one offender. Including crimes that are not part of the series would skew the geographic offender profile to focus on an incorrect geographical area when determining the offender's anchor point. 3.3 Geographical Profiling Based on theories of human-environmental interaction, it was concluded in chapter two that the geographical behaviour of serial murderers is learned, patterned and predictable, and that observing where they continue to commit their crimes offers clues of who they are and where to search for them. As Canter and Youngs (2008a:2) state "Indeed, much general, non-criminal human activity is open to and informed by a spatial analysis. If routine activity holds sway then it can be assumed that criminal journeys will not be that different from other forms of legal journey" This thesis examines the observable aspects of the South African serial murderer since "the most objective and observable aspect of any crime is where it happens" (Canter, 2007:8), specifically the body disposal site, since it is the last known location of the victim (Lundrigan & Canter, 2001b). Serial murders are suitable for analysis since their predatory hunt for victims, travel modes and routes, and search for body disposal sites lead them to utilising spatial decision- making (Holmes & Holmes, 2002). The study of criminal spatial behaviour has a long history. However, the formalised procedures for using this information were pioneered twenty years ago by Kim Rossmo (1993; 1995a; 1997) and David Canter (1994; Canter & Gregory, 1994), when the exciting but underexplored potential of profiling offender characteristics based on their spatial behaviours was realised. The possible process of examining physical crime sites to assist in the identification of the most likely residential or occupational areas of the offender came to be known as Geographical Profiling (Canter, 2004a). Originating out of environmental criminology research conducted in Canada (Brantingham & Brantingham, 1981; 1984), former detective Rossmo (1993; 1995a; 1997; 2000) suggested that by examining the spatial data of a series of crime locations, a probability map can be created that shows the most probable areas that would be associated to the offender such as his residence, place of work or travel routes. Brantingham and Brantingham (1981) named the where and when the fourth dimension of crime. Recognising the potential benefits of Rossmo's (1993) research, the Vancouver Police Department went on to establish the very first Geographic Profiling Section in 1995. For him, geographical profiling: Infers spatial characteristics of the offender from target patterns. This method uses qualitative and quantitative approaches that attempt to make sense of the pattern from both subjective and objective perspectives. Criminal geographic targeting is a specific statistical method that enhances the efforts of geographic profiling by delineating the most probable areas to which the offender might be associated. (Rossmo, 1995b:232). Similarly in England, Canter and Gregory (1994) reported their discovery that the homes of serial rapists were more often than not within the regional borders of their crimes. This was later used practically in the solving of a high-profile London case (Canter, 2004b), where the location of the Railway Rapist was inferred from the geographical distribution of his crimes (Canter & Youngs, 2008a). Like Kind (1987), who is considered the pioneer user of geographic models in crime investigation, Canter (1994) also recognised that the context and how the offender makes meaning of his context are important factors. For Canter (2007:8), geographical profiling is essentially, The use of crime locations to understand the offender and propose where he might be living. Since Rossmo and Canter's original ideas were presented, there has been a growing appreciation and development of geographical profiling as a strategic information management system that can respond to the demands of solving serial crimes (Wortley & Mazerolle, 2008). Local research that establishes that there are geographical patterns of serial murder in South Africa has significant implications, since geographical profiling can assist the police with managing its large volumes of information and focusing its investigations. In addition, the information obtained from crime location and place can assist local investigators in linking multiple crimes to a common perpetrator thereby enabling law enforcement to focus their patrolling efforts and geographically prioritise suspects in those areas where the offender is most probably being active (Rossmo, 1995b). For Harries (1999:152), this includes "suspect and tip prioritization, address-based searches of police record systems, patrol saturation and surveillance, canvasses and searches, mass DNA screening prioritization, department of motor vehicles searches, ZIP code prioritization, and information request mailouts". As Hazelwood and Warren (2003) explain, it could also aid in crime prevention by determining the possible temporal and location features of future offences that could be committed by the same perpetrator. Rossmo (2000) says that a geographic profile has its place within a criminal investigation. Once a series of crimes has been investigated using traditional methods and linkage analysis has determined which crimes are connected, a psychological profile of the unknown offender and a geographical profile are written up. For Alison et al. (2002), the contextual elements of a crime rests on the two theoretical assumptions of what makes offender profiling valid and useful: consistency and homology. We examined earlier that research supports the consistency assumption, but not homology entirely. Mokros and Alison (2002) had suggested that the homology assumption would likely be unproductive within offender profiling without acknowledging the influence of the situation and had thus

emphasised the need to investigate crime in context. There have been multiple proponents who support the need to investigate 'in context' by including geographical information (Wilson et al., 1997; Geberth, 1996; Muller, 2000; Alison et al., 2002; Alison et al., 2004; Zappalà & Bosco, 2007; Santtila, Laukkanen, Zappalà & Bosco, 2008); who have presented the effects of situational and environmental variables on the criminal patterns of offenders (Beauregard, Lussier & Proulx, 2007a; Bennell & Canter 2002; Goodwill & Alison, 2007; Taylor et al., 2002; Beauregard & Field, 2008; Godwin & Canter, 1997); and who have shown the pragmatic usefulness of offender spatial consistency models (Brantingham & Brantingham, 1981; Kind, 1987; Rossmo, 1997; Godwin & Canter, 1997; Helms, 1999; Canter & Youngs, 2010). These are just some of the supporters of the premise of geographical profiling, that the crime site can provide critical information to investigators. If done competently, the geographic profile will statistically deduce the likelihood of possible areas that may have been overlooked by the police but where the offender could be based (Bartol & Bartol, 2008; Muller, 2000). 3.3.1 Main theoretical concepts. As reviewed in chapter two, geographical profiling has been developed upon the foundational principles of the environmental criminology theory of Routine Activity, coupled with the behaviourist and environmental psychology theories of Response Hierarchy and Mental Mapping (Canter & Youngs, 2008a). Influenced by these, Turvey (2008) identifies the main theoretical concepts that are used as a platform for geographical profiling as: principle of least effort; distance decay; and the circle theory. These will be integrated with the major assumptions of geographical profiling as presented by Canter and Youngs (2008a): locatedness; systematic crime location choice; centrality; and comparative case analysis (linking crimes). That crimes all have a location may seem obvious, but this becomes more complicated during murder, and especially serial murder, where there are multiple locations associated with each crime: where the victim is met, where the victim is murdered, and possibly also where the body is disposed of. All of these points must be investigated, including their relationship to one another and to the offender's base (Canter & Youngs, 2008a). 3.3.1.1 Principle of least effort. Violent offenders more commonly commit offences in relatively small areas, based around their residences, and seldom travel longer distances to perpetrate their crimes (Canter, 1994; Lundrigan & Canter, 2001a; Gabor & Gottheil, 2008). Godwin and Canter (1997) investigated the spatial behaviour of 54 USA serial offenders and found that nearly all of their victims had been encountered nearby to their own residences, while the bodies had been disposed of some distance away. Interestingly, as their series progressed, the body disposal sites grew nearer to their homes. This possibly suggests that the confidence in remaining undetected increased in the offenders. As was discussed in chapter two, the serial murderer tends to employ the human principle of least effort and greatest gains (Kind, 2008), to move from one place of interest to another. This suggests that the offender is probably going to capitalise on the first opportunity, nearest to his home or base. However, as Rossmo (2000) points out, the concept of closeness is not measured by distance necessarily as the landscape is uneven, particularly in built up areas, and offenders will be affected by the physical features in choosing sites. Brantingham and Brantingham (1981) have suggested that the average journey-to-crime trip is short but that the distance (and hunting area) increases as an offender matures and his criminal career progresses. By matures, it is meant that the criminal becomes more informed and better at committing the crime (Rossmo, 2000). Journey- to-crime is a method of estimating the likely location of an offender' s residence, based on the crime sites. According to the FBI (Rossmo, 2000), the first crime committed in a serial murder series is usually the nearest one to the offender's residence. A factor that influences the distance between the anchor point and where the crimes occur is the location of suitable victim hunting grounds which could be nodes such as train stations and bus stops and the routes travelled from these nodes to places such as work or school by the suitable victims (Rossmo, 2000). 3.3.1.2 Distance decay If successful, the serial murderer will feel safe and develop patterned habitual geographical behaviour, tempered with an awareness of possible detection. Consequently, and demonstrating this geographically, criminal offences follow a distance-decay function, in that their prevalence decreases the further they are from the offender's base (Brantingham & Brantingham, 1981; Rengert, Piquero & Jones, 2008; Canter & Youngs, 2010). The distance-decay function is the most popular form to describe Journey-to-Crime and is one of the underlying methods that are used in geographic profiling. It is a geographical curve demonstrating the number of trips for several different radii from the offender's residence (Schmitz, 2004) and may decay at varying rates. Different functions have been described which have different explanations for why and how the decay occurs (Canter & Hammond, 2008). For example, if the serial murderer has a domocentric focus, the rate of decay may be occur more rapidly as he moves out from his home, compared to the offender with less of a domocentric base or who has multiple bases from which he operates (Canter & Youngs, 2010). The significance of the distance decay function for geographical profiling is that it counters the inaccuracies derived from simply averaging distances between offences, giving more weight to closer locations instead (Canter & Youngs, 2008b). Although distance decay is evident with offenders generally limiting their travel distances, there is also a proposed buffer zone that closely surrounds their homes and in which offenders will be reluctant to offend as the risk of being identified by a neighbour is likely (Brantingham & Brantingham, 1981; Hicks & Sales, 2006; Rhodes & Conly, 2008). The buffered distance decay, termed by Rossmo, presents an ongoing tension for the offender as he attempts to redirect attention from his home while simultaneously wanting to limit the distance he must travel to perpetrate his crimes (Rossmo, 2000). However, some researchers have found no evidence for the buffer zone and have proposed that it really depends on the nature of the particular offender's crimes. If his target group is to be found somewhere else, there is no evidence that he is specifically avoiding the areas around his home (Canter & Youngs, 2008b). The reasons, as in other areas of geographical profiling, turn out to be more complex than assumed. For Turvey (2008) and Gabor and Gottheil (2008), the principles of least effort and distance decay are affected by opportunity. For example an offender preying on sex workers must go where sex workers are operating. All cities have a disproportionate amount of crime in some areas rather than others due to the varying opportunities that they present (Gabor & Gottheil, 2008). A further assumption of geographical profiling is that choice of crime location is not random. Typically, those that murder strangers travel relatively short distances from their homes to do so (Canter, 2007). Though some offenders travel from their homes to create some distance between their homes and murder sites, they are not travelling at random. They know the location where they are going to because they have been there before (Canter, 2007) and they know the exciting potential gains from the location (notably to canvass and acquire victims) as well as where to relocate the victim (if relevant) for murdering and/or disposal purposes. Like the rats in Tolman's maze, they are honing their skills and rehearsing and refining their geographical journeys to achieve their purposes more speedily and effectively. In addition, it makes sense that these selected locations would fall more under the public domain, as opposed to private properties, to which the offender would have limited or no access (Rhodes & Conly, 2008). On this point, it is also interesting to consider that serial murderers may well deliberately avoid certain areas rather than consciously choosing others. Therefore, it would also be noteworthy to model location choice based on the areas that they do not go to as opposed to the ones they do (Canter & Youngs, 2008b). 3.3.1.3 Circle theory. Based in part on the least effort principle and distance decay function, Canter and Larkin (1993) developed their circle theory and what Canter refers to more recently as centrality (Canter & Youngs, 2008a). Established upon the theory that serial murderers are more likely to offend within areas in which they feel familiar (Wilson et al., 1997), it suggests that most offenders live within a zone defined as a circle whose diameter joins the two furthest crimes, and that based on the offender's spatial distribution of crime sites, his residence or anchor point can be predicted. It assumes that crime sites describe an area of activity that spreads out from its base. The offender's base would thus be in the middle of this proposed circle. However, Canter (2007) acknowledges that this is inaccurate as crime scenes are usually unevenly distributed within a region. He describes how to calculate the 'centre of gravity' of the points on the map instead: You need first to fix a point on the map. Somewhere to the edge of the crime locations is easiest, but it does not really matter where. This point is your 'notional zero'. Now draw a horizontal line and a vertical line from this point at right angles to each other. From each of the crime locations now draw two straight lines: one that touches the horizontal line, the other touching the vertical line, but each touching those lines at right angles. These are notional coordinates of the crimes on the horizontal and vertical lines. Measure the distance from your notional zero to each of the coordinates and calculate the average of these distances. At this average point draw new horizontal and vertical lines into the area of the crimes. Where these two notional lines cross is the average weighted centre of the points – the arithmetic heart

of the crime locations (Canter, 2007:130). Canter recognises a weakness of circle theory, which assumes that offenders travel equally in any direction around a base (Canter & Youngs, 2010). He acknowledges the increased accuracy of the windshield wiper pattern proposed by Warren, Reboussin, Hazelwood, Cummings, Gibbs and Trumbetta (1998). This pattern suggests that the offender's activities are biased in a set direction, typically a 60 degree (acute) angle; from the base and that the bias is towards particular areas that are more familiar to him. Figure 2 A 60 degree windshield wiper pattern Two models of offender spatial behaviour (Canter & Larkin, 1993) are reflected in the concept of centrality: marauders and commuters. These represent competing models within which the residential anchor point influences where the crimes occur and the conceptual distinction between the offence styles has been validated by studies of sex offenders in Australia (Meaney, 2004). Those offenders who moved out from a base to commit crimes before returning back to base, he called 'marauders'. These offenders can be viewed as static, localised or geographically stable serial offenders who perpetrate crimes within a restricted area because of psychological barriers and their preference for working with minimal effort and within familiar territory. Marauders launch from their home base when executing crimes (domocentricity) and their anchor points usually lie within the scattering of their crime sites (Canter, 2004a). There is therefore an anticipated overlap between the offender's residence and crime range (Canter & Larkin, 1993). Similarities exist between the daily spatial activities of marauders and the idea that crime is a reflection of the legitimate activities of offenders (Canter & Youngs, 2008a). The other offenders were more like 'travelling offenders' (commuters) who seek out victims as they move around and away from a base. They have more recently been termed travellers by Canter (2004a) since there are multiple strategies involved, not just moving out and back home again as in the commuting concept. They are mobile or geographically transient serial offenders who employ complex hunting strategies and commit their crimes outside of the habitual zone, over large areas, crossing cultural and psychological boundaries. Most of their offences occur outside their awareness space and they lack a definable anchor point. There would be little or no overlap between their home and criminal ranges (Canter & Larkin, 1993). Since marauders operate from a set base, spatial consistency models can be used successfully to determine their likely residential locations, as opposed to modelling the homes of offenders who 'travel' to perpetrate their offences (Canter & Gregory, 1994; Canter & Youngs, 2008a). According to Canter and Youngs (2008a), there are other ways of modelling the behavior of serial murderers that do not depend on the domocentric assumption, but these have not been empirically tested or applied to actual cases. There is a challenge for further research into determining which murderers are travelers and marauders based on aspects of their criminal behavior (Canter & Youngs, 2008a; Turvey, 2008) since the style of offending may also have to do with the increased skill or confidence of the offender (Turvey, 2008). One study by Lundrigan and Canter (2001a) seemed to suggest that travelling serial murderers, who travel larger distances, tend to focus their crimes more intensely on a given area, where their consecutive crimes are closer together than their alternate crimes. With marauders, who travel shorter distances, the alternate crimes are closer than the consecutive ones, presenting a pattern that is more spread out. 3.3.2 Identifying a series. When establishing a series for geographic profiling, the following aspects should be considered (Rossmo, 2000; Rossmo, 1995b; Schmitz, 2004; Wortley & Mazerolle, 2008): crime locations; single or multiple offenders; offender hunting strategy; target backcloth (the area in which suitable victims can be found); major routes and freeways; bus stops, railway stations and taxi ranks; footpaths and trails; physical and psychological boundaries; zoning and land use; neighbourhood demographics; victim routine activities; singularities; and displacement. These will be described briefly. 3.3.2.1 Crime locations. For Rossmo (2000:216), there are a series of questions to be asked regarding crime locations: "What are the locations connected to this crime or crime series? Where are they? What are the distances and travel times between them? When did the crimes occur (time, weekday, date)? What was the weather on these days? What are the time lags between these crimes? How were the crime locations accessed? What else is in their general area? How might the offender have known of these locations? What criminal function or purpose did they serve?" For Wortley and Mazerolle (2008), crime scene evidence can offer clues regarding the previous location of the offender and victim. In addition, comparing the clues from the multiple crime sites influences the development of the serial offender's patterns. 3.3.2.2 Single or multiple offenders. According to Wortley and Mazerolle (2008), in the event of there being multiple offenders in the series, the geographic profile will profile the dominant offender in the group. Serial murderers do not commonly perpetrate crimes in groups, however. 3.3.2.3 Offender hunting strategy. Wortley and Mazerolle (2008) state that the link between an offender's hunting strategy and his legal activities influence how familiar the offender is with the crime location. Certain types of offender-victim encounter sites are connected to and influenced by the hunting strategy types of the offenders (Beauregard, Proulx, Rossmo, Leclerc & Allaire, 2007b; Bennell &Canter, 2002; Goodwill & Alison 2007; Taylor et al., 2002; Godwin & Canter, 1997). Like leopards hunting their prey, so too does the serial murderer have a hunting strategy that encompasses the geographical range over which he normally travels to pursue his routine activities (Mizutani & Jewell, 2008). For Rossmo (2000), the hunting strategy involves searching for the suitable potential victim as well as deciding upon the mode of attack. It influences the pattern of the multiple sites of a serial murder (encounter, murder and body disposal) and must be considered when creating a geographic profile. He proposes asking the following questions: "What hunting method did the offender use? Why were these sites chosen, and not other possible locations? What was the offender's probable mode of transport?" (Rossmo, 2000:216). Like leopards, do serial murderers target areas where it is easier to get their prey, as opposed to where the prey is more abundant? (Balme, Hunter & Slotow, 2007). While there is agreement that offenders employ hunting strategies to seek and encounter suitable targets, there is debate regarding whether these can be simply linked to neatly defined offender typologies. Holmes and De Burger (1988) suggested four different types of serial murderers based on their motives, patterns and decision-making processes: visionary; mission driven; hedonistic; and power serial offenders. Rossmo (1997) also identified four types of offenders, differentiated by their hunting strategies: the hunter, poacher, troller and trapper. Schmitz (2004) described the modes of attack that can then be used once the victims are selected and encountered: raptor; stalker; and ambusher. Beauregard et al. (2007b) suggested three serial sex offender scripts - the coercive, the manipulative and the nonpersuasive. These revealed information regarding the crime preparation (such as sexual fantasy development), preconditions (like the absence of a guardian), and the exit from the setting (such as evidence destruction). For Bartol and Bartol (2008), these studies further our understanding of offenders' motivations and also suggest strategies of crime prevention. However, there are proponents who do not find such typologies useful. In his study on the analysis of the social construction of the serial murderer, for example, Cater (1997) determined that the hedonistic, power/control and mission-oriented typologies offered by Holmes and De Burger (1988) were too general to be mutually exclusive and definitive. For Canter and Shalev (2008), serial murderers use different strategies at different stages of their careers. The main components of their strategies include: the time frame over which the series occurs; the targets of the crimes; the routes taken to the crime; and the stages in the career at which they occur. Boxing them into animal typologies such as predators or stalkers does not account for the dynamic component of spatial behaviour and further research is required to examine particular strategies that may give rise to observed crime patterns (Canter & Shalev, 2008). 3.3.2.4 Target backcloth. The victim backcloth - suitable victims within a particular geographical landscape – informs investigators in their understanding of how the crime sites are physically and temporally distributed (Brantingham & Brantingham, 1993). Target types and their availability can vary quite significantly according to the area, the time, the day of week, and season (Rossmo, 2000). If the area in which suitable victims can be found is patchy or restricted, it affects the offender's degree of choice, which in turn affects the importance of crime sites considered for the profile. For Rossmo (2000:216), the relevant questions to be asked here include: "What is the geographic arrangement and availability of the target group? What degree of control did the offender have over the choice of crime locations? Did displacement (spatial and/or temporal) occur?" 3.3.2.5 Major routes and freeways. While major routes and freeways play a large part in crime in other countries, where cars are commonly used by criminals and victims alike, this is less influential in South Africa as most local serial murderers do not have vehicles. For offenders who do own vehicles, a clustering of crimes is often found around the onramps and offramps of freeways (Wortley & Mazerolle, 2008). A South African example would be the NASREC serial murderer. He was a taxi driver who was restricted to the major routes in Johannesburg and Soweto, thus committing his crimes in close proximity to them (Schmitz, 2004)

while the so-called Sunday Rapist, Jaco Steyn, typically picked up his victims in residential areas and then took them to deserted areas to rape them. 3.3.2.6 Bus stops, railway stations, taxi ranks, footpaths and trails. Since some local criminals do not have their own transport, they either walk or rely on the public transport system to move about. Bus stops, railway stations and taxi ranks are therefore particularly relevant in South Africa, as are footpaths and trails, and they should all be taken into account when profiling South African serial murderers (Schmitz, 2004). 3.3.2.7 Physical and psychological boundaries. Physical and psychological boundaries can serve to limit offender and victim alike. Physical boundaries include rivers, mountains, lakes or freeways, while psychological boundaries restrict offenders who feel insecure beyond them. An example would be a Black offender who might choose not to enter into a White neighbourhood as he fears being identified (Wortley & Mazerolle, 2008). For Helms (1999), the crime analyst is required to make a comparison and search for correlations between the known targets of the series to the various geographical data sets, which include public buildings, schools, post offices, police stations, apartment complexes, bus stops and routes, zoning and land use areas. 3.3.2.8 Zoning and land use. Zoning and land use can provide information on why a crime has happened (what the attractors are) within a certain area and where to look, once a peak profile has been drawn of an offender (Schmitz, 2004). 3.3.2.9 Neighbourhood demographics. Schmitz (2004) also mentions neighbourhood demographics. Some serial murderers opt to victimise particular racial groups, and these potential victims are normally concentrated in certain areas, which could also influence the profiling. 3.3.2.10 Victim routine activities. Victim routine activities are important since they may inform offender hunter strategies. Serial offences are dependent upon the availability of victims who follow particular lifestyles and routines (Kennedy & Forde, 1990), which in turn may be affected by the time of the day, week or month. 3.3.2.11 Singularities. Singularities refer to a single event crime that does not appear to be part of the series, but its proximity necessitates close scrutiny (Rossmo, 2000). 3.3.2.12 Displacement. Displacement occurs when media reports or insecurity of the offender due to heightened police activity and/or a perceived increase in the risk of detection/ apprehension, will force the offender to change location, which causes the subsequent crime sites to be lost to the series, until they are hopefully later identified as being part of the series. Spatial displacement is when the offender moves elsewhere to commit his crimes as a reaction to increased police crime prevention efforts and community wariness or a reduction in opportunity to capture victims (Rossmo, 2000). The inclusion of such geographical information into a profile can inform investigators about the mobility, mode of transport and very importantly, the possible residential location of the offender, since his spatial intentionality reveals his comfort zone and the locations that are familiar to him (Pistorius, 2005). The reality may be more complex, however, as the serial murderer may have multiple anchor points (Lersch, 2007). These form the primary considerations in the generation of a geographic profile. As described in Rossmo's (1995b) definition of geographical profiling, there are both quantitative (objective) and qualitative (subjective) techniques. To gain a deeper qualitative understanding of the spatial aspects of serial murderers - the focus of this study - the additional exploration of how the offender makes meaning of his context, is important (Canter, 1994). A brief overview of some of the primary quantitative techniques is presented. 3.3.3 Quantitative methodology. Quantitative geographical profiling essentially involves computerised mapping and spatial analysis techniques to assist crime mappers (Ainsworth, 2002). The main aim is to determine the most probable area where a serial criminal's anchor point is situated. Since serial murder sites often cluster within certain geographical locales, there is a great likelihood of the responsible perpetrator living or working around the area (Muller, 2000). Schmitz (2004) says that offender residence can be determined from the geographic connection between the multiple known crime locations (encounter/apprehension/murder/body disposal) as well as the features and demography of the local neighbourhoods. In most of the serial murder cases, the body recovery site is the only site known to the investigators, at least until the victim is identified and investigators can then attempt to trace the victim's last movements. The total area covered by the serial murderer's incident locations is known as the 'hunting area', upon which the geographic profile is based. The peak profile is that area of the geographic profile that indicates the highest probability in which the offender's anchor point can be found (Schmitz, 2004). Geographic profilers employ a geographic information system (GIS) to input and perform geographic analysis of these crime site coordinates (Schmitz, 2004). Eastman (2001:9) describes a Geographic Information System as a "computer-assisted system for the acquisition, storage, analysis and display of geographic data". It consists of a powerful set of tools to portray this spatial data from the real world (Burrough, 1986). Rengert (1991; 1996) proposes four spatial patterns of crime sites: ? Uniform pattern around the anchor point, which shows no distance-decay influence. Up to a certain distance, offences can be committed at all locations with equal likelihood. For Schmitz (2004), this is a very difficult pattern to profile and could indicate that the offender commutes. ? Bimodal pattern has two anchor points of equal significance to the offender and have crimes clustered around it with a distance-decay influence. The Norwood serial rapist had a bimodal pattern, where the slightly more dominant was his residence at the SAPS Barracks in Norwood and the other was his parents' house in Brakpan (Schmitz, 2004). ? Bull's eye or doughnut pattern shows distance-decay influences with crime sites distributed around a single anchor point. Schmitz (2004) says that the local Mine Dump serial murderer is an example of this type of spatial distribution. ? Teardrop pattern is a pattern which shows a clearly dominant anchor point with a directional bias to the secondary anchor point. Directional bias may suggest that there are additional factors to distance that are influencing where the serial murderer is committing his crimes. According to Schmitz (2004), the local Wemmerpan serial offender displayed a teardrop pattern, with his residence as the primary anchor point and downtown Johannesburg as his secondary anchor point. Figure 3 Graphic examples of the uniform and bimodal patterns. Figure 4 Example of the bull's eye / doughnut pattern. Figure 5 Example of the teardrop pattern. Determining whether there are patterns in the crime site locations and informing the search for a serial offender's residence, the GIS open up a host of possibilities with regards to the ecology of crime (Ainsworth, 2002). Some have proposed however, that the GIS is not an essential tool for this process. There has been a critique (Canter; 2005; Rossmo, 2005; Snook, Cullen, Bennell, Taylor & Gendreau, 2008b) of Snook, Taylor and Bennell (2004) who conducted a single experiment and suggested that predictive accuracy in geographical profiling could be 'fast and frugal', without the need for much training or assistance from sophisticated geographic profiling software. Canter (2005) deemed their experiment to be simple-minded while Rossmo (2005) challenged that they used flawed methods and reached unproven conclusions. Bair (2000) points out that although not random, human behaviour can be an unpredictable and complex set of interactions which can result in large and unanticipated consequences. Similarly, Helms (1999:19) comments on the complexity of making the predictive task actually work: We're attempting to intercept a pattern; therefore, there must actually be a pattern. The analyst must accurately isolate all the elements, temporal and spatial, that define the pattern. The offender must adhere to his pattern. As anyone working in law enforcement is well aware, minor chaotic changes in environment or the offender's life can completely distort any attempts to predict his behaviour. Guesses about where and when the offender might strike might be completely reasonable, yet fail because the perpetrator catches a cold that week; or has final exams in school; his girlfriend moves in; he sees a news story about his crimes and grows alarmed at police response; his demand note gets eaten by his dog or his flashlight batteries wear out - any of literally hundreds of thousands of imponderable factors can intervene… It is therefore important for the analyst to maintain her or his credibility by articulating the fallible nature of crime series prediction, even while standing up for the validity of the prediction itself. Both Rossmo and Canter recognise that the weaknesses in the modelling of criminal actions show the need for increased understanding of offenders' decision-making in their criminal behaviour, as well as how investigators can make practical use of software that has been based on this understanding (Canter, 2005). Bair (2000:1) puts it thus: Just as the development of GIS (Geographic Information System) from the less powerful paradigm of simple mapping represents a necessary evolution in technique, so must we advance beyond GIS into the next level of capability: Geographic Information Analysis, or GIA. Most analysts acknowledge that GIS represents a fundamental paradigm shift from simple mapping, and that the power brought to law enforcement analysis operations by a GIS is essential to modern police work. Now, however, we must face the fact that our use of GIS is limited by our map-oriented perspective. To develop beyond this perspective, we must evolve toward a more analytical construct - GIA. Canter and Rossmo both went on to develop their own geographical profiling systems, a term labelled by Rossmo (2000), and these form two of the three main models currently being used. These differ according to their

calculations, cost, interface and output (Paulsen, 2004): ? Rigel (Kim Rossmo) ? Dragnet (David Canter) ? CrimeStat (Ned Levine) 3.3.3.1 Rigel (Rossmo). Rossmo (1993) was influenced by Brantingham and Brantingham (1981) who utilised information about the activity space of an offender to predict where he will commit crimes. They suggested that selecting victims is a dynamic process in which an offender's crime locations are largely determined by the intersection of areas known to him that have suitable targets and his activity space: the areas in which he lives and works. Rossmo (1995b) was interested that the Brantinghams' model approached crime prevention from a different perspective: what does a crime location say about where the perpetrator might reside? He developed a computer programme called Criminal Geographic Targeting (CGT) which was subsequently computerised into a commercial software product called Rigel Profiler. CGT uses inputs from their environmental criminology theory and inverts their research (Rossmo, 1995a). Rossmo's (1993) model is designed to analyse the geographical or spatial characteristics of an offender's crimes, displaying a colour map of probabilities assigned to his most probable residential, occupational, social or travel route areas. For the vast majority of people, their residence is usually the anchor point within their activity space. For others, it may be where they work or possibly the home of a relative or close friend. As offenders move outward from their anchor points in search for victims, a distance-decay becomes evident: offender interactions decrease as distance from the anchor point increases. It is this distance-decay function upon which quantitative techniques are modelled. However, there may also be a buffer zone immediately surrounding the offender's anchor point within which victims will not be targeted as the proximity to residence is viewed as being too risky (Rossmo, 1995b). The Brantinghams' (1981) model predicts then that an offender's residence would be located at a centre point with the overall crime pattern. However, the spatial mean is limited in its capacity to demarcate offender residence since most activity spaces are complex. Situational distortions such as traffic flows or variations in zoning and land use may affect victim spatial distribution. The methodology of CGT is sensitive to target backcloth and spatial outliers in the landscape and therefore, results can be significantly distorted (Rossmo, 1993). CGT involves four steps to calculate the probability surface of where the anchor point might be located. Spatial data (time, distance and movement) is mathematically analysed after which the programme creates a topographical map (a three-dimensional model referred to as a jeopardy surface). This colour map assigns different statistical scores of probability to the different areas that may be included within the offender's criminal terrain (Rossmo, 1993; 1995b) and considers any known movement patterns, potential comfort zones as well as patterns that are theoretically assumed for the victims of a particular perpetrator (Bartol & Bartol, 2008). In spite of its limitations, CGT appears to be a useful tool in serial crime investigation. Since the launch of the Vancouver Police Department's Geographic Profiling Section in 1995, Scotland Yard, The FBI, The New York Police Department and The Royal Canadian Mounted Police have all used the services of Rossmo's geographic system. Schmitz (2004), who retrospectively used the Rigel Profiler on seven serial cases in South Africa, considers it the most advanced geographic profiling method since it has been developed specifically for violent serial crime investigation. Furthermore, Schmitz claims that CGT can model Rengert's (1996) proposed spatial patterns well, barring the uniform pattern, and can be used to assist in serial murderer convictions (Schmitz, Cooper, Byleveld & Rossmo, 2000). 3.3.3.2 Dragnet (Canter). Canter worked with his colleagues in the mid-1990's to develop Dragnet, a geographical prioritisation programme. He emphasises the use of the 'prioritisation' term (Canter, 2014b) since plotting crime scenes in an estimated circle or landscape is not precise (Canter, 2007). There are other factors that influence our physical judgements of space. "Psychologically all distances are not equal. As distances increase so we need a larger change in their size for the change to be noticeable" (Canter, 2007:131). This can be done mathematically in the Dragnet programme. Users input the locations of the crime series and the analysis produces a prioritised map of areas in terms of the offender's likely base. Using the flexible Dragnet tool, Coffey and Canter (2000) conducted a study of 79 USA serial offenders, testing 570 different ways of determining the locations in which the offenders might have been living. Although research on Dragnet is limited, their results indicated that the most effective form of measurement only needed to consider just over one-tenth of the overall area of the crime locations. For them, that all of the offenders were within the overall designated search area, demonstrates the efficacy of employing such geographic information systems in the context of crime investigation. According to Canter and Youngs (2010), Dragnet has been employed by a number of police forces worldwide. Dragnet also has additional features. It has an option of adjusting the prioritisation pattern for city block networks, which can reveal any existent linear structuring within a crime series. The resultant line is examined alongside the local transport networks and time of the offence, to further inform proactive policing. In addition, Dragnet may also indicate the presence of multiple geographical foci which could suggest the possibility of more than one offender (Canter, 2014b). Dragnet is based on the psychological principles that underlie mental mapping as well as on the typical distances that offenders travel from their anchor points to perpetrate their crimes (Canter, 2007). However, Canter recognises its limitations and states that the current success of any software relies on the criminal's base being within the demarcated region of crimes. Since most serial murderers in South Africa tend to travel and have wide-ranging activity spaces, establishing their residential anchor points would not be possible. For Canter, (2007), the register of missing persons does little to highlight the presence of crime. It simply demonstrates the absence of its victims. Canter states that "to detect their earliest crimes and identify these murderers, we need better, coordinated pictures of what crimes are happening where. These criminals can show up on virtual images if we compile them effectively" (2007:85). He speaks about the idea that where there is a consistent absence of information, there must be something present to be causing that absence. He suggests focusing on the missing data and asking if there were commonalities between the victims and where they disappeared. He also suggests asking whether the geography of where they all vanished, point to some base of hidden activity that may only be seen from what is absent? When one person goes missing but no one notices, there is little to go on. However, when a series of victims have disappeared, a collection of missing information about them collated with the missing information of victims from other cases may point to the "black hole" in which they disappeared (Canter, 2007). Dragnet however has fallen behind the times, users cannot input GPS or other coordinates, and the plotting of the scenes has to be done manually by placing a transparency with the crime scene locations over the computer screen and then using the mouse pointer to mark the spot, similarly maps cannot automatically be inserted into the programme. 3.3.3.3 CrimeStat III (Levine). Developed by Ned Levine & Associates, Journey-to-Crime (JtC) algorithms were developed from environmental criminology and travel behaviour theory and "build on the Rossmo framework, but extends its modeling capability" (Levine, 2002:357). Journey-to-crime estimation is a method of identifying a likely base given the distribution of crime sites and assumptions about travel behaviour (Levine, 2010). The suite of these routines is a Windows-based spatial statistics software program known as CrimeStat, the latest version being CrimeStat IV (Levine, 2000, 2013). The GPS coordinates of a sample of crime locations are entered into the programme and calculated in various ways. The objects can be location points, zones like blocks or cities, or lines such as street segments. Using five steps, the program can analyse object distribution, indicate hot spots, identify spatial autocorrelation, model travel behaviour as well as monitor the spatial and temporal interaction of events (Levine, 2013). According to Rossmo (2000), research on Journey-to-Crime has demonstrated several geographical aspects of crime: 1) incidents occur near to the offender's anchor point in most cases, 2) crime numbers decrease with distance from the offender's anchor point, 3) crime types determine this distance, with property crime tending to be further than crimes of violence, 4) high crime neighbourhoods influence the crime trip pattern and, 5) the distance decay curve is the most popular form to describe Journey-to-Crime. The distance decay curve shows the number of crimes that occur at specific distances from a specified point. The rationale is that with the maturing of the criminal (social learning theory) where he becomes more informed and skilled at committing his crimes, the distance between his base and his hunting areas/crime locations increases. In CrimeStat, a grid (the hunting area) is overlain on top of the area of interest. In addition to the programme creating this grid from input data, users have the added option of creating their own grids. Schmitz (2004) differentiates this from Rossmo's Rigel, which creates its own optimal hunting area. CrimeStat uses a distance decay function for each grid cell-incident pair and sums the values over all the incidents to produce a likelihood estimate for each pixel. The higher the pixel value, the greater the likelihood of finding the anchor point. The JtC routines have five standard mathematical functions to do distance modelling on the linked incidents. These mathematical functions are known as

probability distance functions. The five functions are (Levine, 2002): linear, negative exponential, normal, lognormal and truncated negative exponential. Linear is the simplest of the five functions, using the assumption that the likelihood of a crime declines by a constant amount away from the anchor point. Negative exponential also assumes that the number of crimes decline with distance from the base point but that the decline is exponential rather than constant. Normal is a function that assumes that the offender creates a safety zone and will commit his offences away from the anchor point, peaking at some distance and then declining. In the normal distribution, the rates of increase and decrease are equivalent. According to Schmitz (2004), Rigel uses a similar approach, except that it uses a linear function to model the increase and a negative exponential curve to model the decline. Lognormal is similar to normal, but the rates of increase are more rapid than the rates of decrease. Finally, the truncated negative exponential is similar to Rigel, where the rise is linear and the decline is exponential. In spite of its challenges, such as the fact that some routines produce better geographic profiles than others, CrimeStat is being used by law enforcement agencies worldwide and it is a free programme, unlike the other two models. 3.3.3.4 Bayes journey-to-crime estimation. A new but different analysis, empirical Bayes journey-to-crime estimation (Levine, 2009), uses an 'origin–destination' rule in addition to the 'distance decay' function. The analyst seeks to establish where the previous offenders who committed crimes at the places that form part of the current investigated crime series, resided. The Bayesian Journey-to-crime analysis adds information regarding where previous offenders resided who perpetrated crimes in the same locations to the Journey-to-crime estimate (Levine, 2010). The model is purported to improve accuracy and precision of methods that only use a distance decay function, having been tested on sets of serial offenders in Chicago (USA), The Hague (The Netherlands) and Manchester (United Kingdom). Furthermore, the method can also improve the search for both marauders and travelling offenders as it reduces the traditional distinction between them (Levine, 2010). For Canter and Youngs (2010), with appropriate data, this purely statistical approach can be very powerful. 3.3.3.5 Efficacy of GIS within South Africa. Since its inception, there has been a positive and growing recognition of the significance of geographical profiling systems within the investigation process. Thus far, much of the international research appears to be pointing to the efficacy and relevance of using geographical patterns in the analysis of criminal action, including serial murder. Following the informal training as well as a workshop on the principles of geographic profiling for select SAPS and CSIR members in the late 1990's, quantitative techniques of geographic profiling have been practically applied with accuracy in two local serial murder cases. Since then, GIS technology in South Africa has been recognised as a significant decision-making tool in crime. Schmitz et al. (2000) used GIS to generate digital maps that were shown in court to demonstrate the spatial extent of the Johannesburg South Wemmerpan serial offender's cases; Geldenhuys (2001) examined patterns of crime in Hatfield, Pretoria; Parker and Dawes (2003) used GIS to detect areas in Atlantis, Cape Town that posed a high risk of child sexual abuse; Redpath (2001) studied the prospect of gangs within the Western Cape; case studies of crime mapping have been conducted in Paarl (Lochner & Zietsman, 1998; Erasmus & Mans, 2005); and Weir-Smith (2004) made use of GIS to establish the national hotspots of substance abusers. 3.3.4 Qualitative methodologies. For Harré and Secord (1972), all behaviours are made in relation to the context within which the individual perceives himself to be. At the heart of the qualitative geographical profiling of serial murderers, is the notion that "what they do may be bizarre and beyond reason, but to escape detection and capture over and over again, there has to be an ordinary logic to where they commit their crimes" (Canter, 2007:168). Qualitative geographical profiling seeks to understand this logic. Canter's (2000b) two psychological processes, foundational to the circle theory, were discussed in chapter two: propensity to propinquity (that many serial murderers commit their crimes around some base like their homes), as revealed by a decay function, and morphology (that concerns itself with examining how criminals think about and make sense of their physical surroundings). To review, as serial murderers go about their daily routines, they develop internal representations (mental maps) of their usual activity spaces. Given that they successfully achieve their murderous goals by doing so, these offenders will repeat and reinforce these behaviours and their pathways eventually develop into unconscious habits. To have the greatest chance of success and to avoid detection, the mental maps of serial offenders influence them in where they seek out their victims, murder them and dump their bodies. In turn, however, these locations give insight into the mental maps, and thus probable activity spaces, of serial murderers. According to Canter (2007), the starting base assumption is that consciously or not, serial murderers are making certain active choices when it comes to the locations of where they perpetrate their crimes. It is an important recognition that serial murderers do not act in random fashion but have a patterned way of behaving within their world and have some level of influence over where they commit crimes. For Canter (2009), even if their actions are perpetrated by impulse, offenders would still be acting on the impulse at a certain location that they chose to be or at least suggests other locations at which they chose not to be (Canter, 2009). Because human beings are creatures of habit, there is a preference for a uniform, rather than random distribution of points. In the offender's attempt to appear random, he is in fact likely to make spatial choices which are based on highly predictable criteria and that are actually highly susceptible to analysis by a trained person (Helms, 1999). While the Brantinghams' (1981) model acknowledged the interaction between offenders' mental maps and the target backcloth, it was Canter (1977) who highlighted the psychological implications of this process. He said that offenders build up mental pictures of a region, without having necessarily travelled all of its routes. This notion of where things are or how to get to them, also influence their choice of where to offend. For Canter and Youngs (2010), this developing process (morphology) is derived from the combination of storing environmental information and the passive availability of cues from the environment, and is the map from which he draws possibilities. They advocate that "where a person does various things is consequently partly a product of what that person knows to be possible and where" (Canter & Youngs, 2008a:8). The proposal is made that victims fall prey not so much because of who they are but where they are (Canter, 2007). A reconstruction, understanding and interpretation of their mental maps inform us about the interaction of the offenders' and victims' activity spaces. The mental map encompasses two parts: the location of the murder and the nature of the victim. Canter states, "That location will have a meaning for the victim and will play a particular role in the offender's personal geography. It is the fusion of these two into a deadly mixture that creates the murder" (2007:25). Rossmo (2000) had previously indicated three important aspects of routine activity that contribute to the linkage of serial murder: offender typology; victimology; and the environmental interaction of the two in context. Sorochinski et al. (2015) found that a recently-developed American classification of serial murder crime scenes is applicable to the South African context, but with two important differences: (1) tool availability and physical environment; and (2) psychological factors. The accessibility of certain weapons in some local contexts, influence the offender's weapon of choice, and the physical environment may influence where he selects to apprehend and dispose of his victims. In addition, psychological factors may also impact the offender-victim interaction in terms of violence. This is related to the different socio-economic customs, attitudes and practises of the nation (Salfati et al., 2015b). In this study, the concept of offender typology (which has been critiqued) will be replaced with an examination of the inner narrative of serial murderers instead. Thereafter, the roles that they assign to their victims and the locations where they apprehend, murder and dispose of them, will be discussed. 3.3.4.1 Inner narratives of serial murderers. Salfati et al. (2015b) offer a demographic summary of 33 South African serial murderers, their crime scene actions and their victims, as compared with those of other countries. Generalised sample results revealed that the South African offenders are similar to offenders in the USA in terms of their average age being in the late twenties or early thirties at the time of their first known murder; that most of them were in a relationship when perpetrating their offences; and that most of them had a previous criminal record. However, unlike the USA, all the serial murderers in South Africa were male and mostly Black. The latter is most likely because Black people are the majority race within the country. According to our 2011 National Census, they constitute 79.2% of the nation (Statistics South Africa, 2015). The local serial murderers in the sample also differed from their USA counterparts in that they seemed to be somewhat less educated; had increased sexual motive (where the USA sample had higher rates of sexual activity and assault); and many more brought their weapon to the crime scene and used a blunt instrument than those in the USA. The readiness of weapons may demonstrate pre-planning or possibly that South Africans are predisposed to carry weapons because of elevated crime rates (Salfati et al., 2015b). Producing an offender profile is not just about overviewing information that is known about the

offender, however, but also involves establishing what valid implications (inferences) can be drawn from what happened during the crime (Canter & Youngs, 2010). Examining the inner narratives of serial murderers and the roles that they assign to their victims roles, as these come together in physical space, lies at the heart of qualitative geographical profiling (Canter & Youngs, 2010). According to Canter (2007:9), The secret of geographical profiling is to go beyond the dots on the map to understand the significance of the places the offender is choosing, and the meaning to him of the journey he is making. There is always a choice available to any offender of where to offend. That choice comes from within his criminal being, and understanding how that choice is made open doors into the criminal's mind. The dot on the map is more than a dot. It forms part of the serial murderer's journey, the world that he is creating in his head (Canter, 2000b). For Canter (2007), criminal ranges are affected not only by their familiarity or opportunity (Brantingham & Brantingham, 1981), but also by these life journeys of the offenders. The crime sites and geospatial activity of serial murderers will be consistent with the roles that they assign to themselves within this journey (Canter & Youngs, 2010). Canter (1994) calls these inner narratives, and describes them as the "unfolding plots driven on by the inner struggles of the offenders" (Canter, 2007:14). Individuals who murder for no obvious reason, are typically emotionally confused people and their feelings find some sort of release through the violent (Canter, 2007) ritual enactment of their fantasies (Norris, 1990). Canter (1994) also referred to the inner narrative as the criminal shadow, the noncriminal behaviour that criminal behaviour mirrors. He identified some aspects to this: the personal world he inhabits, the care that he takes to avoid apprehension, the experience displayed in his crime, unusual aspects of his crime and his habits, which may well spill over into his daily life. Canter (1994:299) states, "The challenge is to reveal his destructive life story, to uncover the plot in which crime appears to play such a significant part". This requires establishing what Canter calls a hierarchy of criminal differentiation. Instead of offender typologies, Canter (Canter, 1994; Canter & Youngs, 2010) suggests that there are four dominant themes that pervade different crimes and are described according to the inner narratives with accompanying characteristic roles that the offender assigns for himself: ? Victim (irony). The victim role is seen as a manifestation of the irony narrative. This has to do with confusion and powerlessness, a sense of generalised impotence and meaninglessness, where nothing makes sense and there are no rules and no happy endings. ? Hero (quest). The hero role is seen as a manifestation of the quest narrative, a man on a mission, seeking honour and recognition, casual about his manliness and bravado - it's "nothing". ? Professional (adventure). The professional role is seen as a manifestation of the adventure narrative, where life is seen as a chance for mastery, competency and reward and is exciting, risk-taking, calm and positive. ? Revenge (tragedy). The revenge role is seen as a manifestation of the tragedy narrative, about the wounded hero who must now right the wrong and seek retaliation, making a total commitment to a life of violence and undoing. The created inner narrative contains information on how the serial murderer understands and interacts with the world, will give meaning and 'rationale' to the unfolding life story, will maintain that established role and will be reflected in everything that he does (Canter, 2000b). Serial murderers assign themselves as the main characters within their life stories to maintain a sense of continuity within this change. Canter (2000b:219) says that: Each person becomes an expert on their own particular history of experiences, although their expertise will always be biased and will not always be helpful. A person's experiences will have moderately stable components…but there will also be changing qualities as their skills and conceptualisations develop and evolve in contact with the world around them In addition to characteristic roles, the narratives are also connected to characteristic actions. Canter adapted Parsons' action system, which attempted to model social and psychological processes as systems of interactions, and redefined the four modes of action in the criminal context (Canter & Youngs, 2010). He presented these as different forms of criminal style, either being more individualistic, expressive modes that originate from within the offender (Expressive and Integrative) or interpersonal, instrumental modes that are a response to factors in the environment (Adaptive and Conservative). ? The Expressive mode targets others as a form of individualistic expression, typically hostile in nature. ? The Integrative mode is individually focused with expressive elements and involves pseudo-intimate interaction with the victim. ? The Adaptive mode is interpersonal and instrumental, in which the offender seeks to gain directly from the world. ? The Conservative mode is also interpersonal and instrumental, but involves the manipulation of others. Canter and Youngs (2010) proposed that the inner narratives of serial murderers could be understood as elaborations of these action system modes, and presented a Narrative as Action System (NAS) model of four styles of offending in terms of key role and personal narrative. ? Victim's integrative irony - the key criminal role assigned within this narrative is the victim and the mode of functioning required is integrative. ? Hero's expressive quest - the key criminal role is the hero and mode of functioning required is expressive. ? Professional's adaptive adventure - the key criminal role is the professional and the mode of functioning required is adaptive. ? Revenger's conservative tragedy - the key criminal role is the revenger and the mode of functioning required is conservative. We all have inner narratives that we play out as a life story (Canter, 2007), but for the serial murderer, those fantasies and private thoughts serve to maintain the myth that their victims (who they have dehumanised) deserve to die and thus are willing to torture and murder in the process. Their inner narratives may even serve as a justification for their behaviour, leading them to believe that they are not really criminals and may help them to overcome the forces of conscience and neutralise the devastating consequences of their actions (Canter & Youngs, 2010). Levin and Fox (2008) argue that the psychological processes underlying the sadism of serial murderers is not all that dissimilar to the average human being and that at least some of them do not require a diagnosis of antisocial personality disorder to murder with such moral disregard. They suggest that the ability to manipulate and manage the impression one wishes to make on others is a shared human trait. Levin and Fox (2008:13) state, "This does not mean that the psyche of the serial murderer is like that of normal people, only that we have been looking in the wrong place for the important differences". Continued research into understanding the inner narratives of local serial murderers is worthwhile as it may offer clues regarding the geographical areas that the offender frequents and the kind of offenses for which the offender may have been previously convicted. The narrative script may also well relate to his daily and social relationship interactions, but perhaps far less intently (Canter & Youngs, 2010). Within South Africa, and according to the SAPS Psychologically Motivated Crimes Course Manual, local serial murderers tend to have narratives with a sexual theme, usually expressed in the form of indecent/sexual assault or rape of the victim. The primary theme in such serial murder is the expression of violence and control through sexuality (Canter, 1994; Egger, 1997; Wilson et al., 1997; Muller, 2000) and it is the very pain and suffering of the victim that is so arousing and sexually satisfying for the offender (Yarvis, 1995). For Egger (1997), serial rape and serial murder are essentially similar since violent rape can graduate into murder very easily. Canter and Youngs (2010) offer a description of how sexual behaviour may fit in to the offender narrative: ? The Revenger who sees himself as tragically forced to pay back, will use his victim as a vehicle for his rage and thus he will seek restitution with violent and vindictive sexual acts. ? The Hero uses his victim object as a representative of a wider possible set of victim objects, and must simply control the victim to gain sexual gratification. ? The Victim and the Professional contrast sharply to the previous expressive modes, operating in an integrative sexual capacity and for them, the actual victim as a person has significance. Canter and Youngs (2010:194) state that "the implicit narrative that energises the criminal's activity needs to be a more integral part of how we explore and understand the geography of criminality. This is one direction in which future research will undoubtedly develop". 3.3.4.2 Victim roles. Criminology has traditionally focused upon the offender and has thus tended to ignore the other important component of crime - the victim (Rossmo, 1995b). People and places come together in a meaningful interaction which creates crime potential, and the coincidental interaction of offender and victim at a particular time and point (Canter, 2007). It was said that the dot on the map is more than a dot and that it forms part of the offender's journey. The dot also represents a significant joining of the habits of two people: perpetrator and victim (Canter, 2000b). Because of their lifestyles and routines, some people are at a far greater risk for being targeted (Cohen & Felson, 2010). Routine activity theorists have categorised victimisation-risk factors into five broad groups: demographics, social activities, alcohol and drug use, economic status, and community structures. Research supports the lifestyle theory of explanation for violent victimisation and how particular risky behaviours can predispose the exposure of people to violent situations (Gabor & Mata, 2004; Logan, Walker, Jordan & Leukefeld, 2006; Gatez, 2004; Gover, 2004; Gouvis, 2002). Gender is a classic example of this as it bears a consistent relationship to crime behaviour as offender or victim: men are just far more criminal in their

behaviour than women are. Further research regarding demographic influence is required, as well as more precise measures of the lifestyles that place people at increased risk of victimisation. In so doing, routine activity theory could inform improved efforts in crime prevention (Cohen & Felson, 2010; Mustaine & Tewksbury, 1997). Serial murderers in South Africa tend to be consistent in terms of their victimology across their series, 40% having mixed race victims while 34% have mixed genders (Labuschagne, 2006b). In the SAPS, victim profiling information is gathered from various sources such as personal records, interviews, crime scenes and autopsies, and forms part of the offender profile as compiled by the Investigative Psychology Section. In their comparative serial murder study between South Africa and USA, Salfati et al. (2015b) reported that most victims in both countries are reported to be young adult females. However, as was the case with their respective offenders, most victims in South Africa were Black, while USA victims were mostly White. This is probably due to the overall population race differences between the countries (Statistics South Africa, 2015). The high number of vulnerable victims constituted prostitutes in the USA, while unemployed individuals in the South African sample commonly travel great distances from their residences in search of employment, their whereabouts often unknown to their family members, and therefore much time passes before it is realised that they are missing. When investigating serial murder, using the victim as a starting point proves to be difficult. Alternatively, and working inwards instead, an attempt is made to establish a link between the victim and potential suspects (Rossmo, 1995b), recognising that victim characteristics potentially indicate likely offender characteristics (Santtila, Runtti & Mokros, 2004). Identifying the characteristic personalities and behaviours of potential victims who are targeted by particular kinds of offenders, reduces their target risk (Hickey 2002). This is most useful in serial murder cases as victim selection reflects something of the offender' s motive. Canter and Youngs (2010) suggest that the overriding differences between offenses lie in the style of offender-victim interpersonal interaction. For them, serial murder is less about expressing a compulsion but better understood as a distorted form of interaction. The offender's actions typify who they are and the treatment of the victim typifies who he has manipulated or bullied them to be (Canter, 2007). In addition to the roles that the offender assigns to himself, it is then also of interest the roles he assigns to his victims, who are coerced to be fellow players within his unfolding, dangerous drama. Pistorius (2000:26) puts it thus: We are all heroes in our own fantasies where we can control every event and even manipulate other role-players' emotions and dialogue. The difference is that serial killers act out their fantasies. They have no conscience to inhibit them. Thus, inner narratives are best understood concerning offender- victim interaction, using the victim as a significant tool in expressing that story. Variations in offending intensity are revealed by the different levels of victim dehumanisation and destruction and will reflect one/both of the two main needs regarding how violent men relate to their victims: the need to relate and the need to dominate (Canter, 2000b). This is demonstrated by the type of contact with the victim, which illustrates his objective and level of intimacy distortion, and the degree of power and aggression, which shows how he acts to control his victim. Canter (1995) offered an interpersonal model in which a serial murderer will usually express these needs by assigning one of three roles to his victim during a crime: vehicle, object, and person. These victim roles emerge out of the broader narratives and may manifest as styles of serial murder offending. The victim 'tells the story' even post death. In extreme attacks, the total depersonalisation may be achieved through assaults on parts of the body associated more with identity, such as the face and genitals (Canter & Youngs, 2010). The suggested three styles of general interaction link to patterns of mutilation; frenzied attack; and personal involvement, based on distinct subsets of behaviour (Canter & Youngs, 2010) that have to do with mutilating and exploiting the body post mortem, stylised or "dramatic" positioning of the corpse, sexual assault, overkill, torture, missing body parts, necrophilia, cannibalism and souvenir collection like hacking (Kocsis et al., 1998; Canter & Youngs, 2010). These are most clearly seen as the acts become more intense, and apart from stranger victim, can give information to the investigators that they are in fact dealing with a serial murderer (Kocsis et al., 1998). The offenders' narrative roles are linked to accompanying victim roles and since sexual components are commonplace within South Africa, this aspect will also be included: The irony victim offender, desperately seeking some sort of intimacy, assigns a person role to his victim as he ventures to create a pseudo-relationship. Victim as person is seen as someone with thoughts and feelings and is important in the criminal's formulation of meaning and are the closest to normal of all three categories. There is some recognition of the person's humanity or identity and they may talk to victim or even ask personal questions. The mouth may be used, amongst other means, as a distorted form of intimacy within their skewed view of the relationship with the victim (bite marks, facial disfigurement). There may also be the covering or redressing of the body post mortem. The irony victim offender rapes his victim as a form of recreation and sees this somehow as a customary form of behaviour between himself and the victim (Canter, 1994). The professional adventure offender, as part of his focus on control and competent mastery, assigns an object role to the victim who will be used and controlled through threats. Victim as object is evidenced by a lack of empathy for or interest in the victim. He does not try to see reality from the victim's perspective. He can be out of touch with reality, living in his own grotesque fantasy word, and sustains no normal human relationships. The victim is simply there to be played with and this may involve bizarre sexuality; mutilation, dismemberment, cannibalism post mortem as well as keeping body parts as mementos. The heroic quest and revenger tragedy offenders differ in how their victims are used as a vehicle for their own emotional goals and expression of rage and desires. They recognise the humanity of their victims, who are there to fulfil a purpose or bear a load. This usually includes extreme violence and abusive methods that exceed what is required to control the victim, such as torture, binding, use of props, bludgeoning and/or beating. The victim's reactions to the suffering are fundamental to the crime and thus, the behaviours are executed while the person is still alive. For the revenger tragedy, the victim plays a symbolic role as the target for his fury and revenge while the victim of the heroic quest is just part of the bigger heroic mission and a vehicle for his desires. He may be called a psychopath or sociopath, manipulates, and can recognise what empathy may mean but does not experience it. Such offenders tend to have more stable backgrounds than those who use victims as an object. Sadistic sexual behaviour will be brutal and punishing to the victim, not just sexually gratifying to the offender. This model of the three assigned roles is supported by Hodge's study of 88 US serial murderers (as cited in Canter, 2000a). Accordingly, one cluster of victims had been objectified, with the crime scenes often containing evidence of necrophilic activity, mutilation of the body, and no indicators that the victim was of emotional significance to the offender. Another cluster of victims appeared to have been treated as a vehicle and often were held captive, and subjected to excessively violent acts and extended brutality. The victims in the final group were treated as persons with whom the offender attempted to develop a relationship. These crimes included actions such as sexual intercourse, re- dressing of the victim after the assault, and an apparent personal interest in the victim that went beyond the body. Hodge's findings reveal that there may indeed be similar underlying themes in serial offending behaviour to help discriminate offenders (Woodworth & Porter, 1999:251). More recently, Horning et al. (2015) also examined the utility of Canter's interpersonal model in distinguishing 33 South African serial murderers according to how they view the function of their victims. Their multidimensional scaling analysis appeared not to show that local offenders have pseudo-intimate encounters with their victim (person) but 85.7% of the total sample strongly corresponded to two of the three victim types: object and vehicle. According to the authors, this supports the notion that a twofold version of the model (Victim as Vehicle or Victim as Object) is an accurate representation of South African serial murderers. For linkage benefit, Salfati et al. (2015a) used the Victim as Object/Vehicle model to test the displayed behavioural consistency of offenders across their series, and concluded that this is influenced by the level of interaction with their victims. The Victim as Vehicle theme was found to be the more consistently used overall. About power and control, this involved targeting and dominating vulnerable victims (minors, sex workers and women in search of employment), and having extensive interaction with them. Most victims were ensnared with a con/lure approach. This may include the assurance of employment, a pseudo-romance, or some other false allegation that serves to secure the victim's trust to accompany them. Interestingly, it was found that this theme started to decrease after the first three crimes and that these offenders had fewer victims than their Victim as Object counterparts. Salfati et al. (2015a) suggested that they may have been more rapidly apprehended because of the high risk involved in extensive interaction with their victims, which may account for the theme's diminishing use as the series continued. Those offenders who treated their victims as objects had less general consistency across the first few murders but they began to regularly use the theme as

they continued with their series. Victims were depersonalised and there was minimal offender-victim interaction, both before and during the offense. This necessitated a surprise or blitz attack, where the offender lurked and had little dialogue before the attack or immediately began attacking. Motives may have been for more tangible financial gain or for enhanced status. For Pistorius (2000), the blitz attacker lacks the confidence to charm his victim into accompanying him, preferring to attack the unsuspecting victim from behind instead. G. Labuschagne disagrees, stating that this has more to do with what the perpetrator wants out of the attack (personal communication, 13 July, 2015). Salfati et al. (2015a) suggested that single male victims, or males as part of a couple, fall within this Victim as Object theme as they may be viewed as being tougher to overpower, needing to be subdued far quicker and thus have limited interaction. Robbing a man of his money or his female partner, may be the offender's way of increasing his own sense of masculinity. It was concluded that offenders who consistently focused on the interaction with the victim generally change pattern, whereas those who did not engage with victims, don't. Hence, changing patterns might suggest that the offender's needs have shifted. For Morton and Hilts (2005), victims are selected because of their vulnerability and desirability regardless of offenders' intended interactions with them. However, they add that these are influenced by a third aspect: availability. The lifestyles of victims render them accessible to offenders. In addition to these factors, Canter (2000b) says that we need to look beyond the offender-victim interaction and examine the relationship between the victim and the crime setting. The victim means something to the offender. The crime setting means something to the victim. 3.3.4.3 Offender/victim environment. For Canter (2007:9), when asking why victims are falling prey, "the answer has to be not who they are, but where they are". The roles that are central to the offender narrative do not happen in isolation. The physical world forms the context and stage for the drama. Like all cognition, criminal cognition is socially situated (Canter & Youngs, 2010). Weisburd (as cited in Rossmo, 2000) has argued that more effective crime prevention and control would exist with a shift in focus from individual offenders to specific places. "For any crime to occur there must have been an intersection in both time and place between the offender and victim. How did this come to happen?" (Rossmo, 1995b:217). Why are they in the same context at the same time? If such meetings occur between people in predictable ways, it may be possible to say something about the offender based on the context. As partly already presented, there are multiple factors influencing the location choices of serial murders (Brantingham & Brantingham, 1995; Canter, 1977; Rossmo, 2000; Canter, 2007; Canter & Youngs, 2010) and these include: domocentricity; routine activities and mental maps; crime locations as the settings for offender narratives and victim activity spaces; target backcloth; nodes and the pathways that connect them; temporal changes; physical and mental barriers; time of day; and body disposal sites. (i) Domocentricity. Domocentricity was discussed earlier, reflecting that the home or anchor point of the serial murderer shapes the geographical range of his activities. Based on their study of 79 USA serial offenders, Coffey and Canter (2000) found that more than 50% percent of the offenders resided within a mere twentieth of the area defined by their crimes. The FBI considers the first crime of the series to be the one most likely committed closely to the anchor point (Rossmo, 2000). The home is of profound personal significance for some serial murderers. It can be their launchpad, their haven to return to, the very reason for doing what they do and also where they actually murder (Canter, 2007). It may be the heart of the plot from which the criminal sets out and returns or it may be the final destination itself. Like a leopard, Jeffrey Dahmer brought his prey into his den house, and finished them off there, as it was a "place where I could feel at home" (Canter, 2007:84). In addition, though it may be that offenders have a preferred ideal victim, their blood lust precludes any prolonged delay in acting out these urges and therefore they will ultimately be forced to settle for the victim most readily available and hence they will operate close by. (ii) Routine activities and mental maps. To summarise briefly, the idea that the serial murderer will offend in his most familiar areas because his mental map of a physical region is part of his inner narrative (Canter, 2000b), has been a tested and supported hypothesis (Godwin &Canter, 1997; Holmes & Holmes, 2002). Sometimes this base moves or is further away from the residential area, as is observed within the South African context. Canter and Youngs (2010) emphasise the value of using drawn maps to determine any distortions that the offender would be influenced by and how these shape his geography. (iii) Crime locations: settings for offender narratives and victim activity spaces. Canter maintains that the crime locations are the settings for the offenders' personal narratives. The different forms of criminal dramas are there to be seen in the maps of their murders and he challenges that we need to learn how to read them. The range of the serial murderer's journey typifies him (Canter, 2007). In addition, the crime locations (the encounter site at least) are the victims' activity spaces and thus will have meaning for the victims. Both come together in that significant dot on the map. Essentially, if the serial murderer is to derive satisfaction in telling his story, he needs an opportunity to find an available victim coupled with little chance of detection. Rhodes and Conly (2008) refer to target attractiveness (high gains) and spatial attractiveness (low prospect of apprehension), stating that areas with high appeal in both can expect high levels of victimisation, while this would be reduced in areas with only one. (iv) Target backcloth. The first challenge is thus locating suitable victim hunting grounds. These are important as they influence the distance between anchor points and where the crimes occur as well as influencing the proximity of the other sites. In turn, the hunting grounds are affected by the target backcloth. Target backcloth is determined by the geographic and temporal distributions of suitable targets. What kinds of victims, as well as where they might be available, play a role. Serial murderers who specifically target certain types of victims (Holmes & De Burger, 1988), who are not equally distributed throughout space, will have locations of attack that are more influenced by the victims' lifestyle locations than by their own activity spaces. (v) Nodes and pathways. The awareness spaces of offenders, their mental maps, and the target backcloth are all affected by the physical environment, both natural and constructed. People move and meet in space. It has been suggested that these spaces are essentially nodal bases that are centred at home, work, shopping or areas of recreation as well as along the pathways that connect them (Brantingham & Brantingham, 1981). To move one needs a network and to meet one needs a node. People congregate and meet at nodes and then disperse in several directions as determined by networks flowing to and from the node. Brantingham and Brantingham state that nodes are crime generators (high traffic areas such as railway stations and shopping malls), where crime is a by-product due to opportunities) and attractors (such as red light districts and drug markets), which lures the criminal to these locations. They suggest that we might therefore expect criminal activity to be concentrated at these nodes - hotspots - or to be linear and stretched out along the transport pathways that connect them. Rossmo (2000) says that these spaces that are rich in potential targets are called fishing holes and along street section are known as a trap line. For Newman (1996), space is organised as follows: ? Public space such as streets or railway stations; ? Semi-public space such as an unfenced front yard, which is now becoming rare in South Africa (Schmitz, 2004); ? Semi-private space such as a back yard that is fenced in; and ? Private space, which is a person's house. In his Defensible Space theory, Newman (1996) proposed elements that increase neighbourhood safety and minimise crime potential. There is a ranking of safety within areas that influences the offender and as he moves through these, he is progressively increasing his risk: public space (street) to semi-public space (unfenced front yard) to semi private space (fenced backyard) to private space (house). Consequently, offenders prefer victims who are not too far into private space and who remain close to escape routes. Places where strangers are common, such as along edges of areas (actual or perceptual) are popular as people travel along these unnoticed. High crime rates are associated with the anonymity that these zones of transition offer. The risk to criminal increases with the shift from public to private places and to minimise the risk, the criminal looks for additional information such as accessibility to the place and escape routes. (vi) Temporal changes. The fear of detection can lead to temporal changes in the geography of the serial murderer. Lundrigan and Canter (2001a) found that adjacent crimes in a murder series were further apart than alternate ones, suggesting that offenders keep away from their previous offense site. They may even move further away for a few of their offenses before returning to the original zone. In addition to learning and other gained information by the offender (Rossmo, 2000), crime sites may also change in order and location due to routine activity changes. The serial murderer may change jobs or go on holiday (Canter & Youngs, 2010). Furthermore, his own maturation and increased skill as a criminal may increase his confidence to shift his locations a little further afield. (vii) Physical and mental barriers. For Canter (2007), individual sites and their relationship to one another are also determined by the physical and mental barriers of the geographical terrain (such as a railway track or busy road). The order of the murders

is important as it may show a pattern and a reason for that pattern. Did he begin in a cluster area and then move away from it, for fear of apprehension or because of limited opportunities? Did he return closer to the site of the first crime scene again since moving too far out of the area would be unfamiliar and uncomfortable for him? Mental buffers are useful for showing how their environment takes on symbolic and emotional relevance. Geographical features can have a distorting influence (Canter, 1977) and crossing boundaries can be seen as a longer journey than one that does not cross boundaries (Baker & Donnelly, 1986). In his mind, the serial murderer can think of a physical barrier, such as a main road, as a buffer that hides him. (viii) Time of day. Some locations for crime are also influenced by the time of day as their desirability has to do with the flow of human traffic, for example shopping areas or routes used by females commuting to work. The serial murderer must return to some base afterwards, so taking the time of the murder into account is also important. Canter (2007) cites some examples of how the time of the murder may reveal additional information. Crimes committed later at night may suggest that the offender is further from his base, since he had to travel further to locate a victim. Another possibility is that it may be his first crime or he was nervous, thus taking time to pluck up the courage. Crimes committed first thing in the morning, at a time when people are going to work, may suggest the possibility that the offender lives nearby since he commits the crime as he is also leaving or returning home. (ix) Body disposal site. It was mentioned that the body disposal site is the location from which most information is generated by the investigators. In their US study, Kraemer, Lord and Heilbrun (2004) found that serial murderers were more inclined to use multiple sites for their crimes and to dispose of the body in a separate location to the murder. Because of the increased risk of being seen, offenders are most vulnerable when performing victim body disposals (Holmes & Holmes, 1998). The site is of particular significance, as it can give insight into the relationship between the perpetrator and his victim as well as possibly reveal the offender's level of experience. This is because of the proposal that offenders who relocate victim bodies from the crime scene and dispose of them have experience (Fox & Levin 1994; Rossmo 2000). However, recent research by Labuschagne and Salfati (2015) has challenged this assumption. Research into the offender home -to-crime-to-body disposal of site distance patterns suggest that the serial murderer domain covers a relatively small area and that the selected sites for body disposal indicate deliberate and purposeful spatial decisions of these offenders (Godwin & Canter, 1997; Häkkänen, Hurme & Liukkonen, 2008; Lundrigan & Canter, 2001a; Lundrigan & Canter, 2001b; Nethery 2004; Snook, Cullen, Mokros & Harbort, 2005; Keppel, 1997). In their examination of the body disposal sites of 126 USA and 29 UK serial murderers, Lundrigan and Canter (2001b) found evidence to support four hypotheses regarding the logic, non-randomness, behind their choices. Their criminal domains were around their homes; they had a domain size characteristic of each offender (relatively smaller for the marauder because of the influence of home); the distribution was found to be biased towards other non-criminal activities; and the sizes of their domains increased over time. They proposed that possibly earlier in his career, the offender is led by routine activities but as time progresses and he becomes more committed to this type of crime; he may start making more rational choices regarding where to dispose of the body. Typologies have been produced that highlight the different domain sizes of different serial murderers, However, Lundrigan and Canter (2001a) state that these do little to explain what determines their sizes. They propose a pairing up of the two crime theories, routine activity and rational choice, to the models of offending, marauders and travellers, to describe the disposal patterns of serial murderers. The rational choice would be to travel to an area where the perceived benefits outweighed the risks, while routine activities would predispose the offender to a marauding style, disposing of the body somewhere along the route from his residential base. It would seem that certain types of victims may also influence body disposal patterns. For example, Hanfland, Keppel and Weis (1997) found that offenders who abduct children are more inclined to hide the bodies of their young victims whereas body concealment is less prevalent in the sexual murders of women (Beauregard & Field, 2008; Kocsis et al., 2002a). In addition, the geographic make-up of the ground especially, may play a role. In Finland for instance, Häkkänen et al. (2008) found that many serial murderers in their wooded areas, put extra effort into hiding the bodies by either covering the bodies with snow, when in the woods, or placing weights on the body when disposing of it in water. They state that burying a victim in the ground in Finland, requires substantial physical effort and more often it was a matter of the offender hurriedly throwing something on the body. There are multiple types of crime sites that may be found in a murder series (Rossmo, 1993) but the main four, as classified by Rossmo (2000), are: ? E – Encounter site is where the victim's and criminal's activity space intersects and the criminal determines that the target is suited to his needs. ? A – Attack site is where the victim is attacked for the first time and it may be different from the encounter site. The murderer follows or lures his victim to a suitable low-risk and mostly predetermined area in order to attack the victim. ? M – Murder site is the location where the murder of the victim occurs and is also mostly predetermined by the serial offender. ? D – Disposal site is where the body is dumped after the murder and is the site from which most information is generated by the investigating officer. The E, A, M and D sites can be arranged in variable order and location, due to learning and other information gained by the serial murderer during his series: E, A, M, D - all occur at the same place. E – A, M, D -. after the encounter, the remaining three sites are relocated elsewhere. E – A, M – D - after the encounter, the attack and murder occur elsewhere, followed by body disposal at a third location. E – A – M, D - after the encounter, the attack occurs elsewhere, followed by the murder and body disposal at a third location. E, A – M, D - after the encounter and the attack, the murder and body disposal occur at another location. E, A, M – D - after the encounter, attack and murder, the body is moved and disposed of at another location. E – A – M – D, all four happened at different locations. For Salfati et al. (2015a), planning in South Africa is vastly different from planning in the US. Firstly, serial murders in South Africa are bound to occur outside in fields, plantations or rural areas, rather than in the predominantly urban locales of the USA. The most prevalent site at which the victim's body was discovered (and frequently murdered) was a secluded one, indicating that the perpetrator was either seeking alone time with his victim or to be hidden and undetected. Salfati et al. (2015a) maintain that remote spaces are more attainable in South Africa and that local offenders are taking advantage of their particular cultural landscape. Consequently, there is less planning required to conceal a crime or to avert apprehension since the natural environment, and its animal predation and high temperatures, make it difficult to find a body or to gather forensic evidence like fingerprints (Salfati et al., 2015a). Secondly, local serial murderers seldom own or readily have access to vehicles, thus requiring them to lure their victims to a predetermined area and disposing of them there too. Hence, unlike their US counterparts who apprehend, murder and dispose of the body in three separate locales, local serial murders tend to use two locations: one to meet the victim and the other to murder and dispose of the victim. Of the South African victims in the sample, 93% were discovered at the murder site (Salfati et al., 2015a). The South African serial murderer generally takes his victim to a secluded area while the person is still alive and therefore does not incur the risk of spending unnecessary time transporting or burying a corpse (Salfati et al., 2015a). Therefore, since South African offenders complete their planning prior to the murder, with the body already positioned at the isolated disposal site, Sorochinski et al. (2015) found that the pre-offence planning was evident (and modified with learning) in the sample, while there was almost no post-offence planning. Isolated spaces seemed to be the areas of choice within the Victim as Vehicle theme, which was the dominant approach and occupied two thirds of the sample. Male victims within the Victim as Object theme, on the other hand, were often attacked in public view or sometimes their homes, indicative of the offender's intent to spend brief moments with them. This approach is less practical in South Africa because people living in informal settlements usually share a shack with many other people, and they are also commonly built in close proximity to one another. Furthermore, suburban people have high security consciousness because of the crime rate in the country which makes gaining access to their homes quite arduous. Hence for Salfati et al. (2015a), if a South African offender went about his crimes the way USA serial murderers do, he would probably be apprehended quite rapidly. In summary, since the spatial distribution of any given serial offender's crimes have important bearing on where the offender is based, both physically and mentally, it follows that a successful investigator would need to align his tracking strategy to one that represents the criminal's psychological and geographical journey. As Canter (2007:23) puts it, "the success of the detective depends on how well he shapes his mental map and his hunting strategy to match that of his prey, the criminal". 3.4 Conclusion Canter (1977:13) had generally observed that the ways in which we conceptualise places form an integral part of our interactions with them". Geographical profiling aims to provide an understanding

specifically of how the offender thinks about his context, based on the crime location. In the case of serial murder, where there are multiple crimes that can be linked to a common offender, this can be challenging, especially when there is little forensic evidence (Canter & Youngs, 2008a). A significant implication from geographical profiling is that if crimes are committed closely to one another, they may well have been perpetrated by the same individual. Canter and Youngs (2008a:11) state that "there is growing evidence that rather than rely on linking crimes before carrying out geographical profiling, the actual geographical analysis itself could help to link the crimes". Literature on offender mobility gains information from two sources. The one is by quantitatively measuring the distance from the crime site to the offender's residence. The second is by the qualitative interviewing of offenders to glean further information regarding their movements (Gabor & Gottheil, 2008). Getting into the mind of a serial murderer is not simple though. These offenders may struggle to express their inner experiences and they themselves are confused and skewed in how they view their world and what they do therein. In addition, they may also skew their stories deliberately according to the inner narrative or purpose for which they believe it must exist. The told story may be different from the reality. In addition to their common psychopathic lack of guilt or remorse (Hare, 1999; American Psychiatric Association, 2013), these distortions of truth may also explain how they live with themselves for so long (Canter, 2007). It is worthwhile, however, to take the opportunity to ask them directly about their experiences and their location choices if we are to gain additional insight. The continued development and contribution of Geographical Profiling to serial murder investigation relies on an increased understanding of these offenders' psychological processes about and response to places. In South Africa, unlike media coverage in other parts of the world, the information pertaining to unsolved cases is released to the public in the hopes of gaining additional helpful information (G. Labuschagne, personal communication, 10 March, 2011). The challenge to the police is not to be side-tracked with an overload of information, but to focus on the details of the particular case while also working from some general, researched principles. For Salfati et al. (2015a), the issues of linkage and consistency (whether patterns can be identified on the premise of altering characteristics as the crime series progresses) requires far more research in South Africa and they suggest that the inclusion of offender interviews would be beneficial to this end. There's Method in the Murderous Madness CHAPTER IV METHODOLOGY This study was a descriptive study which included literature as well as the data available from police reports and interviews with serial offenders. This research was conducted in the Division of Forensic Medicine and Pathology of the Faculty of Health Sciences of the University of the Witwatersrand with the Investigative Psychology Section of the South African Police Service. As proposed by Smith (1995), this chapter includes the following in outlining how this study was conducted: a summary of the rationale; how the schedule was constructed, the sample selection procedure and the measuring instruments used in the assimilation and analysis of the research data. The interview schedule will be featured in the Appendix. First, however, a brief discussion regarding what constitutes effective qualitative research. 4.1 Qualitative Research Pratt (1980:5) defines research methodology as "a deliberate process of devising, planning and selecting the elements, techniques and procedures that constitute some object or endeavour". Thomas (as cited in Nel & Nel, 1993) states that: "making interventions without a methodology is like making bridges without mechanical engineering or creating computers without electrical engineering". Research methodology has to do then with reaching a product by performing a series of operational steps where relevant data is transformed (Pratt, 1980). Investigative psychology's six assumptions that underpin its approach to research (Canter & Youngs, 2010) and Willig's (2008) proposed aspects of what constitutes good qualitative research have been used to guide the research process in this study. Willig (2008) addresses the important aspects of validity, reliability and representativeness. Validity is the extent to which we can ensure that our data collection really addresses the question we want to answer. It has been argued that receiving some feedback from participants on the study's findings, if these make sense to the participants, must at least have some validity. Furthermore, the interviews are happening in the real world (at correctional centres) and there is thus no need to extrapolate from an artificial setting to the real world, hence higher ecological validity. Reliability asks whether the measurement is reliable, in that it produces the same result in different instances. For Willig (2008), this is less of a concern in qualitative research because there is the aim to explore particular even unique phenomena in great detail and thus is not measuring attributes in large samples of people. Representativeness refers to the aim that the sample represents a population group of offenders but not necessarily the broader population. For Haug, though we cannot generalise from small samples, it could be argued that "if a given experience is possible, it is also subject to universalisation" (as cited in Willig, 2008:17). The aim is to integrate the findings of a number of comparable studies such that wider conclusions can be drawn. For Willig (2008:59-62), there are three epistemological questions in qualitative research: 1. "What kind of knowledge does it aim to produce? 2. What assumptions does the method make about the world? 3. How does the method conceptualise the role of the researcher?" For Willig (2008), it is vital that the research task be clarified and that it is established whether the research aims to produce descriptions or explanations? There is an importance of fit and the researcher should write explicit and comprehensive accounts of why phenomena have been labeled and categorised in particular ways. Is the research being done to develop a general understanding or insight into a specific instance or case? There should be an integration of theory, showing the relationships between units of analysis and making the different levels of generality readily apparent. The research should constantly seek to extend and modify the emerging theory, and it should view negative case analysis (where cases do not apply) as likely to generate new insights. Situating the sample and describing the backgrounds of participants, allows the reader to assess the relevance and applicability of the findings. Ultimately, the analyses of the knowledge gained should be integrated and coherent (Willig, 2008). Investigative Psychology has six assumptions that underpin its approach to research (Canter & Youngs, 2010). The first has to do with the researcher and will be mentioned in the following paragraph. Secondly, data speaks theories. A set of data forms only the beginning of generating more theories, to achieve a broader comprehension of the problem. The third assumption is that theories are practical. Research must aspire to making the theory applicable to the solving of the problem. The fourth assumption is that "a place in space and time" provide meaning for the person experiencing it (Canter & Youngs, 2010:421). The artificiality of laboratories makes it difficult to explore and understand how individuals make meaning of their surroundings. Thus, the social aspects of context are fundamental. Willig (2008) refers to transferability, where the contextual features of the study should be reported so that readers can explore the extent to which the study may or may not have applicability to other contexts. The fifth assumption of Investigative Psychology is that structures explain. This refers to the notion that the meanings people assign to their behaviour can be ascertained by examining the patterns of their co-occurrence. These vary within individuals and correlations can be summarised as general trends across individuals. Finally, the sixth assumption is that "all methodologies assume, but some assume more than others" in that "what we are able to find out about people depends on the way we approach how we will find that out" (Canter & Youngs, 2010:424). This demonstrates the important self-reflective nature of the Investigative Psychology approach. Reflexivity refers to the importance of acknowledging the role of the researcher in the documenting of the research (Willig, 2008). Investigative psychology's first assumption is that researchers have styles. These are neither right nor wrong, but do require flexibility if they are to be used effectively and as a natural part of the problem being studied (Canter & Youngs, 2010). For Willig (2008), acknowledging that the researcher is instrumental in the construction of meaning for the duration of the research and that he or she cannot remain outside of the subject matter ensures that the methodology is constantly scrutinised and that the researcher reviews his or her role in the research. This discourages the researcher from imposing meanings and thus promotes validity. Essentially, reflexivity "involves the realization that the researcher is not a neutral observer, and is implicated in the construction of knowledge" (Gray, 2009:498). Keeping a personal diary or recording one's reflections, may assist to this end pragmatically. Owning one's perspective, disclosing one's own values or assumptions so that the reader can interpret the analysis and consider alternatives, may be another. Sensitivity to negotiated realities is also important such that the researcher is aware of the differences between participants' views and his or her own interpretations, and there are explanations for the differences (Willig, 2008). To this, Baron and Byrne (2000:8) add the awareness of confirmation bias, the strong preference to have one's views confirmed, "When it operates, it places us in a kind of closed cognitive system in which only evidence that confirms our existing views and beliefs get inside; other information is sometimes noticed but is

quickly rejected as false". Essentially confirmation bias is the tendency not to notice and remember information that challenges or refutes our views on something, for example a suspect. It is potentially prevalent in the subjectivity of profile interpretations as well as in its creation (Bartol & Bartol, 2008). Colaizzi (1978) advocates some steps regarding the management of confirmation bias. He recommends that through self- examination, researchers should bracket their presuppositions regarding the phenomenon to be studied and then design a brief unbiased statement or research question. Thereafter, researchers can engage in a structured interview with each participant and then transcribe the interviews verbatim. For Willig (2008), data collection methods need to minimise data reduction; that as little as possible is lost in translation from one medium to another. According to Smith, Flowers and Larkin (2009), qualitative research involves a double hermeneutic: the researcher is working to understand the participant (second-order) who is making sense of x (first-order), not to mention the imagined reader. "Perhaps this could be expanded to a triple hermeneutic by noting that the reader is trying to make sense of the researcher who is trying to make sense of the participant who is trying to make sense of their lived experience" (Mare, 2011:2). Therefore, proceeding with enthusiasm and humility is essential. 4.2 Rationale/Aim Environments allow offenders the opportunity to experience repeat interactions with their activity spaces which then enable their images of that space or place, to be developed into cognitive or mental maps. A central assumption in this study is based on Canter's (2007) postulation that there is a pattern of the evolution of crimes, that the unfolding inner narrative of the criminal is represented in his criminal geography. As Canter (2007) points out, plotting dots on maps is only part of the story of the offender's geography of crime. It fails to take other factors into account, such as major routes, land use patterns, crime opportunities, and particular victims being sought after. He asserts that endeavouring to understand more and more the thought processes of offenders about where to commit crimes, is the central issue of understanding their spatial behaviour. Unlike their overseas counterparts, serial murderers in South Africa tend to act in wide-ranging activity spaces and therefore, their crime locations will often be outside of or beyond the proposed "circle" area that encompasses their homes. Local research is thus required to develop our increased understanding of South African serial offenders' interactions with their physical environment, so that locations most probably linked to them can be better estimated and predicted. International research demonstrates that serial murderers tend to cluster their crimes and employ similar patterns of movement. The focus of this thesis is aimed at examining whether we can find this proposed consistency about the distances and distributions of crime site locations by serial offenders within the South African context and therefore establish that our local serial offenders also commit their crimes in patterned ways. A second focus will be given to the exploration and further understanding of how serial criminals view the domain around their base (whether home or otherwise) and how that base influences many criminals in the choice of what and where they do things: what does the serial criminal reveal about himself by where he commits the crime? The thesis analyses serial murderers' verbal descriptions and compares the crime maps of those whose coordinates have been recorded with their drawn mental maps. The aim is to further our understanding of how their inner psychological journeys drive and transform into their outward, physical, geographical criminal behaviours. 4.3 Justification of Research Methods Over the years, theories have developed regarding the relationship between humans and their environments. Boulding (1956) in particular emphasised the importance of individuals' (subjective) interpretation of their experiences which in turn determine their actions. Lynch (1960) then further explored these conceptual systems within the context of particular cities. He interviewed city dwellers and asked them about their experiences of their physical surroundings. Part of the interview involved asking the sample of city dwellers to sketch a map of their city and to describe in detail a number of trips through the city, highlighting those parts felt to be most distinctive in the individual's mind. The sketch map was considered very significant and a powerful metaphor for the subject's cognitions, a representation of the world that the individual believes to be true. Lynch thus concluded that mental facts could not be properly explored separately from the physical environments of which they take cognisance. Canter (1977), in his theoretical development of the psychology of place, stated that we need to understand how or what people think about places by capturing their experiences, recording and then measuring them. He refers to three approaches to acquiring people's responses to their activity spaces, their verbal descriptions (what they say), their sketched mental maps (what they do) and their distance estimations. Canter (1977) affirmed that maps are popular devices for the description of places but that they do not include people's feelings associated with those conceptions. He suggested that verbal descriptions are also important and for two reasons: they provide insight into how people evaluate places as well as the range and types of activity that they associate with those places. These evaluations and expectations are then linked to the behaviours deemed appropriate for them. Distance estimations are similar to sketched maps but allows researchers to explore people's conceptions of places numerically – the descriptions they give of places in terms of kilometres and time to travel, for example (Canter, 1977). These distance assessments of how far a place is or how long it will take to get there may or may not be offered as reasons for location choice by the sample of offenders in this research but, either way, they will fall under the verbal descriptions component of their semi-structured interviews. A popular and well-founded combination of two methods – semi- structured interviews and mental maps – was employed for this research (Lynch, 1960; Canter, 1977, Canter & Youngs, 2010). According to Willig (2008), semi-structured interviewing as a process of qualitative data collection is the most extensively used method in the field of psychology. Participants are not restricted in choosing from a range of preselected responses but are asked to give information regarding their opinions, beliefs, attitudes, feelings, and their own interpretations (Veitch & Arkkelin, 1995). Semi-structured interviews allow for an engaged dialogue between researcher and participant and in which the original questions are able to be modified as responses are given and the interview progresses (Smith et al., 2009). Semi-structured interviews also allow for the probing of views and opinions where the aim is to explore the participants' subjective meanings they ascribe, to concepts or events (Gray, 2009). They are "especially suitable where one is particularly interested in complexity or process or where an issue is controversial or personal" (Smith, 1995:10). The authors go on to say that what respondents say "is part of their ongoing self-story and represents a manifestation of their psychological world, and it is this psychological reality that one is interested in". Canter and Youngs (2010:215) argue that such open interviews are "far and away the most common source of information about what happened in a crime". Unlike with the structured interview, the semi- structured interviewer has a pre-set schedule of flexible questions that can guide rather than dictate the process. According to Smith (1995:15), "Good interview technique often involves a gentle nudge from the interviewer rather than being too explicit" and this flexible approach has the advantage of building a better rapport as well as the tendency to produce richer data. For Canter and Youngs (2010:219), it "offers a tidy framework for psychological research". The use of sketch maps and interviews then "provides much of the verbal, visual and numerical information of interest...it also gives details of the conceptualisation of places and their relationship to one another" (Canter, 1977:47). Measurement is the ladder that can take us from daily experience to systematic analysis. More recently, Canter (2000b) has referred to studies that have been conducted within this field of how different individuals' sketched maps of a particular area reveal the inner representations or mental maps that they possess of that area and that their accuracy reflects their familiarity with that area. Their distortions also provide clues as to the unique representations that are used as a reference when drawing mental maps. Our primary knowledge of a terrain is derived from where we spend most of our time, notably where we live and work. Therefore, the offender who is offending in a particular area is demonstrating something of his familiarity with that area. This familiarity may be a product of his actions but will often be influenced by the same limitations that all people face: where he has his base. In what Canter (2000b) refers to as the most thorough investigation of serial murderers thus far, criminologist Eric Hickey established that two thirds of the 63 serial murderers that he studied operated within an area close to where they resided. Canter (2000b:94) states: A carousel of influences holds these tendencies together. Where we go depends upon what we know to be available. What we know depends upon where we go. Over time, in an area we slowly evolve our understanding of what is where from the contacts we have. For even the most unorthodox offender, Canter (2000b) proposes that it may be that the same general geographical limitations are relevant. Looking at the spatial patterns of non-criminal activities then will enrich our models and theories of offender behaviours, since there are similar geographical patterns between the two, and thus there is much to be gained from the careful analysis of the activities of offenders across a map.

4.4 Ethical Considerations Ethical clearance for the research was obtained from the Human Research Ethics Committee (Medical) at the University of the Witwatersrand. There are five main ethical issues in this study: informed consent, no deception, the right to withdraw, debriefing and confidentiality (Willig, 2008). Informed consent from participants was gained, with explanations provided to them about the purpose of the research as well as what they could expect from the interview (such that accessible therapeutic support could be offered should the interviews create upset for them). The informed consent and explanation ensured that solely the cases the offenders were convicted of were discussed, as well as what could be expected likely outcomes from the data analysis. The participants were also informed of the right to withdraw their participation in the research at any time. In essence, the research should not cause any harm or loss to the participants but would also not lead to any benefits. They were assured that should they decide not to participate or to withdraw during the process, there would be no negative impact upon them. They were also informed of available resources in the Correctional Services environment, such as clinical psychologists that they could consult, should they become emotionally upset by discussing their offences. The researcher is also a registered psychologist and was able to assess if a participant appeared to be upset by some part of the interview process, and could advise accordingly. 4.5 Site of Study This study was conducted in the Division of Forensic Medicine and Pathology of the Faculty of Health Sciences of the University of the Witwatersrand, at the Johannesburg Forensic Pathology Service (FPS). The research was done in partnership with the Investigative Psychology Section (IPS) of the South African Police Service (SAPS). The Forensic Pathology Service is made available by the Department of Health (DOH) and the SAPS, its main activity being to carry out medico-legal death investigation, thus assisting in determining the cause of death in all unnatural death cases. The facility is based in Braamfontein, 25A Hospital Street adjacent to the old Wits Medical School building. With permission from the Department of Correctional Services (DCS), interviews of the prisoners were conducted at the following correctional centres across the country: Johannesburg, Leeuwkop, Boksburg, Modderbee, Kroonstad, Kutama-Sinthumele and Mangaung Maximum Security Correctional Centre. 4.6 Sample Selection Smith et al. (2009) explain that participants should be selected on the basis of their ability to grant us access to a particular perspective on the phenomena under question, that being that they represent a perspective rather than a population. As a rough guide, they would suggest that between three and six participants can be a reasonable sample size. A sample of fifteen of South Africa's incarcerated serial murderers was interviewed during the course of this study. Data was further obtained from SAPS case file records for these convicted offenders, specifically the GPS locations or maps of their areas of operation. The sample was a purposive sample. The geographical murder/body disposal site coordinates (built-up regions and veldt areas) were accurately plotted using GPS devices by the SAPS for eight of these offenders and were also examined. As pointed out by Canter and Youngs (2010), having precise crime points as opposed to vaguely recorded locations, is an advantage for research. Another challenge, however, is that the police may only have documented where the offender resided when arrested, and not necessarily during the commissioning of his crimes. A list of possible candidates in this category, including the specific correctional centres in which they are situated, was provided by the Investigative Psychology Section (IPS) of the SAPS as well as the Department of Correctional Services (DCS). The Area Commissioners, the Heads of the Medium or Maximum facilities, as well as the psychologists at the relevant correctional centres were then contacted to arrange a meeting with the identified offenders. The researcher explained the research at this meeting and requested their participation therein. Those who agreed, signed a letter of consent and retained a copy of this form, and were subsequently interviewed thereafter. A copy of this consent form can be found in the Appendix. 4.7 Measuring Instruments Measuring instruments included audio recorded semi-structured interviews that incorporated qualitative questionnaires and drawn mental maps, and the GPS coordinates of some of the offenders' crime series. A template of the semi-structured interview, including the questionnaire, is presented in the Appendix. 4.7.1 Semi-structured interviews. Only a small number of researchers, such as Wiles and Costello (2008), have sourced their data on serial offenders by interviewing them (Dowden et al., 2007:51). According to FBI Special Agent Douglas, Interview the subjects, what they'll tell you is, the thing that was really appealing to them was the hunt, the hunt and trying to look for the vulnerable victim (as cited in Rossmo, 1995a:24). The semi-structured interview will be employed to facilitate an interaction in which the offenders can tell their stories in their own words and which can then allow for the research question to be answered thereafter during analysis. Notably, it is not assumed that true accounts will be gained but that there is an aim to understand the offenders' perspectives and to take their views, claims and concerns seriously. The research is not about the offenders' explanations for what they did, or even how they committed their crimes. It concerns their geography, about which they could be assumed to have less reason to lie. It will be important to audio record the interviews, with their permission, to gain verbatim transcripts, including non-linguistic elements (pauses, interruptions, volume of speech, intonation). The formulated research question posed by Smith et al. (2009) - how do people in situation "Y" understand process "X"? – forms the basis of the essential question in this study: how do these serial offenders understand the geographical locations and journeys of their crimes? To improve validity, Arksey and Knight (1999) suggest using interview techniques that build rapport and trust, where participants are prompted to expand on their initial responses, where the interview is long enough to allow for deep exploration and where questions are derived from the literature. There are some other common research challenges. These include bias in the sampling; a lack of detail in data as well as possible issues related to deception. The efficiency of interviews for police, who are seeking a confession, is debatable (Canter & Youngs, 2010). According to these authors, research reveals that people generally lack the ability to detect deception and therefore, the police need to establish the plausibility of the accounts that they receive. Interviews may also be subject to bias, because of the offender's motive to grant the interview as well as his interpretation of the interviewer's role. Veitch and Arkkelin (1995) suggest various reasons for the potential bias created by interviewees. Some responses are driven by their desire to appear normal; some interviewees are faithful subjects and attempt to give the investigator what he/she wants even if there is partial fabrication or distortion of the truth; some are belligerent subjects who attempt to disrupt the research/data; while others are self- serving and guided by, "if I respond this way, maybe we'll get things done my way around here". One of the offenders approached for this research, for example, attempted to negotiate receiving a section transfer within the prison in exchange for granting the interview. This was denied and he subsequently declined participating in the research. The data is thus vulnerable, since interviewees may not tell the truth all the time. Furthermore, according to Canter and Youngs (2010), there is no index of deception that can be gained from the words or behaviour of a person during an interview. To improve reliability, Oppenheim (1992) suggests avoiding the following ways of creating bias: unnecessary departure from the interviewing instructions, poor maintenance of rapport, altering factual questions, rephrasing attitude questions, careless prompting, biased probing, asking questions out of sequence and the biased recording of verbatim answers. Smith et al. (2009) discourage disclosure in the interviewer, stating that this attempt to enter the other person's worldview can create some response bias. They suggest that perhaps it can be reserved for the end of the interview, after the participant has had the chance to express freely or during a debriefing session thereafter. Canter and Youngs (2010) suggest that obtaining a baseline in a first interview might enable one to detect a difference in the second interview. This is not the case with once-off interviews, as done in this study. Only brief telephonic follow-ups were made with each offender a couple of months after their interviews, essentially just to clarify their responses. It is important to note, however, that it is not assumed that 'true' accounts were necessarily gained from the interviews. Instead, the aim was to understand the offender's perspective and to take his views, claims and concerns seriously in respect of his crime scene geography. In the case of forgetfulness or non-purposeful inaccurate information, certain skills may be adopted to assist offenders in recalling and giving clear, truthful accounts. Canter and Youngs (2010) support the recommendations as suggested by Geiselman, Fisher, MacKinnon and Holland (1985) in their discussion on cognitive interviews. Geiselman et al. (1985) worked to structure these interviews in accordance with how the human brain retrieves its memories and their recommendations include: pausing after responses, not interrupting, encouraging complete concentration and the use of imagery, recreating the original context, adopting the point of view of the rememberer, as well as advocating for multiple retrieval attempts from the person being interviewed. Fortunately, the interviews in this study were not relying on memory in the sense of an eye witness to an event, but were relying more on long- term gained information

regarding habitual geographical areas and were thus possibly more likely to elicit dependable information. The PEACE procedure of interviewing, as outlined by Milne and Bull (1999), was used as a guide in this study: ? Preparation and planning ? Engaging and explaining the purpose of the interview ? Account – allowing free recall from the interviewee ? Clarification, challenging and concluding ? Evaluating new lines of enquiry Effective interviewing is fundamental if the maximum quality and amount of information is to be retrieved from the interviewee (Snook, Eastwood, Stinson, Tedeschini & House, 2010). 4.7.2 Verbal descriptions and drawn mental maps. Smith (1995) proposes four points to consider when creating a questionnaire that aims to elicit verbal descriptions: (1) think about the broad themes you want the semi-structured interview to cover, (2) prioritise or put in logical sequence the order in which the areas will be covered (leaving sensitive ones for later), (3) consider the most appropriate questions for each theme and sequence these too, and (4) consider some probes or prompts that could possibly follow from some of the questions. Questions should be open, expansive, non-assuming where the participant can provide quite a descriptive experience initially and can be invited to be more analytical as he/she eases into the interview. Smith et al. (2009) list some suitable kinds of questions, cautioning against manipulation and leading. For Gray (2009), wording and language that is appropriate to the participant's education level and culture are also important. He warns against using questions that: contain jargon, prejudicial language, are ambiguous, include double questions, contain hypothetical statements, and/or require memory or knowledge that the participant does not possess. He also cautions against probing personal or sensitive matters. However, in lieu of the nature of this research, the latter concern may be unavoidable. Smith et al. (2009) also propose that for adults, who are really articulate, a schedule that contains 6-10 open questions with possible additional prompts, may take 45-90 minutes of conversation. The semi-structured interview used in this research, comprised thirteen questions in total. Respondents were essentially requested to give descriptions of their movements during their crime series, especially when they moved from one cluster area to another, as well as why they selected these areas and if they had any association with them. These descriptions were guided by the series of questions, which are listed later in the chapter, and can also be found in the Appendix. Interviews were audio recorded to gain verbatim transcripts, including non-linguistic elements (pauses, interruptions, volume of speech, intonation etc.). The formulated research question posed by Smith et al. (2009) - how do people in situation "Y" understand process "X"? - forms the basis of the essential question in this study: how do these serial offenders understand the geographical locations and journeys of their crimes? Serial murderer Clifford Olson (as cited in Rossmo, 2000:26), offers an explanation on how victims and crime sites are selected: In cases a lot are just encountered by the serial offender who is hunting for the victim he needs. As for how are they stalked, approached, attacked, and trapped, each serial offenders has his own personal mode and manner of current style and fashion…the serial offender kills strangers 95 percent of the time because as the safest target in terms of avoiding detection… Children: young boys and girls are frequently desirable victims by the serial offender for sex…Most serial offenders have selected there murder scenes by the place they take there victims to: on the seasons, and were the serial offender is killing. For Canter and Youngs (2010:197), the "power of their [verbal descriptions and] narratives is revealed when asking offenders to draw sketch maps of where they have offended". Canter (2004a) thus suggested asking offenders to draw their mental maps of where they committed their crimes and indicate their residences. As previously described, the mental map is the internal representation of the places that the offender used and it comprises knowledge, feelings, familiarity, habitual paths as well as old unnoticed or forgotten experiences. By comparing the mental map to the physical map of the same region, the accuracies, deficiencies, emphasised features as well as omissions of the drawn mental map can offer some insight into the serial murderer's idiosyncratic world (Canter, 2007). While drawing a full, detailed map is an acquired skill, it would appear that people act as if they have maps in their heads "The significance of the sketch map lies in its power as a metaphor for what is in a person's head" (Canter, 1977:23). Mental maps provide a summary of a person's sequence of behaviour which in turn informs us about the person's internalised spatial structure from which that behaviour originates. So while mental maps cannot be observed directly, Spencer (1973) asserts that research has progressed under the assumption that because an individual behaves as if a mental map exists, it is worthy of investigation. This method assumes that the graphic output can reflect the individual's inner mental representation of space to at least a reasonable degree. The work of Blaut (1997) on children also demonstrates surprisingly skilled mapping behaviour which indicates that this form of representation, like drawings, has considerable significance. The mental maps that the interviewees will be requested to sketch are the internal representations of the places they use, the cognitive images that represent known geographical areas such as neighbourhoods and they comprise knowledge, feelings, familiarity, habitual paths as well as old unnoticed or forgotten experiences. The comparison to an actual map shows many of the processes that are found in all mental maps: we shape our maps around what we know and we omit things that have no presence for us. We assume that the individual has some sort of base (Canter, 2004a). For Canter and Hodge (2008), the distortions and limitations between the maps give insight into the cognitive processes that shape serial murderers' transactions with their environment, thus offering great potential for understanding the ways that they view their crimes and crime locations. The mental map has retained its appeal and reliability as a method of data collection (Blades, 1990). Some researchers (Veitch & Arkkelin, 1995; Haynes; 1980; Canter, 1977) point out, however, that it is an insufficient method on its own, as there can be uncertainty whether the peculiarities on the map are true representatives of the mental picture or if they are the result of poor drawing skills. They can be incomplete, inaccurate and/ or have distortions in terms of distance estimations. Not only do people's abilities to reconstruct a map differ, but the areas themselves differ. Some places, like cities, have an obvious structure which is easy to learn, while other terrains such as rural or veldt areas are more difficult to navigate. Lynch (1960) created the word imageability, to describe that quality of cities which make them memorable and evokes strong images in most observers. Furthermore, they do not include people's feelings associated with their conceptions of places. However, offenders in this study are not asked to draw a map so that an accurate cartographical representation of the area can be achieved. Rather, it is precisely because the maps reflect their views of the area, with its inaccuracies, that they are important. Verbal descriptions are more abstract and removed from the particular context and it is debatable whether one can take the descriptions at face value or whether there needs to be some psychological interpretation thereof. Mapping can more clearly demonstrate behaviour and is a criterion in its own right. In spite of their limitations and possible distortions, the sketched maps of offenders can also indicate important aspects of their conceptual systems, how the physical environment "takes on symbolic qualities and has emotional significance" (Canter & Youngs, 2010:187) and can thus offer the potential of understanding the ways in which they view their crimes as well as the locations of those crimes. As they put it, "Indeed, the distortions between a cartographer's map and a sketch of a 'mental map' do reveal further issues of how anyone's spatial cognitions, especially a criminal's, incorporate distortions that themselves may influence where he offends" (Canter & Youngs, 2010:186). In addition, the drawn maps may also demonstrate the ways in which the offenders' personal narratives were reflected in their spatial behaviour (Canter & Youngs, 2010). The sketched map additionally reflects the use of the residence as the launchpad from which to perpetrate offences versus using travel routes along which to commit them. According to Canter (1977), the use of both sketch maps and interviews then, provides the graphic and verbal output assumed to reflect the individual's inner mental representation of space to at least a reasonable degree, and from which we can thus generate meaningful models of people's interactions with their environment. According to Haynes (1980:15), "Only with a mixture of methods can the full richness of city images be discovered". Therefore, a combination of mental maps and verbal descriptions were employed in a semi-structured interview to collect the data in this research. 4.8 Research Procedure The research procedure involved collecting the data and then analysing its content. 4.8.1 Data collection. Using Gray (2009) as a guide, the researcher attempted to establish a rapport with the offender as well as obtain basic details from the offender about himself. The researcher was introduced as a registered psychologist with the Health Professions Council of South Africa and explained that all of the interviews would be audio recorded. The research was then introduced, briefly explaining what the research is about and informing the offender that the interview questions would be centred on where he (the offender) committed his murders, and that solely the cases he was convicted of, would be discussed. The researcher informed the offender of his right to participate in the research or not, and assured him that, although he may have signed a consent form, that he may

withdraw from the research at any time after signing without prejudice, if he so wished. The researcher also informed the offender of the available resources, such as the correctional centre's psychologists, should he become emotionally upset by discussing his offences. Using a semi-structured questionnaire, the researcher requested that the incarcerated offenders provide descriptions of their movements during their crime series, especially when they moved from one cluster area to another (if relevant), as well as why they chose to use those particular areas. The following thirteen questions were asked: 1. Why did you choose that particular area? a. To meet your victims b. To murder your victims 2. Did you have any residential/occupational/other association or history with that area? a. Meeting location b. Murder location c. If not, what was your motive for commuting to these areas? 3. Why did you keep returning to these areas? 4. During your series, were you aware that the police had already discovered the other bodies? Did you then relocate to another area? If not, why not? 5. What did/would have caused you to relocate to another area to commit more murders? 6. Did you return afterwards (without a victim) to check on a body or to see if it had been discovered? If yes, why? 7. Did the police find all the bodies? If not, why not? Did you have another area that the police did not find? 8. Did you want the bodies to be discovered? If so, why? 9. Did you ever return to a crime scene to watch what the police were doing? a. If yes, in how many of your crimes b. If yes, why did you do that? c. If yes, did you speak to the police at the scene (what about)? 10.What was the type of area you preferred to take your victims to and why? 11.Which of the following four options would you say best describes how you saw yourself in your murders: The Victim (I felt confused, powerless/wanted it over) The Professional (It was an exciting, risky, adventurous job/I was in control and powerful) The Revenger (It was the only thing to do that mattered and it was right to get my own back) The Hero (It was a manly mission to restore honour, respect/couldn't stop/nothing special) 12.Why would you choose one victim instead of another? Were all your victims similar? 13.Once at the crime scene, how long on average would you spend with your victim when you started to attack them? Offenders were then requested to draw mental maps from their memory of the areas encompassing their crime scenes. They were asked to include the roads, pathways and prominent landmarks (Haynes, 1980) as well as any recalled features such as buildings, open spaces, signs or levels of activity (Farbstein & Kantrowitz, 1978). The participants were then thanked for their willingness to be involved in the research and were encouraged to seek out the counselling services of the prison psychologist if they experienced emotional upset by discussing their offences. 4.8.2 Content analysis. The audio recordings of the semi-structured interviews and the drawn mental maps from the participating offenders were evaluated qualitatively. This data analysis was conducted through the method of content analysis as presented by Miles and Huberman (1994:15), who state that "the analytic challenge is finding coherent descriptions and explanations that still include all the gaps, inconsistencies and contradictions inherent in personal and social life". Content analysis is a linguistically orientated approach to qualitative analysis. It makes inferences about the data by systematically and objectively identifying classes or categories within them (Gray, 2009). Weber (1990) mentions two advantages that content analysis has over other data analysis techniques. Firstly, communication is a central aspect of social interaction and content analysis methods operate directly on text of human communication, and secondly, this method combines both quantitative and qualitative operations on text (methods usually perceived to be antithetical). This tradition of dealing quantitatively with qualitative data is long and well developed (Miles & Huberman, 1994). Weber (1990:9) describes it as "a research method that uses a set of procedures to make valid inferences from text". Wolcott (as cited in Miles & Huberman, 1994) distinguishes three major operations in content analysis: description, analysis and interpretation. Description involves reporting what's going on here and includes the participants' words. Analysis is "showing how things work, through systematically identifying key factors and relationships", while the interpretation makes sense of meanings in context - what's to be made of it all. However, as with other qualitative research methods, content analysis must contend with a few potential challenges. Firstly, there is the problem of subjectivity. The role of the researcher as interpreter can create an obstacle to valid results. It is important to be aware that subjectivity plays an enormous role in such research and that what researchers can see is what their conceptual frameworks allow them to see (Weber, 1990). Secondly, reliability and validity problems arise out of the ambiguity of word meanings and category or variable definitions. A content analysis variable can be seen to be valid if it measures the construct the investigator intends it to measure. Validity also implies that there should entail some generalisability of the construct across measures or methods. For Weber (1990), reliability incorporates, among other things, stability and reproducibility and these refer to the degree to which content remains unchanging when repeatedly coded by the same coder as well as when the content is coded by multiple coders respectively. Miles and Huberman (1994:55) describe the researcher's state as information piles up from the data sources "if you don't know what matters more, everything matters. You may not have the time to condense and order, much less to analyse and write up, all of this material - unless you have a few years ahead of you". Weber (1990) proposed a procedure for handling large portions of text reliably which involves defining, testing and revising clear and detailed coding rules for each category. Smith (1995) suggests coding each theme with a key word and grouping them together. He then suggests refining the categorisation by examining each theme in turn and using the raw material to define more clearly what the theme is. An index of themes is then produced and Smith recommends summarising in which case the theme can be found and how to locate instances of it. The method of content analysis employed in this research involved listening to each audio-recorded interview several times to get a feel for the content, as well as writing parts of it down verbatim. Statements that pertained directly to the research focus were extracted, followed by an attempt to extract their meanings. Each form of evaluation was carried out separately and thereafter, the commonalities or patterns were derived. The total set of meanings guided the compiling of a list of the central themes. Miles and Huberman (1994) suggested seeking out more data to support or qualify these emerging clusters before the final list of themes were finally integrated into a detailed description of the phenomenon under investigation. For Weber (1990:13), "there is no simple right way to do content analysis. Instead, investigators must judge what methods are most appropriate for their substantive problems". A useful procedure that was employed in this research involved numeration (Smith et al., 2009), which accounted for how frequently a theme was supported and thus its relative importance. By creating content-analytic summary tables, the number of offenders who shared similar characteristics or themes could be determined by counting the frequency and/ or sequencing of particular words, phrases, or concepts. Counting was often useful because it revealed aspects of the text that would not have been otherwise apparent. The table recorded the main themes under focus and could arrange all the pertinent data in readily analysable form. The secondary focus of this study involved comparing the relevant eight offenders' drawn mental maps with their respective physical GPS maps (plotted by the SAPS). The mental maps were explored to highlight any emphasised features (besides the crime scenes) that were mentioned by the offenders. Did they refer to their homes, places of work or other anchor points such as a particular shop? Were there significant discrepancies between the drawn mental maps and the real maps? Were geographical patterns evident on the GPS maps, as displayed by the crime sites? If so, did the mental maps reflect the same geo-pattern as the GPS maps? The offenders' personal commentaries on their drawn mental maps were included in the comparative analysis, as well as several guiding questions. These will be discussed in Chapter six. The personal commentaries of the remaining seven offenders on their mental maps were also briefly discussed thereafter. 4.9 Conclusion The researcher attempted to attain a level of objectivity and validity in this study. This was achieved by relying on an integration of the theory, the observations and audio recordings of the offenders' behaviour and verbal descriptions during their interviews, their drawn mental maps as well as the comparison between the mental maps and the actual geo-maps of those whose crime sites were geographically plotted. These various sources of information were used to back up the researcher's interpretations and will be discussed under the analysis in Chapter six. However, the following chapter first presents the raw data: the responses of the serial offenders in their respective interviews as well as their drawn mental maps. "I hope they heard the bells" said Evangelical Lutheran Church Pastor Horst Hoyer. "They, the girls, were held hostage only a few doors down from the church. The bells rang every Sunday morning. I hope the sound of the bells helped them to know of the presence of God's grace and helped to give them strength to keep going". On the first Sunday after the women were freed he asked the congregation to pause, to listen to the bells themselves. All eyes turned towards the roof. The bells pealed out as tears fell down the cheeks of some of the worshippers. If only we had known, they thought. If only". (Allan Hall, Captive: The Story of

the Cleveland Abductions) CHAPTER V RESULTS According to Hosken (2012), South Africa has the third highest rate of serial murder in the world. This chapter presents the responses to geographical questions of fifteen of these offenders. In addition, a copy of each offender's drawn mental map/s that encompasses their crime sites will be displayed with their questions. These will be discussed in the subsequent chapter. 5.1 Interview Responses and Drawn Mental Maps The questions, responses and sketched maps of each of the 15 interviewed serial murderers will be presented. The interviews were all conducted in English. 5.1.1 Offender 1. Offender 1 was an adult Black male convicted of 6 separate murders that occurred over a 21 month period in Gauteng. He acknowledged committing four of these murders. He targeted the Black children of his perceived enemies, who were between the ages of two and ten years, and also attempted to murder a Black adult male who "interfered" in his personal affairs. The victims were apprehended from one township but most of them were far in proximity from his residence. He followed the adult male home one night, attacking and stabbing him in a blitz style attack, leaving his body in the yard of the victim. On the other hand, the children were lured during the day, with a con-story of purchasing sweets for them before torturing them, raping them and strangling them to death. All the children were murdered and left in a particular veldt adjacent to the township. The offender was sentenced to life in prison and at the time of the interview, he had been incarcerated for 19 years. He was interviewed at the Leeuwkop Correctional Centre in Medium C. Figure 6 Drawn mental map of Offender 1. 1. Why did you choose that particular area? a. To meet your victims Offender 1 said that he was in love with a girl that he suspected was being unfaithful to him. He explained that during apartheid, a man would confront and fight such a woman, even slapping her, which is what he did. "We are men. A woman is not above you," he declared. He complained that it is different nowadays, where men are just expected to leave an unfaithful woman alone. He mentioned that her friends took this matter to her parents, who in turn took the matter to their "comrades" in the township. Offender 1 said that they wanted to serve "mob justice" and possibly sjambok him. He stated, "I refused to go to them. I cannot be sjambokked by young children". Later he said, "Ja, after they wanted to kill me, to burn me, I decided to kill also". He said that he decided to punish them by targeting their children since it would be "very difficult to get their parents". Offender 1 would "mark" their home and after the parents went to work, he went to find, attract and murder their child because "that person must feel pain" (referring to the victim's parent/s). One victim resided and was apprehended in a street close to the offender's father's house. The other locations were "far" but since he had specific victims in mind, he was prepared to walk to them nonetheless. He described how he lured the small children who did not yet attend school, by offering to give them money or buy them sweets at the tuck shop. He explained, "Here in location, parents are very negligent. All of them, especially the Black people. They don't care where their children goes to. They just leave them to go". He also mentioned that sometimes the children were sent to a particular tuck shop at the corner and thus he would apprehend them in the street while they were walking. He would lure them and make them think he was taking them to the shops. He stated, "Kids are so stupid. They listen to what you say". b. To murder your victims Offender 1 stated that the murder location was "just a secret place". He said that he would "travel with the kids" on foot and did not care if people saw him. He took them to a veldt adjacent to the township. After murdering his victims, he would leave the bodies there, thinking that "somebody who's maybe working in the veldt will find it". He said that he did "the same" with all of the children. The offender stated that he knew the veldt well. He said that it was actually a farm that belonged to someone, though he did not know who, and that he and his friends would go there as children, to steal peaches. In addition, and after the murder of the children, the offender also mentioned a man who had passed an infuriating comment to him, saying that he would not be able to survive the impending mob justice. The offender viewed this man as "a person who interfered in other people's matters" and "another person who is involved in killing me". He stated that he "did not want to hear the thing about comrades" and took it personally. "Black people are so stupid. They enjoy that you must be killed," he complained. The offender thus traced the man and found him drinking beer at a shebeen. He disguised himself as a woman and followed him home. On arrival, he decided to stab him very quickly and left him there. 2. Did you have any residential/occupational/other association or history with that area? a. Meeting location The offender said that he was born and raised in the township where the incidents occurred, and was a current resident. He therefore knew it "very well". His first victim resided close to his father's one house, while the other three victims lived in homes "very far away" that would take between 90 minutes and 2 hours to reach by foot. b. Murder location The offender reiterated that he frequented the farm area as a child and knew it well. 3. Why did you keep returning to these areas? The offender stated that it was "just a secret place" and that he knew it well. 4. During your series, were you aware that the police had already discovered the other bodies? Offender 1 said that he was not aware of any bodies being discovered. He stated that he was being careful around the comrades who would perform mob justice and was not focused on the police. He went on to say that he only discovered that the police knew his name and wanted him, from reading a newspaper at work roughly 18 months into his series. He wondered how they knew about him and why they were interfering in this case. He later discovered on his arrest, that the man he had stabbed and taken for dead, had survived, and had mentioned the offender's name and address while in hospital. The police traced Offender 1 and compared the weapon used on the man with the weapon used on the children. He said that he "was not aware during that time" that a stab to the [indicated his stomach] would not kill him, like say a stab wound to the [indicated his chest/heart]". 5. What would have caused you to relocate to another area to commit more murders? The offender said that if he knew the bodies had been discovered, he would have had to first do a search for another place but added that this would have been a "very difficult" task for him. He did not elaborate any further. 6. Did you return afterwards (without a victim) to check on a body or to see if it had been discovered? He answered, "No". When asked about the body mutilations and muti allegations, he mentioned that it was not the first time that he had heard this muti story. Regarding the taking of body parts, he stated that there was "no such thing". According to him, "this naughty police" made assumptions based on their discovery of some yellow powder. The offender explained that he sold spices, including potpourri, which was yellow in colour. He did not comment on whether there were body parts missing, however. 7. Did the police find all the bodies? He paused and then said, "I don't know". 8. Did you want the bodies to be discovered? He answered, "No" and added that he was upset and cried when taken to the veldt to identify the body disposal sites. He stated that he just pointed anywhere to the police and complained that they were lying about him, were powerful and that he did not like what they were doing to him. 9. Did you ever return to a crime scene to watch what the police were doing? "No", he said. 10. What was the type of area you preferred to take your victims to and why? Barring the man whom he followed home and stabbed, the offender said that he lured all of his other victims (the children) to the adjacent farm. He said that he knew the location, that it was secret and that he assumed that someone working there may find their bodies. 11. Which of the following four options would you say best describes how you saw yourself in your murders: The Victim (I felt confused, powerless/wanted it over) The Professional (It was an exciting, risky, adventurous job/I was in control and powerful) The Revenger (It was the only thing to do that mattered and it was right to get my own back) The Hero (It was a manly mission to restore honour, respect/couldn't stop/nothing special) The offender simply stated that "it was about revenge". 12. Why would you choose one victim instead of another? Were all your victims similar? He said that he was out to punish those who interfered in his personal affairs. He targeted the children of the specific parents who had wanted to punish him, adding that he did not get them all, as well as the man who had commented negatively on the matter. 13. Once at the crime scene, how long on average would you spend with your victim when you started to attack them? The offender confirmed that he blitz-attacked the man, while he first got the children to the private place before immediately attacking them: "A child cannot escape from me". He did not specify how long he spent with his victims while attacking them, however. 5.1.2 Offender 2. Offender 2 was an adult Black male convicted of 16 murders that occurred over 6 months in Gauteng. He targeted Black female adults, barring one child victim, during the daytime. He raped and strangled them to death manually or with ligatures often made from items of the victims' clothing. Blunt force trauma was also present in four of the incidents. The partially naked bodies of his victims were found in two broad areas. One area was near to his shack, with the body recovery sites being closely located to one another, while the other area encompassed two distinct locations in close proximity to each other. Each location's sites were also grouped significantly closely to one other, according to a South African Police Service report. At the time of the interview, Offender 2 had been incarcerated for

three years and was interviewed at Johannesburg Correctional Centre in Medium C. As was the case at the time of his arrest and sentencing, Offender 2 has denied his involvement and continues to maintain that he "didn't commit such crime", stating that he was arrested due to his residential proximity to the crime scenes. He asserted that he did not know where the crime sites were, since these were never shown to him. As a result, all questions pertaining to his choices of location, victimology and motive regarding the murders were omitted. Instead, the interviewer explored his knowledge of the two crime areas; hereafter referred to as area 1 and area 2. Figure 7 Drawn mental map of Offender 2: first map (residence). Figure 8 Drawn mental map of Offender 2: second map (area 1). Figure 9 Drawn mental map of Offender 2: third map (area 2). 1. Why were you going into the area associated with the crime scenes, which was further away from your home (area 2)? The offender mentioned that the reason he would travel to the furthest crime area was to attend court regarding a fraud case in which he was involved. He and another two individuals had been selling shacks to people seeking accommodation in the settlement where he had lived since 1997/8. He said that he had been "working at municipality on that time", and that this was "where I started to know this place". Offender 2 stated that he and his selling colleagues were arrested on fraud charges in 2005/6. He mentioned having 167 complainants at the trial that testified against him and said that they all spoke without evidence. "All of them, they don't know me," he complained. He said that he recalled only one person; a woman with whom he claimed to have had consensual sexual relations, but who accused him of trying to kill her since he was "making that fraud" and did not want her as a witness. 2. (The offender was shown a map of the GPS coordinates, recorded by the SAPS, in area 2) Are those places close to the court? On seeing the map, the offender said, "Ai, this place, I don't know this place" and that the sites on the map were "far from the court". He stated that area 2 is big and that he did not go "inside the bush" or "someone's place" but only ever to the court and to the Shoprite near it. 3. So the court is in town? He replied, "Ja, it's inside the town. I was going to the town not to some other areas or maybe to the house areas or what". 4. So you are not familiar with the crime locations within area 2? "I don't know them", he said and repeated that he went there to attend "only the court". 5. Before the court issue, had you been to area 2 for any other reason? "No", he answered. 6. How many times did you have to keep going to court? The offender said that he went there "only" on the particular court dates, over a period of four years, adding "not every month; maybe a month I was going only once a month with a date that the court is giving me". 7. During that time, were you aware that the police had already discovered the bodies there (area 2)? "I did know, ja I did know, but because it was not against me. Everything was changing. When they see my fraud case is going to be finished, is when they start the allegation of murder 'cause they see the fraud case I am going to win it. No one was telling the court they [the complainants] did give me the money and I signed it down". 8. Since you lived and worked near to the other crime scene area (area 1), did you know it very well? "No, Lenasia. What I can say, I know Lenasia. I know Lenasia to the tuck shops, to the tuck shops inside the town, inside not outside. Outside I don't know Lenasia. Even Westonaria. I don't know outside of Lenasia. I know inside Lenasia to the court and that Shoprite". He reiterated that he went to area 1 for "shopping only" and to area 2 "to the court only" 9. How far was your home from the places they accused you of in area 1? Offender 2 estimated that the distance from his home to the crime sites in Lenasia was about 5 to 10 km. 10. How far was your home to area 2? He estimated that the distance from his home to area 2 was roughly 30 km. 5.1.3 Offender 3. Offender 3 was an adult White male convicted of three murders in Gauteng that occurred over nearly five years. He targeted White adult males, stabbing them repeatedly and burning two of them after he had murdered them. Victims were found with their trousers and underpants removed. Two of the victims were intoxicated and the third was a frail elderly man. At the time of the interview, he had served 14 years of his life sentence and was being held at Johannesburg Correctional Centre in Medium B. Figure 10 Drawn mental map of Offender 3: first map. Figure 11 Drawn mental map of Offender 3: second map. 1. Why did you choose that particular area? a. To meet your victims The offender claimed that the victims had bad friends who wanted to be rid of them. They approached the offender for help since he was known in the neighbourhood for doing what people wanted, regardless of the specific benefit he might incur. He said that he thus targeted the particular victims requested. The first two victims were located within his suburb and murdered in a highly localised park area, one within view of his residence and the other within about 200 m of his home. The third victim was located and murdered in the neighbouring suburb. He stated that the locals all knew to keep their distance from him and that his scheduled nightly routine involved walking around between midnight and two o'clock in the morning, and going to sit alone in the nearby park of his suburb. From there, he could observe the movements of fellow locals. His girlfriend, with whom he shared a child, lived with her mother in the neighbouring suburb. By visiting there regularly, and sitting in their local park during the daytime, he said that he was able to see "how's the things, see guys walking and where they go" and monitor the movements of his third victim. He wanted to assess during the daytime whether the area was secure for him to do what he was planning on doing late that night and concluded that it was "a simple area". b. To murder your victims The offender said that he attacked and murdered his victims at the meeting site. He did mention that the third victim was attacked by the park "on the corner 'cause this is the way I'm walking". 2. Did you have any residential/occupational/other association or history with the meeting/murder locations? The offender was born and raised in the suburb in which he resided as an adult with his mother. "I know Bertrams like the back of my hand. There's no corners in that Bertrams I don't know; tunnels I don't know. I know everything", he said confidently. He stated that he liked to walk around the area and that the nearby park was very central to him. "I like to sit in that Park. Don't know why. For me, I like to see what's going on around me", he mentioned. He added that a lot of fighting happened in the park, and from it, one could see everything around it. He mentioned how certain demographic groups elected to have public fights there, where they wanted to show who was strongest. He stated that "they can't challenge me" as he was trained from an early age in taekwondo. According to the offender, his association with the neighbouring suburb was due to visiting his girlfriend and their child residing there. 3. Did you return afterwards (without a victim) to check on a body or to see if it had been discovered? He answered, "No". 4. Did the police find all the bodies? Did you have another area that the police did not find? He confirmed that he was aware that the police had found all the bodies and that there were no additional areas. 5. Did you want the bodies to be discovered? If so, why? "Not actually but for what's going on, I rather prefer they must get the body", he said, claiming that he wanted to raise police awareness of the violence in his suburb. Although he stated that "not one of my murders was running the same; that's actually what made them confused", he acknowledged that what was common to his murders was their geographical proximity. 6. Did you ever return to a crime scene to watch what the police were doing? He said, "Yes". a. If yes, in how many of your crimes "Two", he replied. b. If yes, why did you do that? The offender answered that he had wanted to see how seriously the South African Police would take murder in his area. He stated that he had seen them at the first crime scene and that "they didn't care" so he told himself that he would need to commit the next murder in a way that would ensure that they did start caring. He used an example of bashing the next victim's head completely and stated that the police "got a bit of tension" at the next scene. He explained that "Bertrams is not a play place for any people. You can go in this side but before you reach the other side, in that piece; you will have a problem before you reach there". He added that the culture of the locals was centred on men having to prove themselves and their strength, and standing their ground as men. At the third crime scene, the offender perceived that the police only cared about the neighbouring suburb and not about his suburb. "Unfortunately for me to tell them they will never listen so my intention was to show them", he concluded. 7. What was the type of area you preferred to take your victims to and why? The offender said that he preferred to go directly to his victims' homes and murder them. In the case of the third victim, he had observed that "he's always walking in the park". He had wanted to go straight to his place. However, he did not know where he came from but saw him walking through the park late that night and thus elected to murder him there. However, since he had observed during the day that many children played in that park, he chose to move this particular victim's body away from the park after he had been murdered, as he said that he did not want the children to find a dead body there the following day. The remaining blood stains did not concern him as he reasoned that "anyone can hurt themselves". He dragged the body by the legs across a small bridge and into a ditch. He chose the ditch "where all the water goes when it rains" since "it's big; it's deep". It had a high enough wall that the children would not be able to see into it, whereas adults could and would therefore find the body. 8. Which of the following four options would you say best describes how you saw yourself in your murders: The

Victim (I felt confused, powerless/wanted it over) The Professional (It was an exciting, risky, adventurous job/I was in control and powerful) The Revenger (It was the only thing to do that mattered and it was right to get my own back) The Hero (It was a manly mission to restore honour, respect/couldn't stop/nothing special) The offender replied, "To be honest I don't know. Can't put me in one of them. For me it was like testing myself, testing my mind. How do I feel about it when I do it? It's like for me, to be honest, nothing. It's like nothing. To be honest, it feels like I don't have feelings for the next person. What happens happens. It's klaar. For me, I would like to learn to have feelings. When is the person hurt? I don't have it. I wish I could have learned that. I can't even feel my own pain". The offender showed his cuts on his arms and relayed how he had swallowed glass, eaten three light globes as well as 1.5 kg of nails and screws. He shared, "I didn't even feel anything. Inside this place, I build up pressure, build up pressure, build up pressure and to relieve that, I start cutting myself. Every time I cut myself, I try to feel. But I don't feel". Offender 3 went on to describe his heroic power in the prison, stopping others from escaping. "I'm the one, no one else" who checked the security at the prison and told the authorities what was suitable and what needed to change. "That's why they keep me in isolation. I can open any door", he stated. He mentioned an incident where prisoners repeatedly attempted to escape but failed as they were "stuck with their cuffs around their legs, just because of me". The offender concluded that "maybe I've been born a killer but then on the other side, my head says no, I'm not born for a killer. I can do a lot of things, even what I done to this prison". He stated that he has "changed all this members lives in this place". He is focused on helping others now, "I changed so much in this place. So much". 9. Once at the crime scene, how long on average would you spend with your victim when you started to attack them? He said that he "jumped" his victims, attacking them straight away. 5.1.4 Offender 4. Offender 4 was an adult Black male whose offending behaviour spanned nine years in Gauteng. He was convicted of 7 murders, but in the interview he claimed to have murdered 884 people. He denies raping and murdering an Indian woman for which he was convicted, mainly targeting children, preferably boys, and young teens (Black and White, male and female). Official records report that the offender kidnapped or lured his young victims away with offers including cell phones and Rambo figurines, as well as disguising himself in official uniforms. He then raped/sexually assaulted and/or murdered his victims. According to the offender, he requested that each of his victims pray. If the prayer was "good", the youngster lived. If the prayer was "bad", the victims were thrown to the ground and were murdered by having large stones thrown down on them. Offender 4 also said that his mother had put a curse on him and that he took body parts (such as arms) of his victims as muti for her. At the time of the interview, he had been incarcerated for eight years and was serving his life sentence at Mangaung Correctional Centre. Figure 12 Drawn mental map of Offender 4. 1. Why did you choose that particular area? a. To meet your victims The offender described his reasons for being in the various areas of his encounter sites. He said that he had worked in two of the areas. "The place I know there is Mayfair place. I was working somewhere around Mayfair", he explained. He also visited with friends in two of the areas: "Ja, I used to be there. They used to take me there". One area, he couldn't "remember nicely", neither when describing it nor when drawing it on his mental map. A separate area was one that he frequented for shopping purposes and he explained that this was the location of his last victim. He had been there to purchase a suit from a jumble sale run by a woman. The offender expressed that he was unemployed at the time but had purchased the suit with the transport money received from a pastor after cleaning his yard temporarily. When he discovered that the suit was not his correct size, he returned twice and told the woman that he had already paid her. When he attempted to return the suit, the woman became angry as did he, since he felt that "she is trying to rob that money and I'm not working". Although he stated that he had not initially planned to do so, he lured her young niece away and murdered her. This was his final victim. b. To murder your victims Offender 4 said that he took his victims to a particular site to abuse or murder them. He said that he knew it "very well" and used to pass the murder site "every time" in his travels. He described having a place where he would murder as analogous to other professions: "If you are a pastor, you know where your place is to do your job". When speaking about his last victim, the niece of the jumble sale woman, he expressed that he did not choose the site for its privacy, since he claimed that he could murder anywhere, but because he was "having a big anger and took her far so they couldn't find her". He explained that if victims made him suffer, they would be taken far away to the mine dump and buried underground. He mentioned a Chinese lady who assaulted him as well as a pregnant woman (who cries out in his dreams), in this category, although no such victims have been discovered by the police. Those that did not make him suffer would be left on top of the ground in the open veldt, where people passed by and where the police could easily find them. 2. Did you have any residential/occupational/other association or history with that area? a. Meeting location He stated that because he grew up in the area, "I know the places". As previously mentioned, he worked, shopped or visited friends in the various areas. b. Murder location He described his house as being "very far" from the main disposal site, estimating that it would take "60 minutes" to drive there. The offender claimed to know the main disposal site of the mine dump well and considered it far away enough from their apprehension sites to make it difficult for the bodies to be found. He claimed that voices guided him regarding his targets and based on his experience with the victims, they were murdered and buried further away on the mine dump or their bodies were abandoned in closer open fields. 3. Why did you keep returning to these areas? Offender 4 stated that he returned to these areas to do his "job" and that he knew them well. There were some that he did not know as well but had discovered them "sometimes just from travelling through" the area. 4. During your series, were you aware that the police had already discovered the other bodies? Did you then relocate to another area? In respect to the police finding the bodies, he answered, "Yes but not all" and added that "some were buried on mines". He stated that he did relocate to other areas but that the police did not know. He mentioned that he was on drugs at the time and that the voices would direct him regarding who and where to victimise. 5. What caused you to relocate to another area to commit more murders? The offender responded that regardless of being aware of the discovery of some of the bodies by the police, he would "hear voices" that would direct him regarding whether he should apprehend victims from elsewhere or not. 6. Did you return afterwards (without a victim) to check on a body or to see if it had been discovered? If yes, why? The offender stated that he returned to the bodies, often staying with them for up to 11 days to monitor that "no one gets that body". He described a case in a separate area, unknown to the police at the time because he did not confess it, where he stayed with a body for some time. He claimed that the stepmother had requested the murder of the stepson in exchange for giving him money and her daughter in marriage, but she did not do it. He called her and told her where to find the body, planning to move it if she came. She never did and the body was only discovered after 11 days. The offender added that this was the only murder he committed on request. 7. Did the police find all the bodies? If not, why not? Did you have another area that the police did not find? He said that there were "a lot of areas" that the police did not find and that many of the victims' bodies have yet to be discovered. He claimed that the "investigator was not cooperating" with him, was torturing him and not handling him well. As a result, he too chose not to cooperate with the police and lied in court. 8. Did you want the bodies to be discovered? If so, why? Offender 4 said that he did not want the bodies to be discovered at the time of the murders but then changed his mind after he had spoken to a pastor who visited him in prison. The pastor encouraged him to confess the crimes, apologise to the victims' families and give them their bodies back. He said that he wants the police to find "all" of the bodies now and would be happy to explain to the families "one by one" why he did "all this rubbish". 9. Did you ever return to a crime scene to watch what the police were doing? "Yes, I used to do all these things", he admitted. a. If yes, in how many of your crimes? He stated that he returned to "all of them besides that one they didn't find". b. If yes, why did you do that? The offender said that he wanted to see if the police were "doing a perfect job" or if they were "just taking chances". He described how angry he had been that they had "plant me with another murder" but was adamant that he had not murdered the woman. c. If yes, did you speak to the police at the scene (what about)? "Ja, it's my job to do that", he explained and said that he had phoned the police after one particular murder. He had told them that he was passing by when he noticed a body. After the police arrived and asked bystanders if anyone knew the victim, the offender offered his help and took them directly to the family. He said that he did this to "make sure how they do investigation". 10. What was the type of area you preferred to take your victims to and why? "All over. Even in KZN, Durban, Jo'burg", he mentioned. 11. Which of the following four options would you say best describes how you saw yourself in your murders: The Victim (I felt confused, powerless/wanted it over) The Professional (It was an exciting, risky, adventurous job/I

was in control and powerful) The Revenger (It was the only thing to do that mattered and it was right to get my own back) The Hero (It was a manly mission to restore honour, respect/couldn't stop/nothing special) The offender concluded, "For me it's because I was affected. It's a revenge I can say. It's a revenge. It's not that I'm proud for all this nonsense I did. It was a revenge". 12. Why would you choose one victim instead of another? Were all your victims similar? The offender referred to the "voices" he heard that gave him direction as to who to victimise. He said that he knew some of his victims while others were strangers. Once he had lured or kidnapped his victims, he said that he would ask them to pray: "if I see that they pray nice, I used to leave them but if I see maybe he's not pray nice, I kill that one". The offender stated that he was angry and that he targeted young people. He described being raped at school by a female teacher and said that he thus felt that "older people must do ugly things to children". 13. Once at the crime scene, how long on average would you spend with your victim when you started to attack them? He explained that "this thing is happening just automatically, you see? You can't just go and say I will sit here for whole day and look at the person you going to kill". He said that he gave his victims "five to ten minutes to pray" and based on his assessment of their prayers, would then decide what he would do. Once he had decided to kill, "you can't spend long time". The offender described how in the case of the child whose aunt had sold him a suit, it was an impulsive decision to kidnap or murder her. He repeated that neither had been pre-planned. When he had reached the isolated site, and saw that police helicopters were looking for him, he then thought "let me kill him. It just happen like that". 5.1.5 Offender 5. Offender 5 was an adult Black male convicted of 38 murders of Black women, which occurred between July 1994 and October 1995 in Gauteng. The victims were beaten, raped and generally strangled with their own underwear, in remote areas. The offender wrote the word bitch on one of his victims before disposing of her body (Pistorius, 2002). He was sentenced to a world record of 2410 years. At the time of the interview, he was being held at Mangaung Correctional Centre and had served 17 years of his total sentence. Figure 13 Drawn mental map of Offender 5: first map. Figure 14 Drawn mental map of Offenders 5: second map. 1. Why did you choose that particular area? a. To meet your victims "Joh! It's completely a question I have never been asked before". The offender said that he just happened to be walking in routine areas of his life where he would meet his victims (mostly in the street) and begin talking to them. b. To murder your victims Offender 5 thought about it and then said that probably the reason why is that "there were not a lot of people for security sake" where he murdered. In most of the areas, he would find this with women walking on their own. When pressed for why he selected particular sites, he laughed and said, "To be honest I don't have a particular reason why. It's the first time I'm asked this question! It's complicated for me!" He stated that he did not take his victims to these areas, but found them there. Where he met them, he murdered them. So he did not need to transport them elsewhere? "Exactly". He finally concluded that his areas were chosen for murder since, "There was nobody watching. That's the reason". 2. Did you have any residential/occupational/other association or history with the meeting/murder location? Offender 5 stated, "Not exactly. I used to pass to those places, but never went there. I used to pass and see them by chance". The offender added that people were walking around factories, at the back of farms, and between the area where he lived and the next one 8 km away. He said that there was a mountain that people walked over between the two latter areas. The offender described his knowledge of the routes between his three primary crime site areas, which served as the central points of his broader crime areas. The first area was one in which the company for which he worked, was based. It also included a police station that he frequented many times when appealing an old sentence. The second area incorporated his residence at the time although "the murders were outside" that area. Crime sites included farm areas and an area roughly 8 km away. These locations were in places where "there's no one looking, there's no security", and "it was during the day". He stated that he knew the shortcuts that people walked in the area. The third area was the suburb of his birth and growing up years. "It's my home there. My father's there, my brothers are there, everybody's there", he explained. He described the in between places that he would discover because of travelling past "by transport; taxis" and would then meet his victims on foot. Thus his murder sites were not close to his homes, "not at all", but rather based on his travelling between and around his base points. 3. Why did you keep returning to these areas? He said, "I think I will repeat the same answer. The point is that I happened to walk there and wanting to see what happened and then you meet somebody". 4. During your series, were you aware that the police had already discovered the other bodies? The offender stated that he did know about the bodies being discovered by the police as he "used to call them and tell them to go pick it up". 5. What caused you to relocate to the other areas to commit more murders? Offender 5 stated that his series began in Cleveland and not in Atteridgeville, as the popular acronym ABC associated with him, suggests. He relayed a detailed story of how he had been accused of rape and was detained and tortured in a cell at the Cleveland police station. Thereafter, he was prosecuted and sentenced to seven years in prison for a crime he claims he did not commit. He was unable to prove his innocence as he claimed that the State refused his request for DNA testing, stating that it would waste money. According to Labuschagne, however, DNA was not in use in South Africa at that stage (G. Labuschagne, personal communication, 10 September, 2014). Immediately after his release from prison in Pretoria on the 3rd of November 1993, the offender said that he did not return home but took a train straight back to Cleveland, to the magistrate where he had been sentenced. He requested that the crime be reinvestigated, as he had served time erroneously, and wanted the record against his name to be removed. He was angered to discover that the Cleveland police could not find his file and "it was a painful situation" to learn that his mother, brother and sister had all passed away during that period. As a result, he went to live with one of his friends in Vosloorus, Boksburg and then also moved to other family in Soweto for a few weeks. He was also travelling back and forth to a girlfriend, whom he'd met while in prison, in Soshanguve, Pretoria. He stated that his fury was growing as he was not working, had no money for food and was receiving no cooperation or help from the police who were "busy". Offender 5 told the policeman at the Cleveland station, "You're joking. I can't believe the justice system of my country is ripping me like this. You are busy? I'm gonna keep you busy". The offender described walking outside, sitting on the pavement and smoking until nine o'clock the following morning. He then walked back to the police station via a field, where he came across a lady and attacked her. He called the station and asked them to inform the officer to come and collect a body at the location he gave. The offender said that he had climbed on top of the station to watch the police official. Thereafter, he moved to the other side of the freeway, where he had previously worked, attacked another woman and called the police station again. After a week, and roughly seven murders, the offender stated that he realised that he could not continue this way and would return to Atteridgeville, try and forget about everything and possibly feel okay. His girlfriend moved in with him. After some time, her sister's boyfriend was involved in shooting someone and the offender was "furious" at the police for accusing him, beating him and taking him to a police station. They later discharged him but that is "where it begun". The offender resumed his murderous behaviour and when asked why he selected Atteridgeville, he responded that it was because he was based there at the time. He remained in the area until his daughter was born on the 5th of December 1994 but left thereafter because of the troublesome boyfriend of his girlfriend's sister. Offender 5 went back to his friend in Vosloorus, Boksburg and worked there. He "did not like the place" and its memories and was also triggered by reading in the Star [local newspaper] about the erroneous and unjust arrest of an innocent man for his crime. "I was furious", he stated and two days later, he walked out of Vosloorus. He said that he wanted to go elsewhere and selected a path to Brakpan. En route, as he neared the Boksburg Prison however, he saw a lady and realised "I will kill her". The murders resumed. The offender described his movements across the neighbouring suburbs, using the various train stations as the main landmarks. He stated that he became aware of the train stations from his travels and would go to them as he assumed that he would find people there. Around October 1995, after he had become aware that his photo had been published in the Star, the offender was afraid of being identified and attempted to keep away from people and keep a low profile as he feared that others would kill him. He mentioned staying on top of a minefield, between Germiston and Boksburg, where he would watch planes and think. He wrestled with the idea of handing himself over to the police. After some time, he went to the Germiston train station and made calls to the reporter, identifying himself as the murderer. She asked him if was joking and since Cleveland was "easy" to access from there, he went there and murdered again. He left Germiston again by train and went to Vereeniging, but "did not do anything stupid" and returned to the Germiston train station. He called the reporter and told her where she could access a body so that she could realise "it's the

right guy". He stated that he was not aware that her phone had been bugged and that the task force were after him. Subsequently, he was apprehended by the local police in Johannesburg. 6. Did you return afterwards (without a victim) to check on a body or to see if it had been discovered? If yes, why? The offender answered that he thinks there was one large victim that he returned to the following day, in search of the watch that he lost during a struggle with her. He feared that the watch might have fingerprints on it. This victim was located in Boksburg, by a mine dump close to the prison. 7. Did the police find all the bodies? "Yes", he confirmed. 8. Did you want the bodies to be discovered? If so, why? "Yes", he said, since he wanted to make his point. 9. Did you ever return to a crime scene to watch what the police were doing? "Yes", he answered. a. If yes, why did you do that? "It's for the police", he explained. The offender said that he wanted to watch the investigation and see who was there, what they were doing and how they were feeling. He stated that he also watched the press/media to learn what they were saying. He hoped that they would all be upset. "I couldn't do anything to these police" and acknowledged that he vented his anger on the wrong people. "If I had a gun or whatever, I would have gone for the police", he stated. He added that he was "furious" that the policeman at the station had not taken him seriously. He had requested that his file be retrieved so that the case could be reviewed but was ordered to leave before he got locked up again. The offender explained, "I was furious for that! I told him, you know what? My father never bought me some toys to play. I don't play in life. If you want to play, I'm gonna show you because he told me he's busy". b. If yes, did you speak to the police at the scene (what about)? "No", he replied. He said that he would just be in the crowd and watch. 10. What was the type of area you preferred to take your victims to and why? The offender stated that he murdered them where he met them. He added that there was only one victim, a teacher that he moved. "I was angry but I didn't look angry. I don't know how I did that to tell you the honest truth", he stated. Hence, he said that he and his victims would end up "talking and talking" and that he would ask them to go for a walk. 11. Which of the following four options would you say best describes how you saw yourself in your murders The Victim (I felt confused, powerless/wanted it over) The Professional (It was an exciting, risky, adventurous job/I was in control and powerful) The Revenger (It was the only thing to do that mattered and it was right to get my own back) The Hero (It was a manly mission to restore honour, respect/couldn't stop/nothing special) The offender commented, "I was angry of what had happened to me before" (referring to being imprisoned for the first time). After the police had rejected his appeal to have his sentence reinvestigated and his record removed, he said, "I was angry; I was furious" so "I will just walk and when I meet somebody I would say: that's it. That's all, you know". The offender concluded that "it was revenge". 12. Why would you choose one victim instead of another? Were all your victims similar? The offender recalled laughing when a White female reporter had asked him why he only murdered Black women and whether he would ever murder a White woman. He stated that it wasn't about her, but about mothers who don't care. He also mentioned that one of his victims reminded him of the woman who had accused him of rape. 13. Once at the crime scene, how long on average would you spend with your victim when you started to attack them? He stated, "Straight away, straight away". 5.1.6 Offender 6. Offender 6 was an adult Black male convicted of 11 murders, committed during 2 time periods: January to September 2002 and January to September 2006. He targeted Black female adults in Gauteng. In the 2002 series the offender made use of blunt force trauma to the victims' heads, whilst manual/ligature strangulation as well as stabbing was present in his 2006 series. The bodies were left naked, partially naked or clothed, in the grass or in the water with a rock on the victim's back. The bodies within each series were left nearby to one another. The 2006 murder scenes were approximately 2.8 km from the 2002 murder scenes. At the time of the interview, the offender had been incarcerated for seven years of his life sentence at Mangaung Correctional Centre. Figure 15 Drawn mental map of Offender 6. 1. Why did you choose that particular area? a. To meet your victims Offender 6 said that he did not meet his victims at the crime scene areas but that most of his victims were girlfriends because you "can't get someone and take him to go to kill him beside that someone you know better". He stated that he met the women in the various areas from which they originated and that he "was there travelling a lot" as part of his work. b. To murder your victims Offender 6 said that he took his victims "from their place and then I bring it to my house" or sometimes they came by themselves to visit at his home. He stated that possibly two or three women were murdered in a quarry "not far" (about 3 to 4 km) from his home, while the rest were murdered at his home and subsequently transported by car "to the quarry and behind the quarry", which he estimated to be roughly 1 km apart. The offender said that he did not know these areas initially, but that a girlfriend (who was also a sex worker, though he said that he never paid her) had once taken him there: "So I start to know that place" and then he asked himself, "Why he take me here?" He figured that this is where she took "a lot of guys" to go and sleep with her. As a result, when he decided to murder this girlfriend, he took her back to the quarry and did it there. He said that she was the only victim murdered there, while his other victims were left behind the quarry so that others could find them and take their bodies. 2. Did you have any residential/occupational/other association or history with that area? a. Meeting location The offender reiterated that he travelled diversely for his work, and that he would meet his future girlfriends (and victims) in a variety of areas, some "very far" from his residential area and even in another province. b. Murder location Offender 6 answered that he lived within 3 or 4 km of the murder location, although he had only recently been exposed to the actual site before his murder series began. 3. During your series, were you aware that the police had already discovered the other bodies? "Yes, it was me who phoned the police and told them where I find a body", he replied. He explained to them where to find the murdered victim, but never identified himself or met the police at the scene. 4. Did you return afterwards (without a victim) to check on a body or to see if it had been discovered? He shook his head, "No, no. I don't want to see those people again". 5. Did the police find all the bodies? "Yes", he confirmed. 6. Did you want the bodies to be discovered? If so, why? The offender affirmed this, saying that he did not want it to take long for the bodies to be discovered because "people worry". 7. Did you ever return to a crime scene to watch what the police were doing? He answered, "No". 8. What was the type of area you preferred to take your victims to and why? The offender stated that the quarry was behind the river, "so the grass is nice there" for the purposes of comfortable sex. 9. Which of the following four options would you say best describes how you saw yourself in your murders: The Victim (I felt confused, powerless/wanted it over) The Professional (It was an exciting, risky, adventurous job/I was in control and powerful) The Revenger (It was the only thing to do that mattered and it was right to get my own back) The Hero (It was a manly mission to restore honour, respect/couldn't stop/nothing special) Offender 6 said that he murdered the woman when he "proposed a relationship" but was told that she's "got other man". He would "start to think otherwise in my head about that girlfriend. How come he's got two men at the same time?" He explained that he was fighting against this and declared, "You can't be one woman and you want there must be three [men] to you at the same time. No, no, no. The Bible is against that". He described how a man brings a woman into his home and she says she is going to town. She leaves her "nice bed" and sleeps instead in the veldt with other men. He complained that "is not nice" and "make me crazy, really, when I think about that". He added that he "used to watch my mother and he's doing things I don't like it. She had a lot of men". He became very angry when his mother subsequently became ill. He also described a relationship he had with a woman for five years who "was playing with me like a toy". He lived with her and she made him clean her house and her children while she was out. Another man told him that she slept with other men and so he was angry. He said that he found her with a man and asked her, "Why you leave me and you eat my money?" He said that tension was building within him as he "took that, with this thing of my mother and take it together". Furthermore, he added that he had also been accused of raping the young daughter of his next girlfriend. He stated that he paid for the child's school fees and escorted her to school but her mother lied about him. As a result, he lost his job and served prison time for three years. On his release, he said that he was very angry for "this thing that [he] didn't do". He said that taking other men or sending men to prison is "what women they do" and that "it's a problem". Offender 6 stated that he does not feel like a hero, and still feels pain to this day. He said that he feels like a victim and murdered the women to avenge his own hurts as well as the hurts of other men who have been equally hurt by women this way. He therefore fits the descriptions of both Victim and Revenger, regarding his motive. 10. Why would you choose one victim instead of another? Were all your victims similar? The offender stated that he is not angry at all women. He explained that he would meet a woman and propose a relationship which was "all fine". However, when she said that she loved him and another man, then he would become angry. He explained that he would

make telephonic arrangements with his girlfriends to come and visit him. He would think to himself that she was coming since her man was not at the house, "so I must make revenge for that other man and I sacrifice myself for those men and also for myself". 11. Once at the crime scene, how long on average would you spend with your victim when you started to attack them? The offender said that he would spend enough time to make sure this woman loved him and she's "got other man". When certain that she "keep doing wrong", he would then murder her. He could therefore not pinpoint a time or average length of time. 5.1.7 Offender 7. Offender 7 was an adult White male convicted of seven murders that occurred over a six year period in the Eastern Cape. He murdered his own daughter and targeted male street children and adult female sex workers, sodomising them and strangling them as he climaxed. He performed necrophilia with many of the bodies and also ate the nipples and external genitalia of one of his sex worker victims. As a consequence, he was sentenced to life imprisonment. He was interviewed at Mangaung Correctional Centre and had been incarcerated for 16 years at the time of interviewing. Figure 16 Drawn mental map of Offender 7. 1. Why did you choose that particular area? a. To meet your victims Offender 7 said that he met his victims at Happy Valley since he loved that area of nature and felt peaceful there. He said that some of the sex workers were picked up on the streets, outside the Red Lion Hotel, and then escorted away by foot to various places where it was "dark" and had "plenty hiding places". He said that he could not recall the others. b. To murder your victims Offender 7 said that he took these victims "away" from his own area and to different places where "it was more peaceful to do the thing". He said that he only took his daughter to his favourite spot. The others were murdered and left in various places: next to the freeway, under the bridges; by the harbour where it was quiet, at St Georges Park; in TigerKloof; at the High School Cilliers; by palm trees; and at Prince Alfred Park, opposite a primary school. 2. Did you have any residential/occupational/other association or history with the meeting/murder locations? The offender mentioned that he lived within the broader area of the sites where he met and murdered his victims, although he stated that "none done in my area where I stay. I keep my area clean". He lived with a "Coloured woman in a Coloured community" and said that he walked lengthy distances to the common meeting places and subsequent murder sites, ranging between 50 m and 10 km from his house. 3. Why did you keep returning to these murder sites? Offender 7 said that he could not say why, other than that he sought "quiet" places at night. He added that he especially liked the palm trees in parks as this reminded him of Jesus who rode on a donkey over them. The offender stated that he gave his victims' souls to Jesus, saying "this one is for You". 4. During your series, were you aware that the police had already discovered the other bodies? Did you then relocate to another area? The offender commented that he was aware that the police had discovered his daughter's skeleton, but not the others. He said that he had to show the police and "didn't worry either way". He confirmed that he did keep relocating murder sites. 5. What caused you to relocate to another area to commit more murders? Offender 7 explained that he did not want the same environment all the time and "wanted a change of everything". He also said that "you can't pick bodies up in one place all the time" and that he "didn't want them [the police] to get on top" of him. 6. Did you return afterwards (without a victim) to check on a body or to see if it had been discovered? If yes, why? "Yes", he said, adding that he would feel mighty at the thought of "I decide who lives and dies". He stated that initially, during the attack, it felt like he was fighting a monster and not a person. However, later when he "got back" to himself, he returned to the body in a clearer state of mind and realised "it's a human". 7. Did the police find all the bodies? He answered, "I think most of them". He said that he showed the police two of the crime sites and told them about the others. 8. Did you want the bodies to be discovered? If so, why? "Yes" because he realised that he needed to stop. He was taking increasing amounts of alcohol and drugs to try and forget about his murders and told himself that it could not continue. 9. Did you ever return to a crime scene to watch what the police were doing? He replied, "Ja". a. If yes, why did you do that? The offender said that it "gave [him] a satisfaction" and that he wanted to see "how the police handle this crime scene". b. If yes, did you speak to the police at the scene (what about)? He answered, "No". 10. What was the type of area you preferred to take your victims to and why? He said that he liked "quiet and peaceful areas". 11. Which of the following four options would you say best describes how you saw yourself in your murders: The Victim (I felt confused, powerless/wanted it over) The Professional (It was an exciting, risky, adventurous job/I was in control and powerful) The Revenger (It was the only thing to do that mattered and it was right to get my own back) The Hero (It was a manly mission to restore honour, respect/couldn't stop/nothing special) The offender said that he was angry and fought with God. He described how as a youngster, he was abandoned by his parents, mishandled by his stepmother and also raped by a man. He was angry and had asked God to help him "but God didn't want to help". "I wanted to be God" and decide who lives or not. He said that he wanted to feel "mighty, powerful". He would talk to God in the quiet and tell him, "I don't want their souls; just their flesh". He told God that his victims were crying for Him. The offender's power lust thus classifies him in the Professional motive category. 12. Why would you choose one victim instead of another? Were all your victims similar? The offender began by saying that he murdered his own daughter since her stepfather was raping her and that he "couldn't take it that she must go through the same pain" as him. In respect of the street children victims, he said that he picked on boys and had sex with them because he was raped as a child and murdered them because he did not want them to also experience the pain he had afterwards. He added that he did not want them to become like him and that "they mustn't become mightier than me, so I killed them". The offender did not comment on his adult victims other than to say that he had told his childhood perpetrator who abused him, "When I'm big, I'm coming for you". 13. Once at the crime scene, how long on average would you spend with your victim when you started to attack them? The offender said that with the exception of his daughter, he had sex with his other victims first and then murdered them. He did not elaborate on how long this took, however. 5.1.8 Offender 8. Offender 8 was an adult Black male convicted of murdering three Black girls, aged between 7 and 13 years, over a period of 15 months. The offender confirmed that in all of the cases, death was caused by strangulation. The murders were committed in the Free State in a mealie field. At the time of the interview, the offender had been incarcerated for 13 years and was serving his life sentence at Mangaung Correctional Centre. 1. Why did you choose that particular area? a. To meet your victims The offender stated that he lived and worked as a driver on a farm and that first victim was a young girl that he happened to notice walking from town past the farm. His next two victims were murdered during the period when he worked as a taxi driver in the "location". He said that he would just see the victims come walking past in the location as he drove his taxi in this area that he knew. Both young victims were encountered when he offered them a lift in his taxi. Figure 17 Drawn mental map of Offender 8. b. To murder your victims The offender said he took his victims to mealie fields, where it was quiet, so that he could rape them there. He stated that he took the first victim to mealie fields that were 2 km down a dust road from the farm where he worked and stayed. He explained that the fields were situated between the farm and a "location" he frequented, which is how he knew about them. His next two victims were driven from the "location" out into other mealie fields, roughly 10 km away. 2. Did you have any residential/occupational/other association or history with that area? a. Meeting location The offender said that he lived and worked on the farm with his first victim and worked in the location as a taxi driver where he saw the next two victims. b. Murder location He stated that he worked close to the mealie fields and knew of them because of his travels between the farm and the location, and later because of his travels as a taxi driver in and around the location. 3. Why did you keep returning to these areas? He answered that the meeting and murder sites were easily accessible because he worked nearby. 4. During your series, were you aware that the police had already discovered the other bodies? Did you then relocate to another area? If not, why not? Offender 8 said that he had heard about the bodies of the first two victims being discovered in the mealie fields. He stated that he did not know why he returned to the same area with the third victim, however. 5. What would have caused you to relocate to another area to commit more murders? The offender responded that he did not know. 6. Did you return afterwards (without a victim) to check on a body or to see if it had been discovered? If yes, why? "No, just left it", he replied. 7. Did the police find all the bodies? If not, why not? Did you have another area that the police did not find? "Yes", he said. 8. Did you want the bodies to be discovered? If so, why? Offender 8 stated that he did not want the bodies to be found and that he only pointed them out to the police afterwards. 9. Did you ever return to a crime scene to watch what the police were doing? He answered, "No". 10. What was the type of area you preferred to take your victims to and why? He said that he picked a place like the mealie field where he and his victim could not be seen. 11. Which of the

following four options would you say best describes how you saw yourself in your murders: The Victim (I felt confused, powerless/wanted it over) The Professional (It was an exciting, risky, adventurous job/I was in control and powerful) The Revenger (It was the only thing to do that mattered and it was right to get my own back) The Hero (It was a manly mission to restore honour, respect/couldn't stop/nothing special) Offender 8 stated that he felt like a victim. He relayed how he did not know his father and how his mother went to stay with other men. His grandmother raised him, but he added that his grandparents struggled financially. As a result, he was asked to leave school at the age of 14 years. He helped out on the farm where they lived, over the weekends. During the week, he walked alone to town which was "not far", and worked at the house of a White man. He stated that this man gave him money but also gave him "love" and raped him many times. He said he was afraid and did not tell his grandparents about the repeated trauma, but said that it angered him and that he felt victimised. As he became older, he said that "this thing was eating me, eating me, eating me, eating me", referring to his childhood abuse. When he was 22 years old and married, he told his wife about the abuse but she dismissed it, telling him that it was a long time ago. 12. Why would you choose one victim instead of another? Were all your victims similar? The offender said that his victims were all different and that he did not know why he chose them other than that he just happened to see them then. 13. Once at the crime scene, how long on average would you spend with your victim when you started to attack them? He answered that he asked them first for consensual sex, then forcibly raped them and murdered them thereafter. He did not offer any specific time period, however. 5.1.9 Offender 9. Offender 9 was an adult White male convicted of four murders that occurred over eight years in the Eastern Cape. He was accused of targeting White sex workers, whom he raped, assaulted, mutilated and murdered, as well as of the murder of a White man. The offender did not himself mention rape or mutilation, however, and stated that none of the murders were intentional. At the time of the interview, he had been incarcerated for 15 years and was serving his life sentence at Kroonstad Correctional Centre in Medium A. Figure 18 Drawn mental map of Offender 9. 1. Why did you choose that particular area? a. To meet your victims Offender 9 said that he suffered from "anxiety depression" which is a "very very bad sickness". On the night of the first murder, he described how he had wanted to get away from the house, because he was having trouble with his girlfriend, to go somewhere to sit still and "rethink over it". He was in Main Street, 3 km from home, where he worked in security at the nightclubs in the area. It was his night off and a sex worker approached him in his car. She asked him to take her somewhere. They argued and she drew a knife, after which he assaulted her with the car door and "somehow the knife went into her; I don't know where". The offender looked in his rear-view mirror and recognised a gang called The Untouchables coming. He described how the gang was renowned for using sex workers to lure people back to their houses and then do "whatever". He felt set up and left immediately, thinking that she would be alright as others would be with her. The offender stated that the victim had come onto the street from one of the two nightclubs there, "one above the steps and another one at the bottom". He left her on that street but said that he was puzzled to later learn that her body had been "found in the street above it" on the steps of the municipal building. The second victim was found at the Station Bar, 3 km from his home, where he helped his friend, the owner, with security. He stated that two sex workers claimed that he had dropped them off at the Red Windmill, 5 or 6 km from the bar, and that he had taken their friend. He offered a defence as to why it was improbable and impossible that he had murdered her. At the time, he was working for a "filthy" doctor whom he described as the "mafia" since he felt "nothing for nobody". The offender was his bodyguard, his driver, his head of security and he managed many of his buildings, renting out accommodation for him. The offender claimed that he was "actually working undercover to bring this guy down because of all his tricks and things: stealing from the poor, killing people for nothing". The third victim was a sex worker, though he claims not to have known that, who was renting a room in the boarding house where he resided. He said that she worked for an Italian Restaurant and that he only gave her accommodation because he "knew she could pay". He described the boarding house as being in a "dangerous gangster area" and that because he always had to see what was going on, he never locked his door. One evening, while he was temporarily hosting a young friend who had run away from home, the offender described how the sex worker tenant walked into his room and exposed herself to the school child. He said, "I don't know. Things happen too fast. I tried to get them separated or whatever". Then, as he pushed her towards an old unstable chair to get out, the small vegetable knife that he had been using went into her, though he does not know where. The offender assured the youngster that he would handle the situation and asked a man who was staying on the streets for his assistance to "take the bag [with the body] and drop it somewhere". He said that he felt "mixed up" about what happened and that it was "a mistake; an accident". He said that he "could not get over it. It ate me up". Thereafter, he terminated his employment with the doctor and left the boarding house where he had resided. He had grown fond of an old man whom he regularly saw at an Indian Restaurant "two streets up" that he frequented for drinks. The old man was "running from the same mafia man" and he offered the offender accommodation at his boarding house "two streets up" which was isolated and thus safer, but still located between the doctor's buildings. He began working for a security company. The Offender explained that he returned home one day and found another tenant there who used to rent previously with the old man. The tenant was to be his new roommate: the offender slept in the bed and the new tenant on a mattress. The offender described him as a "strange man" who drove him "crazy" and got on his nerves with his "strange habits" of simultaneously taking tablets, alcohol and Marijuana. He complained that this new tenant drank too much, wasted the offender's cooking and money, was messy, and he never listened. He finally informed the old man that he could no longer live with the tenant. On returning home one early evening, the offender said that he found the man passed out. There was a socket spanner next to him. He stated that he touched the shoulder of the tenant to wake him for food but that the tenant suddenly hit him on the mouth with the tool. The offender said that he lost control and beat the tenant, kicking him "too high in the Adam's Apple" and with enough force to send him out of the door and down the stairs. He added that this was the only person that he moved, placing the man on top of a dustbin, and telling him that he would find help before running down the "steep hill from the top to the club at the bottom". He said that he does not recall what happened thereafter and that he woke up in hospital with stitches close to his teeth. He was arrested but said that the incident was an "accident". b. To murder your victims Offender 9 said that the murders happened spontaneously at the meeting places where the situations played out. 2. Did you have any residential/occupational/other association or history with the meeting/murder locations? The offender said that the meeting/murder places were close to his homes. He explained, "I know PE very well" and that he had worked in the nightclubs security and later as a "PI" there. He loved the "beautiful place with friendly people". He stated that the problem is "the gangsters who rob and kill you if possible, if they see you in nice clothes, watches etc.". 3. Why did you keep returning to these areas? He said that it was because of his work and also for recreation purposes: he frequented the clubs at times as well as an Indian Restaurant for drinks, nearby. 4. During your series, were you aware that the police had already discovered the other bodies? The offender stated that he only became aware of the discovery of the first two victims when he was in court. The third victim's body was reported in the newspaper while he assumed that the police had found the fourth victim after they collected the offender from hospital and arrested him. 5. What caused you to relocate to another area to commit more murders? The offender stated that he was working undercover for the police so he had to move around to avoid being targeted by the Muslim mafia who wanted him because he had too much information. 6. Did you return afterwards (without a victim) to check on a body or to see if it had been discovered? "No", he answered. 7. Did the police find all the bodies? If not, why not? Did you have another area that the police did not find? He stated that he knew that the third victim was found, but could not vouch for the first two victims who had been murdered years before. He stated that there was no additional area that the police had not found. 8. Did you want the bodies to be discovered? If so, why? "Ja", he said, because he does "not believe in hiding things". He said that one "must come clean before God" and thus confessed in court and "played open cards with the police". 9. Did you ever return to a crime scene to watch what the police were doing? He responded, "No". 10. What was the type of area you preferred to take your victims to and why? The offender stated that he murdered them at the scene and did not move them elsewhere afterwards, barring his last victim that he had lifted up onto a dustbin. 11. Which of the following four options would you say best describes how you saw yourself in your murders: The Victim (I felt confused, powerless/wanted it over) The Professional (It was an exciting, risky, adventurous job/I was in control and powerful) The

Revenger (It was the only thing to do that mattered and it was right to get my own back) The Hero (It was a manly mission to restore honour, respect/couldn't stop/nothing special) The offender said that he never thinks of himself as a hero or a professional. He stated that he does not agree with how gangsters operate and that he had felt like a victim at the time. He relayed how there was a "lovely woman" in his life two years prior to any of the incidents, but that they could never marry as her wealthy parents did not approve of him. He said that he developed an "anxiety depression" and that a doctor told him that he would commit a murder but said that he did not believe him. He said that he "lost control" because he "couldn't understand why a beautiful relationship went so wrong". The offender expressed that "through the years, this whole thing was eating me up because I'm not a murderer. I'm actually a very lovable person; it's just I've got a very bad temper". When he was arrested for his last murder, he told himself to plead guilty to all the murders "and get it over and done with". He said that he was tired of arguing, he wanted a clear conscience and to get on with life. He had been to Valkenberg for observation for a month and was put on psychiatric medication. He said, "I lost my parents, lost my house, lost everything, my girlfriend and I went our separate ways. So I came to prison". 12. Why would you choose one victim instead of another? Were all your victims similar? The offender said that he did not pick people, but that it was "unforeseen circumstances". He said that he had been drinking a lot at the time as he was feeling hurt. The first two sex workers had approached him and the third was a tenant of the boarding house he managed and lived in, who walked into his room. He stated that he "did not really know" them. The last victim was a roommate, with whom he lost his temper in the "heat of the moment" and killed by "accident". 13. Once at the crime scene, how long on average would you spend with your victim when you started to attack them? The offender answered that he did not spend much time with any of the people and that the incidents "happened spontaneously". 5.1.10 Offender 10. Offender 10 was an adult White male police officer convicted of five murders that occurred a little over three years in Gauteng. He targeted women ranging in age from 16 to 74 years, whom he raped and assaulted and finally shot. At the time of the interview, he had been incarcerated for 21 years and was serving time in Boksburg Correctional Centre. Figure 19 Drawn mental map of Offender 10. 1. Why did you choose that particular area? a. To meet your victims Offender 10 said, "Well, the first one was right next door to me". He explained that he saw someone leaving and thus he assumed that no one was there. His intention was to steal money but his first victim surprised him as he entered the property. He strangled her. The next two murders were committed around the area of the SAPS barracks where he was staying. These victims lived "close by" and their homes could be seen from the barracks and from wandering around the area. He stated, "When I see a window open, that's the opportunity". The fourth victim lived two doors down from his fiancée's complex in the neighbouring suburb to where his parents lived, while the final victim's house was around the corner from his parents' home. b. To murder your victims Offender 10 said that the meeting and murder sites were "one and the same place". 2. Did you have any residential/occupational/other association or history with the meeting/murder sites? The offender said that he lived with his parents next door to the first victim. He relocated with the police to another area and murdered his next victims next to, behind, and a block away from, the barracks as he did not know the broader area well. The fourth victim lived in the complex where his fiancée resided with her parents and the final victim was "right around the corner" from his parents' house. 3. Why did you keep returning to these areas? He replied that it was perhaps because he had "a need to repeat the things" as he was staying in the areas and "I know the area". He said that he could see opportunities through the open windows. 4. During your series, were you aware that the police had already discovered the other bodies? Did you then relocate to another area? If not, why not? The offender said that he was aware as he watched the news on television. After the second murder, and while staying at the police barracks, he was requested by the Captain to accompany him to a golf course in a township to search for a serial murderer. He was ordered to shoot the perpetrator if he found him but he tried to run away. He explained that the local police had used a lady (who lived in nearby flats next to the second victim) to bait him and she said she knew him. Thereafter, he was made aware at the barracks that the police intended to put out a Facial Composite and he became nervous. He stated that they wanted to do a parade and fingerprint at the barracks. Although the appointed people never turned up, the offender chose to leave and he put in a request for a transfer back to where he had resided with his parents. 5. What caused you to relocate to another area to commit more murders? The offender said that he left his parents' home as he was posted to work in a township and did not want to travel long distances. He thus needed to live closer by. He stated that he targeted his surrounds since this was where he was staying. Thereafter, when things got "hot" there and he was aware that the police were searching for a serial murderer, he arranged to be transferred back to his original suburb. He said that his behaviour confused him, that he was afraid of getting caught and that he also believed that the problem might be associated to that particular area. However, after he had moved and while visiting his fiancée one day in the neighbouring area, he said that he had seen an opportunity. He went back home and then returned later that night to the last victim. 6. Did you return afterwards (without a victim) to check on a body or to see if it had been discovered? He answered, "No". 7. Did the police find all the bodies? He confirmed that the police did find all the bodies. 8. Did you want the bodies to be discovered? If so, why? He replied, "Ja, I left them there". He said that he had even left the cartridge casings of the firearm at the scenes, though not on purpose, and that he only picked up one because he saw it. 9. Did you ever return to a crime scene to watch what the police were doing? He said that he did not return to the scenes as he was aware that the police put officers with binoculars on the roof of the barracks to look for people wondering about. He added that he did not use police surveillance to find opportunities. 10. What was the type of area you preferred to take your victims to and why? The offender explained that he "didn't take them anywhere" but chose their homes because of "easy money and credit cards, piggy banks, safe keys". He stated that his modus operandi was to look for or wander around in search of a suitable target – a woman alone in a home in which he could gain access – and that he would then return later to commit the crime. Due to these opportunities, he stated that he had "no need for going for people on the street or bushes". 11. Which of the following four options would you say best describes how you saw yourself in your murders: The Victim (I felt confused, powerless/wanted it over) The Professional (It was an exciting, risky, adventurous job/I was in control and powerful) The Revenger (It was the only thing to do that mattered and it was right to get my own back) The Hero (It was a manly mission to restore honour, respect/couldn't stop/nothing special) The offender said that he "can't say one particular reason" but that there were a "couple of reasons that developed from one to the next". He mentioned that he initially started stealing from his mother's bag because he lived in a strict house and felt angry that his father had too much power over him. The behaviour "became a habit" and he started shoplifting. He said that he "enjoyed that power" because he was getting away with it and he felt that he was good at it. Hence, it progressed. The offender described how he would break into factories and got into the safes, taking "just a bit" so that he could "go back and get some more". Later he began housebreaking through open windows. He explained that he initially went into people's houses to steal money when they were watching the eight o'clock news but that this eventually "developed into doing other things". After he had moved to the Barracks and began working in a dangerous area, he was permitted to take his weapon home. This gave him power, as he described the first murder as being too difficult physically, and would help if "things got tough or too messy" in future crimes. The offender explained that he had anger in him and that he enjoyed the power. He stated, "the rush is like a drug; you want more; you can't stop" and added that "when you see an opportunity, you go for it". 12.Why would you choose one victim instead of another? Were all your victims similar? The offender said that his victims were not similar by age or race but that they were targeted "simply by opportunity". However, they were all women though, since they are an "easy target". 13.Once at the crime scene, how long on average would you spend with your victim when you started to attack them? Offender 10 answered that he spent different time periods with his various victims. The first victim was attacked immediately as she "just appeared" and he needed to "get her quiet". With the second and third murder victims, he "did his things", raped them and then killed them. Prior to the latter two victims, the offender had entered the homes of two other women on separate occasions. He stole some items before leaving. He later returned to both women and raped them, but said that since they could not identify him (the lights were off), he did not murder them. He described his timeous involvement at the one of the rape victim's home. He had initially seen that a woman lived there and left. He later returned and took her car for a joyride. She reported it stolen and he took it back some time thereafter. He went again to her home, found her there, and then raped

her. Murder victim four was raped and shot. The offender stated that he was unable to penetrate his last young victim, ejaculated and then shot her too. 5.1.11 Offender 11. Offender 11 was an adult Black male convicted of two murders committed during two separate time periods, between which he was in prison. He raped then killed a Black woman and a White woman, both murders occurring in Gauteng. At the time of the interview, he had been incarcerated for nine months in Modderbee Correctional Centre, and is currently still awaiting trial for rape charges in Gauteng and Kwazulu-Natal. Figure 20 Drawn mental map of Offender 11: first map. Figure 21 Drawn mental map of Offender 11: second map. 1. Why did you choose that particular area? a. To meet your victims The offender said that he was walking down a road to a "location" to go and help a friend who owned a carwash there. He stated that the location was a distance from his home and that it would take him under an hour to get there. He said that he was smoking drugs at the time. En route, he met a girl who was an unplanned first murder victim. With the second incident, he described coming out of a nightclub and down stairs one evening. He said that he saw a maroon Volkswagen Golf and a woman that he knew and with whom he used to smoke. She called him over and asked him to hide her cocaine. Suspicious cops separated them. The offender walked home, which was a few kilometres away. He said it took about an hour. The woman returned later to his home in her car, since he had her drugs. Together, they went off to smoke the drugs in the park, where it was private. He stated that at some point, when he was drunk and high, they began to fight for her car keys. He said that he did not stab her but kicked her and that she, an asthmatic, passed away. b. To murder your victims The offender said that he knew the area well since he had lived in two places around there. With the first incident, he described how he was walking down a pathway towards a river and that the first girl was coming from the other side. They met at the junction. From there, he took her up the river to a bush area. He said that he took her possessions and then murdered her and left her there. After he had murdered his second victim in the park, where he enjoyed smoking drugs, the offender said that he was afraid and wanted to "hide" her body. He selected an open soccer ground for the body disposal that had an open drainage system where water is drawn from. He stated that he knew about it, from playing soccer there. 2. Did you have any residential/occupational/other association or history with that area? a. Meeting location The offender said that he knew the area well where he met both of his victims. He said that he had been living there with his girlfriend in a flat in 2nd Street since 2005. Before that, he mentioned that he had lived further up in 8th Street after his prison sentence for his first murder. He frequented the nightclub which was nine streets up from the park where he smoked drugs and he used the pathway across the river to visit his friend's carwash in a location further away. b. Murder location He reiterated that he was en route to his friend when he met his first victim and that he thus moved her nearby to a bushy area before murdering her. He also repeated that he used to like smoking dagga in the park, which is why they were there when his second victim was murdered. 3. Why did you keep returning to these areas? The offender stated that he commonly walked the pathway by the river to visit a friend and that he liked and frequently smoked in the park. The offender added that the park was also the location from which he was collected and dropped off daily by the garden service for which he worked. 4. During your series, were you aware that the police had already discovered the other bodies? Did you then relocate to another area? He stated that he was aware, since a friend told him that the police had found a body. When this friend informed on him and he realised that the police were looking for him, he said that he ran away and that his girlfriend returned to Zimbabwe. 5. What caused you to relocate to another area to commit more murders? He said that since the police were looking for him, he moved out of the area. He was apprehended before any further murders were committed. 6. Did you return afterwards (without a victim) to check on a body or to see if it had been discovered? If yes, why? The offender claimed that he returned to the body to check if the person had died and to help her if she had survived. 7. Did the police find all the bodies? Did you have another area that the police did not find? He confirmed that all of the bodies were discovered and that there were no other areas. 8. Did you want the bodies to be discovered? If so, why? "Yes", he said because he regretted it and wanted them found for their families' sakes. 9. Did you ever return to a crime scene to watch what the police were doing? a. If yes, in how many of your crimes The offender said that he did return to the park, but not to watch the police at his crime scene. b. If yes, why did you do that? He said that he often passed by the park area as he was still always smoking there, and stated that he saw an Indian policeman who was investigating the crime. c. If yes, did you speak to the police at the scene (what about)? The police official reportedly looked at him and asked if he had seen a White woman there, to which he replied that he had not. 10. What was the type of area you preferred to take your victims to and why? The offender explained that he did not take his victims anywhere but that he murdered them at the locations he routinely frequented as part of his living routine. He expressed that the murders were unplanned and that they occurred where they did as a result of presented opportunities. 11. Which of the following four options would you say best describes how you saw yourself in your murders: The Victim (I felt confused, powerless/wanted it over) The Professional (It was an exciting, risky, adventurous job/I was in control and powerful) The Revenger (It was the only thing to do that mattered and it was right to get my own back) The Hero (It was a manly mission to restore honour, respect/couldn't stop/nothing special) The offender said that he felt like a victim because of his very difficult upbringing. He described how he had not grown up with his family and that he had no mother. He said that he was raised by relatives who usually blamed him first for everything. They accused him of bringing disorder whenever there was fighting in the house. In addition, he was forced to sleep in a room with adults and thus witnessed everything that went on there. From the age of nine years, he said that he was forced to have sexual relations with female family members and that he started seeing women as "common" because they were not protecting him but abusing him. He began to hate women and eventually went to friends who would help him with food and other basic necessities. 12. Why would you choose one victim instead of another? Were all your victims similar? He repeated that he hated women but said that he had no specific reason for targeting the particular individuals that he did. He stated that he met them as he was moving around, and that he would usually have taken drugs then. 13. Once at the crime scene, how long on average would you spend with your victim when you started to attack them? The offender answered that he did not spend time with his victims. He said that when they were alone, he would attack them straight away and that "it just happened". 5.1.12. Offender 12. Offender 12 was an adult Black male convicted of the murder of three Black female adults over a five-month period in 2008. Based in Gauteng, he had raped at least one of his victims and strangled them all to death. At the time of the interview, he had been incarcerated for about four years at Kutama-Sinthumele Correctional Centre. Figure 22 Drawn mental map of Offender 12. 1. Why did you choose that particular area? a. To meet your victims The offender stated that the first victim was an ex-girlfriend, whom he had met while living on his own in a neighbouring area. This was before he had met his father and had moved into the house where he resided at the time of the murders. The offender explained that he had phoned his ex-girlfriend on the way home from work "late" one evening "after 19h00". He was enquiring about a gym account number. She said that he could come by and collect it from her home, which he did. Later, she walked him halfway home. He stated that "it's not far" but that en route they started arguing. He wanted her to come back to his father's house and she disagreed. He added that his father was generally overseas on business. At the main road close to her home, where the offender would catch a taxi, there was a veldt. He said that he fought her in that veldt and murdered her. On the night of his second murder, the offender said that there was no electricity when he came home "late" from work. He said that it was "after 19h00" and that he took a five minute walk to the nearby shop to buy bread and milk for supper. There was a party going on. A woman in the street asked to borrow his cell phone to call her boyfriend to bring money. She promised to reimburse him for his airtime but he told her that he did not want her money. Instead, he asked her to come home with him. She agreed but said she would return to the party thereafter. They went home, spoke and had sex. When she wanted to leave, he argued with her and decided that he would escort her to her house (somewhere by the garage, she said) instead of back to the party. They started walking in the opposite direction to the shop, crossed a street and after about five minutes, reached an open space. The offender said, "I know that place". He mentioned that he always used to go past it when travelling to work via taxi and also when he walked occasionally to the garage to buy airtime. The offender attacked her there, adding, "I don't know why I didn't take her back where I met her". The offender denied committing the third murder, sighing as he said her name, "She was my girlfriend". She was reportedly due to come to his house on the evening of her murder to collect a video camera that she had wanted to borrow, but he

claimed that she never arrived. He was adamant: "With that murder, I know nothing about it", and stated that he was very upset about her death. b. To murder your victims He stated that since he resided there, he was very comfortable and familiar with the area and that he knew where all the open spaces and veldt areas were. 2. Did you have any residential/occupational/other association or history with that area? a. Meeting location Offender 12 described being raised by his grandmother in the Free State before moving to Johannesburg in 1999 after matric. He initially moved to his mother in Walkerville but said that her employer hated him so he left after a month and went to stay at his cousin in Weilers Farm. He began working and within a year, had bought his own house. He met his girlfriend, and his first murder victim, during that time when she used to visit her aunt who lived "not far" (300 to 400 m) from his house. The offender said that he resided there for three years prior to moving in 2005 to his father's house in Orange Farm, where the murders occurred. He said that his father asked him to move since he was always working outside the country. His father had a wife in Sebokeng with three children and another wife in Soweto with no children. b. Murder location The offender stated that his first victim was murdered about an hour's walk from his father's house, en route to his girlfriend and next to where he would catch taxis. The second victim was found about "less than five minutes" walk from his father's home in an open space that he knew well and travelled past frequently. He said that the third victim was apparently found in a veldt in Orange Farm but that he did not know the distance from the house since he did not know which veldt. The offender therefore had a residential association with most of his murder locations. 3. Why did you keep returning to these areas? Offender 12 queried whether he might not have understood the question. He then replied, "It was simple. I lived there. That was the reason". 4. During your series, were you aware that the police had already discovered the other bodies? Did you then relocate to another area? If not, why not? Regarding the discovery of the first victim, the offender paused and then said, "Um, I can say yes". He and this ex-girlfriend had a mutual friend who lived in his street. She asked the offender if he knew where the victim was, since she was missing. A few days later, she informed the offender that the police had found her body. The offender expressed that he did not realise that by gripping his ex-girlfriend the way he did, "that she would pass on". He "thought that she would wake up and go home". He said that he was angry and upset at himself and that he had contemplated going to the police but does not know what stopped him. Instead, the anger fuelled another murder when he met the woman at the party one or two months later. The offender deliberately did not relocate areas but brought her back to his father's house. He said that he had wanted to murder her in the house "so that people and the police could come and arrest" him. However, she was purportedly "so nice" to him that he decided to escort her home instead. En route though, as he was talking to her but finding her distracted on her cell phone, possibly to her boyfriend, something was triggered and "it just happened". He said that he was not aware that the second body had been discovered by the police and only learned of this in court. 5. What would have caused you to relocate to another area to commit more murders? He offender sighed and said, "Ai, I don't know. I was angry at myself about this". 6. Did you return afterwards (without a victim) to check on a body or to see if it had been discovered? "No", he replied. 7. Did the police find all the bodies? He answered, "Yes". 8. Did you want the bodies to be discovered? If so, why? The offender said that he wanted the victims' bodies to be found and that he did not want to murder that first woman. He wanted to be arrested. 9. Did you ever return to a crime scene to watch what the police were doing? He said that he did not. 10. What was the type of area you preferred to take your victims to and why? In the first instance, he said that he "did not decide". They were going to the taxi rank and that just happened to be where they were when they began arguing. In the second incident, he said that it "just happened" and that it was not in a particularly private area either. 11. Which of the following four options would you say best describes how you saw yourself in your murders: The Victim (I felt confused, powerless/wanted it over) The Professional (It was an exciting, risky, adventurous job/I was in control and powerful) The Revenger (It was the only thing to do that mattered and it was right to get my own back) The Hero (It was a manly mission to restore honour, respect/couldn't stop/nothing special) The offender explained that in 2008 he was involved in a rape case with his young girlfriend. He said that he had taken advantage of her but that he did not view it as rape. After that, he said that he did rape a woman and saw this as revenge for his traumatic background. He described how at the age of six or seven years, his aunt forced herself on him sexually. He said that he did not know what was happening but attempted to live a normal life thereafter and "forgot" about it. Only when he came to prison and completed a programme on child sexual abuse, did he realise that that had also happened to him. He told no one. When growing up, he said that he was "always angry to others" but did not know why. He was also upset about the fact that his parents had not raised him. He added that another uncle (from the maternal side of the family) also used to abuse him a lot. He concluded that his rape of the second victim and the murders of both women, were about anger and revenge and thus, saw himself as a revenger. 12. Why would you choose one victim instead of another? Were all your victims similar? Offender 12 stated that he does like women and has had many girlfriends. However, if one upset him, he would simply leave her for another. He said that he would be angry if she then tried to follow him, but would suppress it and not say anything to her. He said that all of his victims were female and that the commonality that they shared was that he took advantage of them as women. Furthermore, two of the victims had been in a romantic relationship with the offender. 13. Once at the crime scene, how long on average would you spend with your victim when you started to attack them? The offender expressed that even though he had premeditated murdering the second victim, the attacks on both victims only happened when he "snapped". He said that being pushed and pushed with repetitive questioning by "male or female" when he was trying to keep quiet and not reply, angered him. He also stated that the second victim's distraction on her cell phone and her taking time to respond to him, triggered him off. 5.1.13 Offender 13. Offender 13 was an adult Black male convicted of a murder series of seven murders in less than three months during 1998. He had been released from prison (for rape) five months prior. The victims, two women and five male youths, were lured with promises (such as a bicycle) from a popular walking area and up a desolate hill in Gauteng. Some of the victims were raped. They were all strangled. They were then ritualistically placed on their stomachs with their shoes removed and their bodies covered with branches. At the time of the interview, Offender 13 was serving his seven life sentences at Kutama- Sinthumele Correctional Centre and had been incarcerated for 14 and a half years. Figure 23 Drawn mental map of Offender 13: first map. Figure 24 Drawn mental map of Offender 13: second map. 1. Why did you choose that particular area? a. To meet your victims The offender answered that he was not choosing particular areas in town to meet his victims. He said that he would go to work, which was in security and right opposite the train station, "and come back and then go and come back". He explained that when he was off duty, he slept at the top of a mountain in a tower near a high school. To save money, since this was an expensive 30 minute drive in the company bakkie from work, he slept in town when he was on night duty. The offender said that he was trying to earn some extra money so that he could attend one of the colleges in the vicinity. He managed to get lifts on the company's inspection patrol truck to make the five to ten minute drive to the mini market to purchase greens that he could sell, back at the train station. b. To murder your victims The offender complained that after he had bought and sold market goods, he would have people in town who would try to mug him and steal money from him. He said that he would run away and that the thieves would chase after him as he headed back to the mountain. Hence, he murdered them on the mountain. 2. Did you have any residential/occupational/other association or history with that area? a. Meeting location Offender 13 recapped that he worked in town and that he bought and sold market food at the train station. This was where he met his victims. b. Murder location He slept in a tower on top of the mountain, which was a few hundred metres away from his crime scenes. 3. Why did you keep returning to these areas? The offender said that he was "buying and selling, buying and selling" and that he could not always return to his place since this was expensive. Hence, he remained in or near the town much of the time, looking for additional piece jobs. He therefore returned to these areas because of work and residential reasons. 4. During your series, were you aware that the police had already discovered the other bodies? Did you then relocate to another area? If not, why not? The offender that he did not know that bodies had been discovered as he did not even know that they had died. He said that he thought his victims were "waking up" in the night and then getting up and leaving. As a result, he did not relocate areas but would leave his successive victims in the same place. 5. What would have caused you to relocate to another area to commit more murders? The offender answered that he would see police patrolling the area but that he was not concerned. He knew that they worked around there and did not think "they

were coming for a trace". As he was not worried, he said that he felt no need to change areas. He explained that it was not his aim to murder anyone but that all he wanted was money for a car, to go to College, to get a serious job, and a house. He said that if he had known that the police knew, he "was not going to do it all at once". He said that he would have relocated "if I get a job". 6. Did you return afterwards (without a victim) to check on a body or to see if it had been discovered? If yes, why? The offender affirmed that he went back to all of the bodies after a "week or two" but did not find any of them. When he had nothing to do, he said that he wanted to go and realise "what is this thing of killing people", to see if they were dead, to see if their bones were there. Instead, he found that they had already woken up. 7. Did the police find all the bodies? Did you have another area that the police did not find? The offender stated that the police claimed to have found all the bodies but he said he was not sure if they did. He said that there were no additional areas and that "all of them [were] in the very same place". 8. Did you want the bodies to be discovered? Offender 13 said, "No" and that he just hoped that his victims would not wake up and come seeking revenge or tell on him. 9. Did you ever return to a crime scene to watch what the police were doing? He said that he did not return and did not see the police. He claimed that he was arrested by paratroopers. 10. What was the type of area you preferred to take your victims to and why? The offender described the murder site as "not in front of people", private and quite close to where he used to sleep. 11. Which of the following four options would you say best describes how you saw yourself in your murders: The Victim (I felt confused, powerless/wanted it over) The Professional (It was an exciting, risky, adventurous job/I was in control and powerful) The Revenger (It was the only thing to do that mattered and it was right to get my own back) The Hero (It was a manly mission to restore honour, respect/couldn't stop/nothing special) According to the offender, he had no motive. He said that first and foremost, he wanted to receive an education and better employment so that he could purchase a vehicle and a house, and succeed in life. 12. Why would you choose one victim instead of another? Were all your victims similar? At the beginning of the interview, the offender had described his victims as people attempting to steal from him. Later however, he said that the victims were similar in that he mistook them all for himself. The offender offered a confused account of how he had seen multiple versions of himself coming and going, walking in various places simultaneously. He said that this distressed him and that he elected to murder the other selves so that he could continue with his life. He claimed that he found himself following and "killing them" (the other selves) but subsequently realised that they were actually other people. 13. Once at the crime scene, how long on average would you spend with your victim when you started to attack them? The offender misunderstood the question and said that after he had initially met his victims in town, their murders occurred within a week. He did not express the duration of time that he spent with the victims after he had begun to attack them. 5.1.14 Offender 14. Offender 14 was an adult Black male convicted of committing three murders in Limpopo in 2007. At the time of the interview, he had been incarcerated for two years at Kutama-Sinthumele Correctional Centre. He denied committing any of the murders and hence the questioning is slightly different. Figure 25 Drawn mental map of Offender 14. 1. Who were the victims and did you know them? The offender said that the victims included a man, a young girl and a young boy. He stated that he knew the man as they used to reside in the same section of the location before the offender moved further north to a village with his mother and girlfriend. He added that he did not know the children but knew that the young boy had been accompanied by another little girl who was raped. 2. Did you have any residential/occupational/other association or history with the murder locations? He reiterated that he used to live in the location in which the murdered man's body was discovered. He travelled south past the location en route to work in Johannesburg during the week, and would pass it again when returning home to the village over the weekends. The young girl's body was found in the area that he frequented at times to drink beer and meet up with an ex-girlfriend. This area was south of the location. The third area, where the murdered young boy was discovered and his little female companion raped, was even further south from the previous site. The offender said that he would visit his aunt there sometimes. Offender 14 explained that there was one particular road that went from his village past all of the areas. Alternatively, if he travelled to Gauteng, he used the highway which also bypassed the areas. 3. How far were these murder locations from your home? The offender estimated that the location was roughly three to five km from his village. The next area was an additional 20 km further on although it took about an hour's drive to reach since flooding which occurred in 2012 caused silt from the surrounding villages to erode into the busy road. The final area was another 5 km further south. 4. Why do you think that the police arrested you? The offender said that he was initially arrested for the murder of the young boy and the rape of his female companion. After the raped child identified another perpetrator, the offender was released. However, when the man was murdered, he was questioned about him and he told the police that he knew him and used to live in his location. The offender went on to say that the police station close to his home remained in contact with another police station and that when they realised that he lived close by, they accused him. He believes that the police associated the crime sites to him since he had been in all of those areas. Furthermore, he had already been accused regarding the children and so the police simply grouped the crimes together and arrested him. He complained that the police took him to the bottom of a mountain, by the girl's bones, and coerced a confession out of him with a beating. He also complained that his DNA sample had not returned from Pretoria before his court date and that he was therefore blamed for the rape without evidence. They gave him life in prison. 5.1.15 Offender 15. Offender 15 was an adult Black male convicted of the murder of two teenaged girls, aged 14 years and 18 years respectively, in the North-West province. A few years prior to his arrest, the offender had been released from prison where he had been serving time for seven and a half years for assault and one murder. At the time of the interview, he had been incarcerated again for about ten years and was serving time at Kutama-Sinthumele Correctional Centre. He admitted to committing the initial murder, for which he was imprisoned, but emphatically denied murdering the two teenagers. Thus he too had questions pertaining solely to the exploration of his knowledge of the crime area. Figure 26 Drawn mental map of Offender 15. 1. Who were the victims and did you know them? The offender said that two younger girls were murdered in an area of Phokeng Village but that they were apparently from Wildebeesfontein Mineshaft #8, another section of the village. He said that he did not know them or how they were killed. 2. Did you have any residential/occupational/other association or history with that area? Offender 15 stated that he had been living in another area of Phokeng Village since 1961. He explained that when he received his taxi permit, he was allowed to work the route between the Rustenburg taxi rank and Mineshaft #8. He said that he did not choose this route but that it was chosen for him when he received his license. He added that other taxis also worked this route. He insisted that he drove five women from the taxi rank to Mineshaft #8 but that there were no young girls with them. He complained that there were no witnesses. 3. How far were these murder locations from your home/work? The offender said that he drove 15 km to get to the taxi rank, from which he began his route back and forth to Mineshaft #8, another 20 km away. He estimated that the distance between his home and the murder site was about 8 km while the distance from the taxi rank to the murder site was about 15 km. 4. Did you know about the murders? He responded, "Niks nie". The offender described how the police had taken him in for questioning regarding his details and his taxi kombi number. They released him and he returned to work. However, after they had checked his registration, he was brought into custody and placed in a police station cell for three months. He said that the police put a tyre on his head and wet it, which was painful. They demanded a statement but he insisted "êk ken fokol". He said that he has had no response to his appeal since 2006. 5. Have you been to prison before? The offender explained that he had been to prison in 2000 for assault and murder. He said that he knew the man, the victim, and that they were fighting for a passenger. He served seven and a half years for the incident. 5.2 Conclusion The analysis of these semi-structured interviews and drawn mental maps will now be presented and discussed in the following chapter. Until you have observed lions for an extended period, you have no idea how lazy they are (Bruce Bryden, on the least effort of predators) CHAPTER VI ANALYSIS As discussed previously, the aim of this thesis has been to further our understanding of the spatial behaviour of serial murderers within South Africa, particularly for the purpose of assisting the police in their linkage of multiple crime sites. Using content analysis, the transcripts of the semi-structured interviews of fifteen local offenders have been examined and will be discussed in the context of geographical profiling theory. Thereafter, the GPS coordinates of eight of the offenders, plotted and provided by the Investigative Psychology Section of the South African Police Service, will be discussed in terms of the comparisons between the offenders' coordinates and their drawn mental maps. The personal commentaries of the

remaining seven offenders on their mental maps will also be explored briefly thereafter. The final summary will be presented in the seventh and final chapter, followed by some recommendations for the future of geographical profiling in South Africa. 6.1 Summary of Offender and Victim Information Before the offenders' aggregate responses and identified master themes are discussed and related back to the research literature, especially within the South African context, a collation of information regarding the offenders and their victims is presented. 6.1.1 Offender demographics: race, sex, age. Of the 15 offenders interviewed, 11 were Black adult males and 4 were White adult males. Salfati et al. (2015b) also found that unlike the USA, all 33 local offenders in their study were male and mostly Black individuals. This is probably due to the fact that they are the majority within the country. In this study, the individual ages of the offenders, when they began their series, ranged from 18 to 53 years with the average age being 30.9 years old. These figures are comparable to offenders in the USA, as Salfati et al. (2015b) found the average age of their sample group to be in the late twenties or early thirties. Table 1 presents these offender demographics. Table 1 Interviewed Offenders by Race, Sex and Age RACE SEX AGE (YEARS) AVERAGE AGE Male 25 Male 25 Male 30 Male 30 Male 30 Male 32 Male 32 Male 35 Male 38 Male 42 Male 53 Total Black Males 11 33.8 Years Male WHITE Male Male Male 18 23 25 25 Total White Males 4 22.8 Years TOTAL OFFENDERS 15 30.9 Years 6.1.2 Total period of crime series. The series length varied significantly across the different offenders. For example, one offender's series lasted one day whereas others lasted a few weeks. Offender 13 was apprehended within three weeks since his victims were all disposed of in the same location. Some murders occurred over several months while others spanned over longer periods, even up to nine years. Offender 5 was a travelling offender who murdered in various areas, thus creating a broader search area for investigators and making it more difficult for them to connect the offender to his murders. Furthermore, Offenders 6 and 11 murdered their victims within two distinct time periods, separated by a number of years in which they had been imprisoned. The vast discrepancy between the time frames would make calculating an aggregate non-meaningful, and thus no average time period is offered. 6.1.3 Offender incarceration period at the time of the interview. The average incarceration period of the offenders at the time of their interviews was 11 years. The shortest time served was 9 months while the longest imprisonment at the time of interview was 21 years. 6.1.4 Prior criminal record. Of the 15 offenders, 5 had been previously incarcerated for crimes such as assault, rape and murder while an additional 4 had been convicted in cases involving fraud, rape, sodomy or murder. This means that over half of the sample group had already experienced arrests and/or convictions prior to their served life sentences. These only included the criminal activities of those offenders who were arrested. There may well have been other crimes committed by others in the group. Salfati et al. (2015b) found that most of their sample group also had previous criminal records. 6.1.5 Relationship status during their series. Salfati et al. (2015b) reported that the majority of the offenders in their sample group were in a relationship at the time of committing their crimes. In this study, all 15 offenders were in a relationship. Six offenders were married at the time of their arrest, five of them residing with their spouses. One offender was engaged but did not live with his fiancée. The remaining eight men had girlfriends, five of whom lived with these women. 6.1.6 Victimology: numbers and demographics. In their examination of FBI data, Rossmo and Davies (2001) established that American male offenders, on average, killed 13 victims. In this local study, the average number murdered by the sample group was 7.8 victims. Two offenders differed markedly from the average, murdering 16 and 38 victims respectively. If they were omitted from the calculation, then the average number of victims murdered by the remaining offenders was four victims. Could the substantially lower average in South African offenders, when compared to their American counterparts, be due to our faster apprehension times? Citing Labuschagne, the head of the Investigative Psychology Section of the SAPS, Hosken (2012) wrote that serial murderers are soonest apprehended in South Africa. According to the article, that average timeframe is two to six weeks while this is closer to two years in other parts of the world. In this study, the victim demographics varied. Racially, Black people were the most targeted group. Sex-wise, females were most victimised and age-wise, adults had the highest percentage. Put together, Black women were by far the most murdered set of victims, constituting over 62% of the total set of 117 victims. This concurs with other recent research that reports that most victims in South Africa are Black and young adult females (Salfati et al., 2015b). The next most targeted groups in this study included Black girls (under the age of 13 years), who comprised 8.55% of the group and Black boys (under the age of 13 years) and White women, each making up 6.84% of the total number of victims. Black women were targeted by seven offenders, two of whom also victimised women of other races. Black children were targeted by five of the offenders with two of them focusing more on boys. Three offenders primarily victimised children and teens of mixed race and sex. One offender targeted Coloured prostitutes while another targeted White female sex workers specifically. Two offenders murdered four White men and one Black man respectively. No Coloured or Indian men were targeted in this sample. These victim demographics are displayed in Table 2. Table 2 Total Breakdown of Victims by Race, Sex and Age RACE AGE GROUP NUMBER PERCENTAGE Men 1 0.85% BLACK Women 73 62.39% Male Teens 2 1.71% Female Teens 4 3.42% Boys 8 6.84% Girls 10 8.55% Total Black 98 % of Total Victims 83.76% Men 4 3.42% WHITE Women 8 6.84% Female Teens 1 0.85% Girls 2 1.71% Total White 15 % of Total Victims 12.82% Women 1 0.85% COLOURED Male Teens 1 0.85% Boys 1 0.85% Total Coloured 3 % of Total Victims 2.56% INDIAN Women 1 0.85% Total Indian 1 % of Total Victims 0.86% TOTAL NO OF VICTIMS 117 Men were the least targeted of the total victim set at 4.3%. Women, on the other hand, represented a significant 70.9% of the total victimology followed by children and teenagers comprising 17.95% and 6.85% respectively. This study suggests that these groups are the most vulnerable to the predation of South African offenders. Furthermore, six offenders had one victimology type. Three of them targeted Black women only, while the other three victimised only White men, Black teenaged females and Black girls respectively. Nearly half of the sample of offenders who targeted a mixed victimology, murdered victims of different ages. As mentioned in an earlier chapter, 34% of South African offenders have victims of both sexes and 40% have mixed race victims (Labuschagne, 2006b). In this sample, 40% of the offenders targeted both males and females while 20% of the group of offenders had a mixed race victimology. Table 3 presents the mixed victimology of the remaining nine offenders. Table 3 Percentage of Mixed Victimology by Race, Sex and Age MIXED VICTIMOLOGY PERCENTAGE OF THE OFFENDERS By Race 20% By Sex 40% By Age 46.67% 6.2 Content Analysis of Semi-Structured Interviews Content Analysis was used as a method to analyse the interview transcripts and the qualitative component of the offenders' drawn mental maps. Primary focus was given to establish whether our local offenders also commit their crimes in patterned ways, as evidenced by their international counterparts. Content analysis involves systematically working through text or transcripts, beginning with the rule of equalisation (Spinelli, 2005). Each item of focus or raw categorisation is examined in turn; using raw data to locate instances of it (Smith, 1995) and each is initially treated as of equal significance and not prematurely placed into a hierarchy of importance. Thereafter, the most important themes and categories are progressively identified, refined and integrated (Willig, 2008; Gray, 2009). The questions posed in the semi-structured interview loosely created the initial categories. Thereafter, it was the responses given, that were evaluated for commonalities. This process rested on the assumption that the most frequently appearing themes reflected the greatest concerns for the interviewees (Smith et al., 2009). According to Spinelli (2005:27), "Any theory that we care to formulate…is the result of reflective experience since it is an attempt to provide some hierarchy of significance to any straightforward experience". There were three offenders (2, 14 and 15) who emphatically denied committing the crimes for which they were sentenced. As a result, all questions pertaining to choices of location, victimology and motive regarding the murders were omitted in these aforementioned offenders' interviews. Instead, the interviewer explored their knowledge of the crime areas. The resultant information will be merged into the following section, where relevant, which presents and discusses the aggregate responses to the interview questions of the remaining offenders. Any common themes that emerged are highlighted. 6.2.1 Selection and association with encounter sites. Based on the responses of the offenders, there seemed to be two broad approaches in choice of area to meet their victims, which have been labelled as target-based and area-based. Two of the offenders were more target-based. Their victim meeting sites were determined by who the specific victims were that they were targeting, regardless of proximity to the offenders' bases. Interviewee 1 claimed that he had targeted the children of those adults who had specifically wanted to punish him for assaulting his girlfriend. He had previously noted where their homes were and he was prepared to walk extensively to reach them. Only one victim resided nearby to his base, while

the others were far away. Interviewee 3 claimed that his victims were specifically selected at the request of other people asking him for a favour. While two of the victims were located and met within view of his residence, the third was in a neighbouring suburb that the offender said he had to assess for suitability, first. However, his girlfriend and the mother of his child lived nearby the third meeting site. The majority of the offenders, however, seemed to be more area-based. They crossed paths with their victims because of where the victims were: in the same place at the same time. The meeting sites were predominantly in familiar areas within which the offenders resided or the places to which they travelled for work, for shopping, to visit friends and family and/or for recreational purposes. Offenders 4 and 5 expressed that they often met their victims in between their base points of home and work or home and shopping. Many of the offenders said that they were unaware of having consciously chosen specific meeting sites, stating instead that their victims would often be met in passing on the streets or pathways. Offender 8 described his first victim as a lady that he "happened to notice walking past the farm" where he lived and worked at the time, while his next two victims were people that he would "just see walking through the location" where he was based as a taxi driver. Another offender explained that the deaths of his victims were due to unfolding "circumstances" that occurred between him and them at locations where they just both happened to be at the time. Offender 10 described his crime sites as purely opportunistic. He said that he wondered around the area and then, "When I see a window open, that's the opportunity". These offenders' area-based choice of meeting sites thus concurs with the theory of Routine Activity (Felson, 2006), that as offenders and victims engage in their daily legitimate routines their intersection points in time and space create potential crime locations. When compared to the offenders' homes, the meeting sites ranged distance-wise from "inside" the offender's home to "right next door" to "within 200m" to "an hour's walk". Only one offender (6) met his potential victims "very far away" from his home, even in other provinces, as he travelled countrywide for work purposes. This is in accordance with the FBI's statement that of the very few offenders who do travel further, they have a travelling lifestyle which provides them with additional opportunities (Morton & Hilts, 2005). However, this offender did not murder his victims in these faraway locations. He invited his victims to visit him at his home and, like the majority of the interviewed offenders; it was close to this home base that his murderous plans were brought to fruition. Thus, the domocentric reference point, as explained by Piaget (1973) and supported by Godwin and Canter (1997), was found to be true of most of the local sample of offenders who encountered their victims close to their own homes. As was discussed in chapter two, the serial murderer tends to be lazy and generally employs the human principle of least effort and greatest gains (Kind, 2008), to move from one place of interest to another. Offender 7, who walked further to meet his victims and who desired to keep his area "clean", may have demonstrated the proposed buffer zone explanation that the area centred around his home was viewed as dangerous due to its close proximity (Rossmo, 1995b). In addition, and as stated by Rossmo (1993; 1995b), some offenders had bases that were further from their homes, associated instead with their work sites, social venues and/or travel routes. As presented by one of the main proponents of geographical profiling (Canter, 2008) and as supported in an FBI publication of their 2005 Symposium on serial murder (Morton & Hilts, 2005), it has been shown that offenders tend to have distinct geographic areas of operation that are well known to them since that is where they spend most of their time. These areas are commonly associated to the residential anchor point, to the place of employment, shopping, leisure and/or to a relative or friend. Based on the responses of the interviewed offenders, this theory holds true for them. By far, most of the offenders stated that they had met some of their victims within proximity to where they resided, or at least within the broader area. Distances ranged from as close as "50m" or "next door", to "an hour's walk" or "10km" away. Five of the offenders (1, 3, 4, 5 and 10) were born and raised in or near to their respective victim encounter locations; hence they knew the areas very well. This is compatible with the theory that the journey from a base point to the crime scene is often quite nearby (Canter & Youngs, 2010). Furthermore, the majority of the offenders had more than one encounter area, associated with base points at which they worked, shopped or visited relatives and friends. As with Piaget's (1973) cognitive development theory, the offenders' systems of reference were initially domocentric and later focused on other routes, landmarks and familiar places. Several of the offenders met their victims in passing, within the areas in which they worked. These ranged from being at a particular site, such as on a farm or at a train station, to sites along pathways that the offender travelled for work, or along the routes driven as a taxi driver. Offender 7, a police member, wandered around scouting for victims next to, behind, and a block away from the police barracks at which he was based. This moving along familiar paths and learning of possibilities along these paths, is what Canter was referring to when he described the journey to crime (Canter & Youngs, 2010). In addition to their other meeting places, Offenders 4 and 12 also encountered their victims at their nearby shopping locations while Offenders 7, 9 and 11 met targets at their local recreational parks. The visitation of girlfriends, friends and aunts close by also allowed for Offenders 4, 5, 10 and 11 to meet additional victims. One of the relatives lived "300 to 400m away" while another relative was "just around the corner". Hence according to Routine Activity Theory, as these offenders engaged in legitimate, conventional behaviour (Agnew, 1994) in familiar terrain, they became aware of potential victims. Only two of the offenders met some of their victims in areas "very far away". Offender 2, although he denied committing any crimes, had access to women near the court "roughly 30km" away in which he periodically appeared during a fraud case. Offender 6 travelled diversely for work and was able to meet women along his travels, some as far as in other provinces. Hence, in addition to the victims that they encountered closer to their homes, these two specific offenders were also able to capitalise on these opportunities and add to their victim repertoires. These area-based encounter sites are presented graphically in Table 4. Table 4 Area-Based Encounter Sites OFFENDER HOME WORK FAMILY/ FRIENDS SHOPS LEISURE TRAVEL ROUTES 4 ? ? ? ? ? 5 ? ? ? ? 6 ? ? 7 ? 8 ? ? 9 ? ? ? 10 ? ? ? 11 ? ? 12 ? ? 13 ? 6.2.2 Selection and association with murder sites. Three of the offenders stated that their encounter sites and their murder sites were "one and the same place" and that they did not feel the need to lure or transport their victims elsewhere before they attacked them. Offender 5 explained that the probable reason for not relocating his victims first was that "there were not a lot of people for security sake" at the encounter sites and "there was nobody watching". Offender 9 answered that the murders happened spontaneously at the meeting places where the particular situations played out. As was discussed in an earlier chapter, serial murders in South Africa are more likely to occur outdoors, namely in the country's easily accessible and isolated locations such as fields, plantations or rural areas (Salfati et al., 2015a). Local offenders who meet their victims in these private outdoor locations might feel confident to murder them there and furthermore, leave the covering up of the abandoned bodies to the natural elements, animal predation and hot temperatures (Salfati et al., 2015b). Therefore, according to the multiple crime location types as classified by Rossmo (2000), these offenders would Encounter, Attack, Murder and Dispose of the body in one location (E, A, M, D). The majority of the offenders in this sample, however, met and murdered their victims in separate remote locations as suggested by Kraemer et al. (2004). As stated by Salfati et al. (2015a), local offenders do not generally possess vehicles and thus, if they encounter their victims in busier areas or where there are guardians (Felson, 2006), they will be obliged to lure these live victims away to isolated areas before attacking them. 6.2.2.1 Choice of murder sites. The interviewed offenders offered various explanations as to why they thought they chose their specific murder sites: unconscious habits, familiarity, and crime concealment (privacy, secrecy, the level of difficulty in finding the body) were primary themes. These are presented in Table 5. For the majority of the offenders, this was not an easily answerable question at first, as the location "choice" felt largely unconscious for the most part.All of the offenders claimed to have had a degree of familiarity with their chosen murder sites. Many expressed that they knew the locations "well", since they resided, worked, travelled past and/or engaged in recreation there. For the offenders who were less familiar with their murder sites, a common element was that they prepared themselves in some way initially. Offender 6 said that some of his murders were committed roughly 3km from his home in an area that he had only recently been exposed to and after going there said, "So I start to know this place". Offender 1 "marked" the homes of his specific victims before targeting them while Offender 10 wandered the area first, scouting for opportunities and breaking into the vacant homes once before returning at a later date to commit his crimes. Table 5 Choice of Murder Sites OFFENDER FAMILIARITY Privacy/ Secrecy CRIME CONCEALMENT Difficulty Finding Body UNCONSCIOUS HABITS 1 ? ? 3 ? 4 ? ? 5 ? ? ? 6 ? ? 7 ? ? 8 ? ? 9 ? ? 10 ? 11 ? ? 12 ? ? ? 13 ? ? Offender 7 explained that he deliberately took his victims "away" from his own area, to keep it clean,

but still chose other familiar places within walking distance where "it was more peaceful to do the thing", where it was "dark" and where there were "plenty hiding places". This privacy and secrecy theme was also evident in the responses of three other offenders (5, 11 and 12) who selected deserted areas, a bushy area and a vacant field respectively for this reason. As Offender 5 explained, "There's no one looking; there's no security". Routine Activity Theory would describe these areas as having an absence of effective controllers or guardians (Felson, 2006). However, Offender 4 categorically expressed that he did not choose the site for its privacy since he claimed that he could murder anywhere. He stated that victims who made him suffer were taken and buried in a location further away where it would be difficult to find their bodies. Those who did not invoke his anger were left on top of the ground, near an open veldt where they could easily be found. A second offender (6) offered a similar reasoning. The victim that angered him most was murdered and left in a quarry, while the rest were left behind the quarry so that others could find them and take their bodies. Offenders 7, 8 and 13 preferred areas that were well known to them and were quiet, private and secret. These sites included a mealie field, a peaceful park and a private location in the mountain close to where the offender used to sleep. Offenders 3 and 10, on the other hand, stated that they preferred to go directly to their victims' homes and murder them. The latter offender explained that his modus operandi was to look for or wander around in search of a suitable target – a woman alone in a home in which he could gain access – and that he would later return to commit the crime. For him, homes offered such opportunities as well as easy access to money, credit cards and safe keys. He thus said that he had no need to target people on the streets or in the bushes. Offender 6, previously incarcerated for rape, stated that his preferred site was behind a river and thus it provided nice grass there. Several of the offenders felt that they had not consciously selected their preferred areas, stating instead that they encountered and murdered their victims at the various areas in which they were travelling past, by foot or with transport, or where they were going about their usual business. For them, the victims were attacked in places at which both parties just happened to be simultaneously. Offender 9 explained that his murders played out in the particular locations that they did, as a result of "unforeseen circumstances", and Offender 12 said that it "just happened" and not in a particularly private area either. Interviewee 5 eventually concluded, "To be honest I don't have a particular reason why". Assuming as we do, that each offender operates from a base, these coincidental meetings with victims are not really coincidental at all but inform us of the daily activity spaces that these offenders traverse (Canter, 2008). Familiarity, particular derived benefits and the routine activities that brought together the criminals and their victims both temporally and spatially, were the main location determinants of where the crimes were repeated. 6.2.2.2 Range of murder sites from offender residence. The principle of least effort and Canter's concept of propinquity (Canter & Youngs, 2010) was demonstrated here in that most of these violent offenders did not travel long distances from their homes to commit their crimes. Their environmental learning happened as a result of experiences that eventually culminated into routine actions and they offended in a relatively small geographical area, based predominantly around their home address (Canter, 1994; Lundrigan & Canter, 2001a; Canter, 2008; Gabor & Gottheil, 2008). Schmitz (2004) concurred with this conclusion after he geographically profiled seven well-known South African crime series after the fact and he also acknowledged the importance of anchor points in areas beyond the home such as employment and recreational areas (Brantingham & Brantingham, 1981). (i) 0 – 5km. As was the case with the meeting sites, the majority of the offenders murdered their victims within 5km of their homes. The murder sites ranged from being at the house to next door to a few hundred metres away to "less than five minutes" walk (equates to roughly 400m) to an hour's walk (equates to roughly 4.8km). This included Offender 6 who, in spite of having initially met some of his future victims in other provinces, invited his victims to his house and then claimed to have murdered them at home or nearby to his home. The bodies were found roughly 3 or 4km away. Hence, he too used his residential base point as his launch pad when it came to murdering the victims. However, the second offender who had taken advantage of meeting additional victims further away committed his murders there. Though he denied his involvement, Interviewee 2 had been summoned to the area to attend court periodically over a four year period. Victims' bodies were discovered roughly 17km from the court. (ii) 8 – 30km. In addition to these sites, some of the offenders also murdered within the proximity of work-related activities, girlfriends or family members, shops and recreational parks. These sites tended to be further from home, ranging in distance from 8km to 30km away. (iii) Transitory routes. Several murders also occurred along their routes between their homes and these destinations. For Offenders 8 and 15, the crime locations were along their taxi driver routes. For Offender 5, victims were attacked along the routes between his three primary crime site areas. He described the in-between places that he would discover "by chance" because of passing them when taking public transport. He would later encounter his victims on foot, as he had knowledge of the shortcuts that they walked. Thus his murder sites were not close to his homes, "not at all", but rather based on his travelling between and around his three base points: where his company was based; where he was living at the time; and where he had been born and had grown up. Like the rats in Tolman's (1948) experiment, the individual who is familiar with his locale, will be able to follow various routes to a given place. Similarly, Offender 14 was linked to multiple crime areas that he travelled past en route to work each week: where he used to live; where he went to meet an ex-girlfriend and drink beer; and where he would visit his aunt. Offender 4 mentioned passing his murder site "every time" in his travels and said that he knew the area very well. Those victims who made him suffer by retaliating against him would be murdered far away from where he stayed to increase the difficulty of the police finding their bodies. The rest of his victims were murdered nearer to his base, in accordance with the typical pattern of these offenders. Several of the offenders described their murder sites as well known to them since they had either grown up in the area and/or resided nearby or because they had been exposed to these areas as they frequently travelled past them. The first interviewee described his murder site as "just a secret place" that he had known since childhood; a farm from which he stole peaches as a young boy. Offender 11 reported a park, his murder location, as a place at which he enjoyed smoking dagga. For the offenders who murdered or left bodies in the veldt areas, all claimed to have known where those open spaces were. 6.2.2.3 Body relocation. Research by Salfati et al. (2015a) established that 93% of the 302 South African victims in their sample were discovered at the location of the murder. In this study, 91% of the 117 victims were left at the murder site, generally out in the open, and to the natural elements. According to Rossmo's (2000) location type classification, these offenders would Encounter their victims, and then move them to an isolated second location to Attack, Murder and Dispose (E - A, M,D) of them. According to Salfati et al. (2015a), American offenders in contrast, generally use three locations to Encounter, then Attack and Murder, and finally Dispose of the bodies (E – A,M – D. In addition, they also require increased post-offence planning to hide the bodies effectively (Sorochinski et al., 2015). In this study, only 11 of the total 117 victims had been relocated after death. Nine of these victims were murdered at the homes of two of the offenders and thus needed to be moved. Although the police found no evidence of such, Offender 6 claimed to have personally moved his seven bodies by car, about 3km away. Offender 9 explained that the impact of his attack caused his victim to roll out of his door and down the stairs. He moved the body, placing it on top of an outside dustbin. In the case of a second victim of his, the offender he recruited a man living on the streets to "take the bag [with the body] and drop it somewhere". Offender 3 attacked and murdered his victim late at night as the man was walking through a park that was popular with children. He stated that he thus dragged this particular body across a small bridge nearby and into a ditch, as he did not want the children to discover a corpse the following day. Finally, the last relocated victim was murdered after a fight reportedly broke out between her and Offender 11, over her car keys. The murder occurred at a park situated eight streets away from where the offender resided, where they frequently smoked drugs together, and at which he was collected and dropped off for work. The offender said that he was afraid and wanted to "hide" her body so he relocated her to an adjacent, familiar soccer ground that had an open drainage system. 6.2.3 Reasons for returning to the same areas. Various reasons were offered by the offenders as to why they repeatedly chose similar areas to commit their murders. These are presented in Table 6. Seven of the offenders reasoned that they returned to their selected murder sites since they knew them well and liked them. Offender 1 said that it was "just a secret place" while Offender 7 explained that he sought "quiet" places at night. Since he claimed he was offering his victims' souls to Jesus, he mentioned that he especially liked the palm trees in parks as this reminded him of Jesus riding over palm branches on a donkey. Interviewee 9 commented on how much he loved his city, although he did not specify why, and Interviewee 6

described his location as having "nice" grass. Haynes (1980:33) claims that "intimate knowledge of a place, the memories of past experiences there and all the familiar human associations it has, produce a love for it". Table 6 Reasons for Returning to the Same Areas OFFENDER KNEW LIKED NEAR HOME NEAR WORK NEAR LEISURE NEAR FRIEND/ FAMILY NEAR SHOP IN TRAVEL 1 ? 2 ? ? 3 ? ? 4 ? ? ? 5 ? ? ? ? 6 ? 7 ? 8 ? 9 ? ? ? 10 ? ? 11 ? ? ? 12 ? 13 ? ? 14 ? ? ? 15 ? ? Four offenders answered that their homes played the main role in selecting the murder sites that they did. Offender 10 replied that it was perhaps because he had "a need to repeat the things" as he was staying in the area and could see opportunities from his base through the open windows. Similarly, Offender 3 mentioned that he was able to observe what was happening around him from his home and the park nearby. Offender 13 stated that his victims were all left within a few hundred metres from where he slept in the mountain, while Offender 12 queried whether he might not have understood the question and replied, "It was simple. I lived there. That was the reason". Five of the offenders stated that their murder sites were repeatedly picked since they worked within the vicinity. Offender 11 stated that the park, in which he murdered his victim, was also the location from which he was collected and dropped off daily by the garden service for which he worked. Offender 4 described having a set place to do his "job" like any other profession and stated that the areas were in close proximity to places at which he had previously worked. One offender, Offender 9, stated that he revisited his murder site for recreation purposes, frequenting the night clubs at times as well as a nearby restaurant for drinks. Similarly, Offender 11 commented on returning to the park, one of his murder scenes, to smoke drugs. No reason was offered by Offender 5 who stated that he just "happened to walk there" and "then you meet somebody". His crime sites were in remote locations in between three of his base points: where he lived; where he worked and where he grew up. Thus, as he travelled between these broad anchor areas, he came across his victims. The offenders who denied committing their crimes (2, 14 and 15) also explained their proximity to the crime sites as passing them in their routine travels. The travels of Offenders 2 and 14 centred on shopping, and visiting friends and family respectively. For Offender 15, the crime scenes were located along his work routes as a taxi driver. Response Hierarchy Theory offers an explanation for the habitual return of offenders to certain areas. If offenders begin to select murder areas that they deem to be safe enough and require the least effort to access, and achieve their desired outcomes in so doing, their successive choice of area is likely to be the same one. As they continue to choose the areas and continue to reap their desired outcomes, so these rewards will continue to strengthen these responses because of their drive-reducing effect. Murdering in the familiar physical proximity of an anchor point will provide more immediate release of sexual and/or aggressive tension and the rewards will reinforce the same response next time (Dollard & Miller, 1950) until ultimately a habit of murdering close-by is formed. This choice ultimately become less cognitive, planned or rational and is more a reflection of learned behaviour that has just become a habitual pattern (Chaplin & Krawiec, 1970). This possibly explains why it was difficult for many of the offenders to immediately offer their conscious reasons for returning to these areas. 6.2.4 Area relocation in response to body discovery awareness. A summary of whether the offenders relocated areas in relation to their awareness that the police had discovered their victims' bodies, is presented in Table 7. Two offenders, who were not aware that their victims had been found, did not relocate their murder sites. Offender 1 said that if he had known that the bodies had been discovered, he would have had to initially conduct a search for another place but added that a relocation would have been "very difficult" for him. He did not elaborate why. Offender 13, who committed his murders within a short period of time, stated that he was surprised to discover that his victims had died. He claimed to have thought that the victims he assaulted had merely passed out and that during the course of the night, they had recovered and left the area. This offender expressed that had he known that the police had found the bodies, he "was not going to do it all at once". He also mentioned that he would see police patrolling the area but that he was not concerned since he knew that they worked around there and thus felt no need to relocate. This offender explained that his primary aim in life was to make enough money to further his education and that he would have relocated if he had secured alternative employment elsewhere. For Haynes (1980), migration can occur because of positive influences, such as when opportunities and attractions are perceived in other places. Offender 7, who was also not aware of the discovery of his victims, did keep relocating his murder sites however. He explained that he did not want the same environment all the time nor the risk of having the police detect him. Negative influences, notably the fear of detection, can also spur migration and may lead to temporary changes in the geography of the serial murderer. Two offenders, who found out that their victims had been discovered, relocated as a result. Offender 11 said that since the police were looking for him, he moved out of the area. He was apprehended before any more murders were committed. The other offender, Offender 10, explained that since he was based at the police barracks in the area, he was aware that the police were searching for a serial murderer. Ironically, he was requested by one of the detectives to accompany him to the Houghton Golf Club when they were following up a tip-off based on the identikit that was distributed for a serial rapist/murderer in the area. The offender was ordered to shoot the perpetrator if they found him and the perpetrator attempted to escape. He explained that the situation became "hot" when a resident in the neighbourhood gave a description of him and he learned that the police intended to put out a facial composite as well as do a parade and fingerprint check at the barracks. Although the appointed officials never arrived, the offender expressed that he was nervous. He thus requested a transfer to his original suburb and subsequently relocated. The offender considered the possibility that his problematic and confusing behaviour might be associated to that particular area. However, after he had moved and while visiting his fiancée one day in the neighbouring area, he saw an opportunity and struck his final victim later that night. Offender 6, who relocated some of his deceased victims, was aware that the bodies had been discovered by the police since he phoned them anonymously. While all of his victims were disposed of at the quarry, as he wanted their bodies to be discovered quickly, he stated that they were not all murdered there. Some of the murders were committed at his house. Four offenders who knew about the discovery of their victims did relocate but not for fear of apprehension. They offered alternative reasons for their moves. Offender 4 stated that he was taking drugs at the time and that he would "hear voices" directing him as to who and where to target. If the voices guided him to move, then he would relocate to other areas. It must be noted that this offender, as were all others, was found fit to stand trial however. Offender 9 claimed that he was working undercover for the police so he had to move around to avoid being targeted by the Muslim mafia who wanted him because he had too much information on them. Offender 3 claimed that he was requested by a third party to murder particular people and thus, relocated areas since one of the victims resided there. Offender 5, relayed a detailed story of how his circumstances and emotional responses to them, led him to move between three prime areas. His murder sites relocated as they were situated in whichever area he happened to be based at the time. After the initial week of roughly seven murders, the offender stated that he realised that he could not continue this way. He decided that he would return to an area he had previously lived in, try and forget about everything and possibly feel okay. However, as his circumstances continued to anger and frustrate him, new waves of violence would erupt in each successive relocation area. Some of the other reasons for relocating areas included anger at being falsely accused of a crime, conflict with his girlfriend's sister's troublesome boyfriend, not enjoying the triggered memories of an area, as well as reading about the erroneous and unjust arrest of an innocent man for his crime. As stated by Rossmo (2000), crime sites may change in order and location due to routine activity changes. Only towards the end of his series, and when he learned that his photo had been published in the Star newspaper, did the offender become afraid of being identified. He then consciously attempted to keep away from people and kept a low profile as he feared that others would kill him. Conversely, there were two offenders who knew that their victims' bodies had been discovered but who did not relocate. Offenders 8 and 12, stated that they did not know why they returned to the same area. They each murdered three victims. Their lack of maturation or skill might not have given them sufficient confidence to shift their locations a little further afield (Canter & Youngs, 2010). Hence perhaps it is possible that they were not so much electing to remain in the same areas as they were lacking the boldness to relocate to less familiar territory. Table 7 Area Relocation in Response to Body Discovery Awareness OFFENDER AWARE BODIES HAD BEEN DISCOVERED AND RELOCATED AWARE BODIES HAD BEEN DISCOVERED AND DID NOT RELOCATE NOT AWARE BODIES HAD BEEN DISCOVERED YET RELOCATED NOT AWARE BODIES HAD BEEN DISCOVERED AND DID NOT RELOCATE 1 ? 3 ? 4 ? 5 ? 6 ? 7 ? 8 ? 9 ? 10 ? 11 ? 12 ? 13 ? 6.2.5 Offenders' narrative roles. Based on the four dominant roles that offenders assign themselves that give their

lives meaning and legitimise their acts of violence (Canter, 1994; Canter & Youngs, 2010), the question regarding their narratives essentially allowed for the offenders to describe their own understanding of how their crimes fitted into the context of their greater life stories (Plummer, 1995). The question was based on the assumption that the serial murderer's acts of violence are re-enactments of past psychological and/or physical wounding (Knight, 2007), represented in a warped interpersonal fashion with his victim (Canter & Youngs, 2010) and will be maintained and reflected in everything that he does (Canter, 2000b). As described by Smith (1995:10), "one may consider that what respondents say… is part of their ongoing self-story and represents a manifestation of their psychological world, and it is this psychological reality that one is interested in". The majority of the offenders relayed stories of their dysfunctional upbringing and their experiences of abandonment, rejection, sexual and/or physical abuse or broken romantic relationships. Their selected roles are presented in Table 8. Three offenders identified with the role of Victim. The victim role, as described by Canter and Youngs (2010), has to do with confusion and powerlessness, a sense of generalised impotence and meaninglessness, where nothing makes sense and there are no rules and no happy endings. Offender 8 stated that the repeated traumas of childhood "was eating me, eating me, eating me, eating me" before it finally gave way to murderous behaviour. Offender 9 felt victimised and rejected by the parents of his desired and prospective spouse. After they were forced to terminate their relationship, the offender stated that he developed an "anxiety depression" and eventually "lost control". The third offender, Offender 11, said that his very difficult and unprotected upbringing, which included being forced to have sexual relations with female family members, left him feeling very victimised. Table 8 Offenders' Narrative Roles OFFENDER VICTIM REVENGER PROFESSIONAL NO IDENTIFIED ROLE 1 ? 3 ? 4 ? 5 ? 6 ? 7 ? 8 ? 9 ? 10 ? 11 ? 12 ? 13 ? Five other offenders, though able to relate to being victims as youngsters, identified more with the role of Revenger in their murder series. Canter and Youngs (2010) described the revenge role as being about the wounded hero who must right the wrong and seek retaliation, making a total commitment to a life of violence and undoing. Offenders 1, 4, 5, 6 and 12 relayed earlier stories of hurt, anger and fury at the hands of abandoning parents, sexually abusive family members, unfaithful women, punitive community members or the ignoring police and they were categorical that their murders were "about revenge". Offender 6 added that he felt like a victim but needed to avenge his own hurts as well as the hurts of other men who had been equally wounded the way he was. He was clear that he does not feel like a hero, however. Offender 4 also claimed to have been led by voices to commit the murders. According to Kulbarsh (2011), a detention centre psychiatric nurse, a command auditory hallucination is when a voice tells an individual to carry out a specific act and the individual often feels obliged to obey. She states that the results are often devastating and that statistically, over 50% of these hallucinations are to commit suicide, 10% are for homicide, and the remaining 10% are for some other non-lethal injury (Kulbarsh, 2011). However, the offender was found fit to stand trial. Thus it seems that the victim role and the revenger role both emanate from the same place, but the victim stays a victim while the revenger goes beyond (G. Labuschagne, personal communication, 26 October, 2015). Two offenders, though they did not view their roles as Professional per sé, did identify with the motive of being powerful, which Canter and Youngs (2010) included in this particular role. The authors described the role as positive, exciting and risk-taking with a chance for mastery, competency and reward. Offender 7 described being angry with God for not assisting him as a child and said, "I wanted to be God". He stated that he wanted to elect who lives or not and said that his murders made him feel "mighty, powerful". Offender 10 mentioned that he was raised by strict and overpowering parents. When he committed his first crimes of theft, he said that he "enjoyed that power" of getting away with it and he felt excited that he was good at it. He described breaking into properties and taking "just a bit" so that he could "go back and get some more". Hence, it developed like an addictive habit where he was "looking for more of that adrenalin" and it ultimately led to murder. This offender seemed to fit the description given by Pistorius (2000:199) that "most serial killers have dry runs or rehearsals when they act out parts of their murderous fantasies, just to see how far they can go". Offender 3 could not relate to any of the roles as he had become so detached from himself. He said that, "For me it was like testing myself, testing my mind. How do I feel about it when I do it?" He said that he struggled to feel and that even murdering others felt like "nothing". He added, "It feels like I don't have feelings for the next person…I would like to learn to have feelings. When is the person hurt? I don't have it. I wish I could have learned that. I can't even feel my own pain". However, his later verbalisations suggested that there was and still are attempts to assert a level of power in his life. The offender described growing up in a dangerous suburb where it was commonplace for the men to gather and fight in public places to demonstrate and prove their physical strength. He confidently added that they could not challenge him, as he had been trained from an early age in taekwondo. His victims were vulnerable men but he viewed his murders as being brutal enough to get the police's attention. He also went on to describe his powerful influence in the prison itself, where it was he and he alone who guided the authorities with security measures that would disable prisoners from escaping. "That's why they keep me in isolation. I can open any door", he stated. He claimed that he is capable of many things and that he has positively influenced the lives of other inmates in his prison. Offender 13 was also unable to offer any insight into a role with which he might have identified. He said that first and foremost, he wanted to succeed. He explained that he worked hard at trying to generate extra income by buying and selling market produce as he had wanted to attend one of the local colleges. He also said that he wanted an education, better employment, to buy a car, to purchase a house. He described his victims initially as people attempting to rob him of his additional income. Later, and rather confusedly, he said that the victims were similar in that he perceived them all to be himself. He knew that he was alone and yet he described seeing himself walking here and there; saw himself going to work and simultaneously coming back from work. Confusion seemed evident and he told himself that he "must kill myself because I can't do all these things at once". He felt frustrated at seeing his selves walking back and forth and elected to murder them so that he could move on with his life. He claimed that he later realised that they were other people and not himself. While psychiatric reasons, such as visual hallucinations, might have been suggested to explain his behaviour (Kulbarsh, 2011), this offender was also found fit to stand trial and have criminal capacity. 6.2.6 Victim roles. The victim means something to the offender. For Morton and Hilts (2005), an offender selects a victim based upon vulnerability and desirability, and victim selection reflects something of the offender's motive (Rossmo, 1995b; Hickey 2002; Santtila et al., 2004). Who were the victims? What role did they play in the offenders' narratives? It was discussed in chapter three how the offender's narrative role is linked to the accompanying victim roles that he assigns, like a co-player in his drama. A twofold version of Canter and Youngs' (2010) interpersonal model (Victim as Vehicle or Victim as Object) was offered as an accurate representation of local offenders (Horning et al., 2015) with the Victim as Vehicle theme being the more consistently used overall. Established upon the police report evidence, a large cluster of the total set of victims appeared to have been treated as a vehicle. They were subjected to excessively violent acts and overkill brutality, such as torture, binding, bludgeoning and/or beating. Although predominantly more vulnerable victims (such as children, women seeking employment and sex workers) were lured or conned into accompanying the offenders, there were two old men who were blitz attacked but also subjected to overkill brutality. They would have had some interaction with their perpetrators before being overpowered with brutal methods that went beyond what was necessary to control them. Since their reactions to the suffering were fundamental to the crime, these behaviours were executed while the victims were still alive. Another cluster of victims had been objectified, with the various crime scenes containing evidence involving bizarre post mortem necrophilic activity, mutilation of the body, cannibalism, keeping body parts as mementos and/or a lack of evidence to suggest that the victim held any emotional value for the perpetrator. Some of these offenders indicated that they used a surprise or blitz approach where they immediately began attacking. This was always the case with the male victims in this category, as indicated by Salfati et al. (2015a), possibly as they may have been viewed as being more difficult to control. However, while this twofold model is supported by most of the interviewed offenders in this study, there were two offenders who appeared to treat their victims more in keeping with the Victim as Person theme. Identifying with the Revenger narrative, Offenders 6 and 12 both recognised the humanity or identity of their victims and treated them as people with whom they attempted to create a pseudo- relationship. The Victim as Person is seen as someone with thoughts and feelings and is important in the offender's formulation of meaning. These offenders described talking to their victims, asking them personal questions and even proposing a relationship. It was also

alleged that some of their victims were girlfriends or ex-girlfriends. The crimes included actions such as sexual intercourse, re-dressing or covering of some of the victims post mortem, and an apparent personal interest in the victim that went beyond the body. According to Canter (1994), this offender rapes his victim as a form of recreation and sees this somehow as a customary form of behaviour between himself and the victim. Such offenders are viewed as having the most stable or normative backgrounds of the three categories (Canter, 1994; Canter & Youngs, 2010). Knight (2007) described the victims of offenders as the symbolic representatives of their past tormentors. Victims were predominantly women and children or teenagers. Of the fifteen offenders, 60% targeted women primarily or as part of a mixed victimology, 40% targeted children primarily or as part of a mixed victimology and teenagers were also targeted by 26.7% of the offenders. Several of the offenders who victimised women offered various explanations for doing so and described the women in their early lives who had perpetrated hurtful actions against them. Offender 11 claimed to hate women while Offender 6 said that he was only angry with unfaithful women. Offender 5, who explained that his murders were about mothers who do not care, also mentioned that one of his victims reminded him of a woman who had once accused him of rape. Another offender, Offender 12, said that he likes women but that he had had girlfriends that upset and angered him. For other offenders who murdered women however, different reasons were given. Interviewee 9 stated that he simply had a bad temper and that the murders were circumstantial, while Offender 10 explained that he chose women, regardless of age or race, because they were an "easy target". The offenders generally stated that they had no specific reason for targeting the particular women that they did, but that they met them as they were moving around, by opportunity and/or according to circumstances. Offender 5 did mention however that one of his victims reminded him of a woman who had previously accused him of rape. Three of the offenders who primarily targeted children also offered commentary regarding their victim choice. Interviewee 1 said that he was out to punish those adults who interfered in his personal affairs, and thus he targeted their children as it would be difficult to get the parents. The second offender (7) said that he picked on boys and had sex with them because he was raped as a child. He added that he then murdered them because he did not want them to experience the pain that he had experienced after being raped, as well as to prevent them from becoming mightier than him. For Offender 4, because he had been raped at school by a female teacher, he thus felt that "older people must do ugly things to children". 6.2.7 Time spent with the victims at the crime scenes. The two offenders who murdered men, Offenders 3 and 9, as well as Offender 1 who attempted to murder a man all stated that they immediately attacked their victims at the encounter sites. Offender 3 described it by saying that he "jumped" his victims. As stated previously and suggested by Salfati et al. (2015a), male victims can be viewed as being tougher to overpower which is why they are attacked far quicker and have limited interaction with their perpetrators. The offenders who targeted women, however, differed in their time spent with victims. However, most stated that they usually did not spend much time with the women. Offender 9 said that the murders occurred "spontaneously" at the meeting site, while Offenders 5 and 11 lured their stranger victims away to isolated places and when they were alone, attacked them straight away. Offender 11 spent additional time with his second victim, however. He knew her and occasionally smoked drugs with her at night in a park. After some time together, an argument ensued which became physical and he murdered her as a result. Offender 10 replied that he spent no time with his first victim as she unexpectedly "appeared" as he was entering her property and he strangled her to keep her quiet. However, he said that he spent more time with his successive victims to whom he "did his things" (raped them) and then murdered them in their homes. Offender 7, who targeted male street children and prostitutes, and Offender 8, who targeted women, stated that they first asked their victims for consensual sex and then forcibly raped or sodomised them before murdering them. Offenders 6 and 12, who claimed that their girlfriends and ex- girlfriends were among their victims, invited these women to their homes. After spending some time together, their respective issues were triggered, and the victims were then raped and murdered. Lastly, the offenders who predominantly victimised children first lured them away from the encounter site with promises of sweets, cell phones or bicycles as well as money for sex. Offender 1 said that he attacked them as they reached the crime scene, although police reports state that he had tortured and raped them first before strangling them. Offender 4 was dubbed "the pied piper of the mine dumps" by Byleveld (as cited in Retief, 2011:185), since he targeted young children and lured them away. He gave the children "five to ten minutes to pray" first so that he could assess whether he was going to murder them or not. Once he had decided to kill the child, he did so straight away since "you can't spend long time". Offender 7 stated that he walked with his victims to quiet places, had sex with them first and then murdered them. Offender 13, whose victims included five boys, claimed that he had met his victims no more than a week prior to their murders. He claimed that they had chased him from town into the mountains as they were aiming to rob and murder him, and thus he murdered them first. Like the other child victims, these children were not murdered in town at the encounter site, but were relocated to a separate and private location before being attacked. The bodies of the victims were most commonly found in isolated locations. In addition to the reasons offered by the offenders as to why they selected these sites, Salfati et al. (2015a) suggested that they may have also wanted time alone with their victims. According to the responses of the offenders, any time spent with victims before their murders most commonly involved a sexual assault of some nature. 6.2.8 Returning to the body disposal sites. Five of the twelve offenders who admitted to their crimes, said that they returned to their victims' bodies but their reasons for doing so varied. Offender 4 stated that he often returned and stayed with the bodies for up to 11 days to monitor that "no one gets that body". He described a case in which a stepmother had requested the murder of the stepson in exchange for giving him money and her daughter in marriage, but she did not do it. He called her and told her where to find the body, planning to move it if she came. She never did and the body was only discovered after 11 days. Offender 5 recalled returning to a large victim the following day, in search of the watch that he lost during a struggle with her. He feared that the watch might have fingerprints on it. For Offender 7, revisiting the bodies created a mighty feeling within himself as he considered that "I decide who lives and dies". He explained that during the murder, it felt like he was fighting a monster. Afterwards, when he "got back" to himself, he would return to the body and then realise "it's a human". He admitted that he was taking drugs at the time. A fourth offender (11) claimed that the reason he returned to the victim's body was to check if the person had died and to help her if she had survived. Lastly, Offender 13 affirmed that he went back to all of the bodies after a "week or two" but did not find any of them. When he had nothing to do, he said that he wanted to go and realise "what is this thing of killing people", to see if they were dead; to see if their bones were there. Instead, he found that they had already "woken up and left". The remaining offenders all answered that they did not go back to their victims after their murders. One of them, Offender 1, had been accused however of taking body parts from his victims for muti [traditional medicine sometimes made from human body parts] purposes (Labuschagne, 2012b). He denied this adamantly, stating that there was "no such thing". He explained that he sold potpourri, which "this naughty police" had mistaken for muti. In addition to missing body parts, taken either for muti or as souvenirs, other post mortem behaviours that were carried out by some of the offenders included stylised positioning of the corpse, necrophilia and cannibalism (Kocsis et al., 1998; Canter & Youngs, 2010). None of the offenders mentioned that they returned to their crime scenes to carry out additional acts with the bodies (Schlesinger, Kassen, Mesa & Pinizzotto, 2010). 6.2.9 Knowledge of the discovered bodies. Two offenders responded that they were not aware that their victims' bodies had been discovered. Offender 1 stated that he only discovered that he was wanted by the police from reading a newspaper while at work. He wondered how they knew about him. He discovered only later, on his arrest, that one of his victims had survived and had mentioned his name and address. Offender 13 claimed that he did not know that bodies had been discovered as he did not even know that they had died. He said that he thought his victims were recovering and "waking up" in the night and then getting up and leaving. Another four offenders replied that they were aware of some, but not all, of their victims' bodies being discovered before their arrests. Offender 4 mentioned that several of his victims were buried on a mine dump and thus not found while Offender 9 stated that he only became aware of the discovery of the first two victims when he was in court. His third victim's body was reported in the newspaper while he assumed that the police had found the fourth victim after they collected the offender from hospital and arrested him. Offender 7 commented that he was aware that the police had discovered his daughter's skeleton, but not his other victims. He said that he had to point out the bodies of the other victims to the police. Offender 12 had learned via a friend who lived on his street

that the police had found his first victim. He said that he only became aware of the discovery of his second victim's body when he was in court, however. The remaining six offenders who admitted to their crimes confirmed that they knew that their victims' bodies had been found and had learned this primarily from the media. Offenders 5 and 6 added that they called the police anonymously, informing them where to find the bodies. Offender 5 described how after calling the police station and asking them to collect a body at the location he gave, he had climbed on top of the station to watch the officer. Offender 10 also said that he was aware of his victims being found as he watched the news on television. Of the last three offenders, who denied committing their crimes, Offenders 2 and 14 stated that they were aware of the discovery of bodies while Offender 15 said that he knew nothing. Offender 2 claimed that since he was going to win his fraud case, the court then started its allegations of murder against him. 6.2.10 Total/partial discovery of bodies per series. Offender 1 said that he did not know if the police had found all the bodies while Offender 13 mentioned that the police claimed to have found all the bodies but he said he was not sure if they did. He confirmed that there were no additional areas to be searched since all of them were in the same place. Similarly, Offender 9 said that he knew that the third victim was found, but he could not vouch for the first two. He stated that there was no additional area that the police had not found. Only one offender, Offender 4, answered that the police did not discover all of his victims' bodies. He claimed that the investigator was not cooperating with him, was torturing him and not handling him well. As a result, he chose not to cooperate with the police and lied in court. In contrast to the other offenders, he said that there were a lot of areas that the police did not find. The remaining eight offenders confirmed that the police had found all of their victims' bodies and they stated that there were no additional areas or bodies. One of them, Offender 7, added that he thought most of them had been discovered because he showed the police two of the crime sites and told them about the others. 6.2.11 Desire for bodies to be discovered. Nine offenders replied that they did want the bodies to be found and a variety of reasons for this were offered. Offender 3 stated that he wanted to make a point regarding the crime levels in his area and show the police that they needed to take greater interest in his neighbourhood. Similarly, Offender 5 wanted to make a point to the policeman that he claimed had snubbed his request to reinvestigate the rape case for which he had been imprisoned. For Offender 7, there was the realisation that he needed to stop. He was taking increasing amounts of alcohol and drugs in an attempt to forget about his murders and told himself that it could not continue. Offender 9 mentioned that he was open with the police and confessed in court as he desired to "come clean before God". Offenders 6 and 11 expressed wanting the bodies to be found soon for the families' sakes, as "people worry" and Offender 12 said that he actually wanted to be arrested. The last offender, who answered in the affirmative, explained that he wanted the bodies to be discovered after he had spoken to a visiting pastor at the prison. The pastor had encouraged Offender 4 to confess to the crimes, apologise to the victims' families and give them their bodies (family members) back. He stated that he would want the police to find all of the bodies and that he would be happy to explain to the families "one by one" why he did "all this rubbish". In contrast, three of the offenders answered that they did not want their victims to be found. Offender 1 was emphatic and expressed that he was upset and cried when taken to the veldt to identify the disposal sites. He stated that he just pointed anywhere to the police and complained that they were lying about him, were powerful and that he did not like what they were doing to him. Interviewee 8 also mentioned that he did not want the bodies to be found and that he only pointed them out to the police after his arrest. The third offender, Offender 13, said that he just hoped that his victims would not wake up and come seeking revenge or tell on him. 6.2.12 Observing/interacting with the police at the crime scenes. Seven of the offenders, 1, 6, 8, 9, 10, 12 and 13, answered that they did not return to their crime scenes to watch the police with their investigations. Offender 6 expressed that while he phoned the police to tell them about the bodies, he did not meet them at the scenes. Offender 10, who was based at police barracks in the area at the time, said that he did not return to the scenes as he was aware that there was police surveillance from the roof of the barracks, in search of people who might be wondering about. Five offenders confirmed that they did indeed return to their crime scenes to watch the police. Offender 4 mentioned that he returned to all of them, while Offender 3 returned to two of the three scenes. Offender 11 said that he returned to the park where he had murdered his victim, but to smoke drugs, and not to watch the police. For a couple of these offenders, reasons seemed to revolve around observing the reaction of the police to their murders and to gauge how they were handling the investigation. Offender 4 stated that he wanted to see if the police were "doing a perfect job" or if they were "just taking chances" and planting murders onto innocent people as he felt that they had done with him. For Offender 3, the motive was to see how seriously the police would take murder in his area. He stated that he had seen them at his first crime scene and was of the opinion that they did not care. He thus told himself that he would need to commit the next murder in a way that would ensure that they did. He described severely assaulting the victim's head by means of blunt force trauma and stated that the police "got a bit of tension" at the next scene. At the third crime scene, the offender perceived that the police only cared about the neighbouring suburb and not about his. "Unfortunately for me to tell them they will never listen so my intention was to show them", he concluded. One of the five offenders who returned to watch the police, Offender 7, described the feeling of satisfaction he experienced when observing the police at his crime scene. He was keen to see how the police "handled" it, but did not elaborate on what he meant by that. Similarly, Offender 5 explained that he wanted to watch how the police processed the crime and see who was there, what they were doing and how they were feeling. This group included police officials, the public and media personnel. He stated that he particularly watched the press to learn what they were saying. He hoped that they would all be upset. This offender believed that he had been wrongfully sentenced to prison some years before, for a rape that he claimed he did not commit. On his release, he had requested from the police that the case be reinvestigated but felt that they had snubbed him. He stated that had he been armed, he might have targeted the police directly instead of directing his anger towards defenceless women. Of those who returned to their crime scenes, two offenders ended up speaking to the police. Offender 11 was asked if he had seen a White woman there, to which he replied that he had not, while Offender 4 had phoned the police after one particular murder and informed them that he was passing by when he noticed a body. After the police arrived and asked bystanders if anyone knew the victim, the offender offered his help and took them directly to the family. He said that he did this to observe how the police conducted their investigation. The other offenders said that they did not speak to the police, but simply remained in the crowd and watched. A summary of which offenders observed and/or interacted with the police is presented in Table 9. Like movie makers, relaying a meaningful story, desiring the power to make an impact on their world, it would appear that many of these offenders craved feedback from their audiences; their critics; their surrogate authority figures: the police. It is as if they are saying, "Sit up and take note. This is me. And I have a story to tell". Table 9 Observing/Interacting with the Police at the Crime Scenes OFFENDER OBSERVED POLICE AT SCENE INTERACTED WITH POLICE 1 3 ? 4 ? ? 5 ? 6 7 ? 8 9 10 11 ? ? 12 13 6.3 GPS Coordinate Maps versus Drawn Mental Maps It was previously discussed in Chapter 3 that offenders select victims that are vulnerable, desirable and available to them but that the relationship between victims and their crime settings are important to consider since these locations have relevance for the victims (Canter, 2000b; Morton & Hilts, 2005). The secondary focus of this study involved comparing the relevant eight offenders' drawn mental maps with their respective physical GPS maps (plotted by the SAPS), exploring them and seeking to highlight any geographical journeys, discrepancies and/or emphasised features. Two of the SAPS maps, namely Figures 43 and Figure 65, are unfortunately of poorer quality but they have still been included. These eight offenders will now be discussed and include Offenders 2, 3, 4, 6, 10, 11, 12 and 13. Additional Google maps have also been displayed at times under some of the offenders' drawn maps for the purposes of more accurate comparison. It must be stated that these Google maps represent the areas in more recent years, and not at the time of the crimes. The offenders' personal commentaries on their drawn mental maps and the following guiding questions were included in the comparative analysis: ? How detailed were the drawn mental maps? Which parts of the map were most detailed? Did information decrease in the areas with which they were less familiar? ? How accurate were they in reflecting reality? What was included or omitted in their maps? ? What were the reference points? ? Was there a domocentric focus? Was the offender's residence within an imaginary circle as proposed by Canter and Larkin (1993)? ? Where were the crime scene points? Where were the body disposal points (if different)? ? Could the geography of the multiple sites be described according to any of the four spatial patterns as proposed by Rengert (1991, 1996) or the windshield wiper pattern

as suggested by Warren et al. (1998)? Two brief points need to be mentioned regarding the maps before they are discussed. The maps have been labelled with Figure headings, followed by a number in parentheses. This number denotes the offender that the map pertains to, such that (2) indicates Offender 2, for example. Furthermore, where there might be a greater number of crime sites plotted on the GPS maps than indicated murders, these include the offender's additional crimes (such as rape or theft). 6.3.1 Offender 2. Offender 2 was convicted of sixteen murders committed in Lenasia and around Westonaria. Although he denied committing any of the crimes or having knowledge of the geographical positions of the crime sites, his knowledge of these areas was explored nonetheless and he was asked to draw a mental map of how he got from his home – a shack in Zuurbekom settlement, Protea Glen (at the Waterworks, where he worked) - to Lenasia and to Westonaria. Based on the comparison of Figure 27, Figure 28 and Figure 29, the offender managed to draw an accurate albeit very basic sketch of the roads and the railway track around his home base that led to the crime areas in question: Lenasia and Westonaria. He said that he was familiar with both roads as he travelled regularly to Lenasia Mall to shop and periodically went to the Westonaria Magistrate Court over a four-year period to attend a fraud case in which he was involved. According to Google Maps, the offender was accurate in his distance estimation of 10km to Lenasia's Trade Route Mall. However, his estimated distance to the Magistrate Court in Westonaria was nearly double the 18.6km. His inaccuracy was possibly due to the fact that he travelled there less frequently than to Lenasia, and that he went there predominantly by train. He may also have overestimated the distance because he did in fact travel further than just the Magistrate Court, to the outlying areas of Westonaria where the victims' bodies were located. Figure 27 GPS Map 1 of Residence / Crime Sites (2) Figure 28 GPS Map 2 of Residence / Crime Sites (2) Figure 29 Mental Map of Residence (2) Offender 2 also drew a third common route that he travelled. This road led to Soweto, where he had previously resided and worked. There he would explain his fraud case at the local Moroka police station, visit his brother and sister in the township from which some of his complainants had originated, and/or attend church. The 7.4km journey was correctly estimated as being between 5 and 10km. Figure 30, Figure 31 and Figure 32 show the route from the offender's home to the Trade Route Mall in Lenasia. He said that he went there since it was the closest shopping locale. According to the map comparisons, the offender managed to accurately draw the simple journey. As with his first mental map, the roads and public transport landmarks were predominantly featured. The offender described catching a taxi on the road outside of his home, going past a garage and then stopping at a taxi rank next to the mall. The addition of the garage in the drawing may well have become an important landmark after he had purchased his own vehicle and was subsequently driving himself to Lenasia. No other points of interest or intermediary roads were included in this undetailed mental map. Figure 30 GPS Map of Lenasia Crime Sites (2) Figure 31 Google Map of Trade Route Mall, Lenasia (2) Figure 32 Mental Map of Residence to Trade Route Mall, Lenasia (2) From his home, the offender said that he would walk "not even a kilometre" over the freeway to the railway station and catch a train to Westonaria. Figure 33, Figure 34 and Figure 35 show the route from the James Square Railway Station in Westonaria to the Magistrate Court. He described walking straight out of that station into town, "not so far" down the streets (1.18km according to Google Maps) and directly to the court. After he had purchased a vehicle, he began to drive himself to Westonaria along the freeway (Old Potch Road) that was adjacent to his residential settlement and would park in a designated parking area at the court. Although the offender repeated that he did not know the areas outside of town, he depicted a rather sparse and undetailed map of town itself. The railway station, one road to the courthouse, the parking area and the nearby Shoprite were the only landmarks drawn in an otherwise built up area full of crossroads. Figure 33 GPS Map of Westonaria Crime Sites (2) Figure 34 Google Maps of Magistrate Court, Westonaria (2) Figure 35 Mental Map of Magistrate Court, Westonaria (2) Areas beyond the direct routes and central points of both Lenasia and Westonaria were not drawn at all, thus demonstrating a decrease in information in terrains with which he claimed to be less familiar and possibly showing very patterned and habitual pathways chosen. Considering that he denied committing any of the crimes, however, the absence of detail in his maps could possibly have been a conscious attempt to avoid revealing his broader area knowledge. Offender 2 was predominantly a marauder as he moved out from his home base to each area and then back again. In addition to the domocentric focus, where his home base was central to his journeys, he drew shopping locales as an additional reference point in each of his maps, followed by family visitation and church attendance. According to the GPS maps, the crime sites were clustered "in equal number" (P. Schmitz, personal communication, 15 July, 2015) in both Lenasia and Westonaria thus demonstrating a bimodal spatial pattern as suggested by Rengert (1996). 6.3.2 Offender 3. Offender 3 committed two murders in his residential area Bertrams and another murder in the adjacent suburb of Bez (Bezuidenhout) Valley, close to where his girlfriend and their child lived. A comparison of Figure 36 and Figure 37 demonstrates that this offender knew Bertrams well since his mental map shows a detailed and accurate representation of the road system surrounding his residence. He stated, "If I take my time, I can draw Bertrams 100%". Distinctly framed on three sides by identified roads, the offender's boundaried map reveals how these roads possibly served as mental barriers for him since his daily living and his murders happened within that geographically contained and domocentrically focused activity space. The offender said that he was making a small sketch of a big area. He explained that the blocks were drawn to represent the buildings and that he was cutting them off to make roads. Figure 36 GPS Map of Residence / Bertrams Crime Sites (3) Figure 37 Mental Map of Residence / Bertrams Crime Sites (3) He turned his page as he was drawing, expressing that it was easier for him to draw it the way he walked it. In this sense, the streets were sketched according to the mental rehearsal of his habitual footsteps. "It's like I'm moving around" he said. The only landmarks included in the map were his residence, a centre where children played on Sundays, and a park. The park was a central reference point in the map and frequently mentioned as a go-to spot in his life. He said that he loved the park because its central location enabled him to observe all that was happening around him. He explained, "Everything what happens, happens in the park you see". He said that the Coloured people living there liked to go to the park and fight publicly to prove their strength. The offender described himself as a structured and programmed individual who works according to a timeline. Thus, in addition to the daytime, he also spent time sitting and thinking in the park routinely between midnight and 2am. It was during these hours that he attacked and murdered his first two victims at their homes. The first victim was based 200-300m from his home while the second victim was 100m away "right here where I can see". Victims were murdered and left at the same location. The proximity of these crime scene points demonstrates domocentricity with no perceived buffer zone around his residence. Interestingly, the right side of the mental map had no distinct boundary, suggesting that the offender may have been willing to venture beyond this area in an eastbound direction. This was indeed the case. He travelled via the most southern of the three entry roads close to his residence in that direction to visit his girlfriend and their child in neighbouring Bez Valley. The 0.5km walk also gave him access to his third victim. Figure 38 shows the suburb of Bez Valley while Figure 39 is the mental map of the third crime scene in this suburb. The offender's second mental map was less detailed in terms of the road structure. He said that he did not know Bez Valley well as he had never really walked around in the suburb. He mentioned that he walked a "straight line" from his home to the home of his girlfriend, unlike in Bertrams where he "veers left and right". He complained that the suburb is not drawable to scale because it is confusing and mixed up with another park, making it difficult to know the distance and the broadness of the place. This suggests less familiarity and confidence regarding this area. Figure 38 Google Map of Bez Valley (3) Figure 39 Mental Map of Bez Valley Crime Site (3) In contrast to the first mental map of Bertrams, this map lacked any defined parameters or boundaries. Furthermore, when describing the distances from home to the crime scenes in Bertrams, the offender stated that they were "just" between 100 and 300m. However, he described his crime scene in Bez Valley as being "very far" when in fact the third crime scene was only an additional 200m further on from his home. It is interesting to note that the locations within his familiar terrain are perceived to be significantly closer than locations that extend beyond the edge of his suburb. The mental barrier leaves him perceiving a location just beyond the boundary as being a lot further away than it really is. The offender had enjoyed his local park since this central position allowed him to see all that was going on around him. Perhaps because the route to Bez Valley followed a straight line, it felt like he could not see the suburb and it thus felt distant, hidden and confusing for him. The offender said that he needed a starting point for his map and chose to begin with his girlfriend's residence. In the absence of his own home, he required a surrogate base from which to proceed. He drew his girlfriend's road and the parallel ditch for

rain water, with his characteristic blocks drawn in between them to represent buildings. The landmarks featured were two parks and a rubbish dump. As in Bertrams, the offender said that he went and sat in one of the parks on the day of the murder to observe the goings-on in the suburb. "I see the guy; where he goes and I see the area", he said. After these observations of the landscape and the routine movements of the victim through that park, he concluded that it was a "simple" area. He did not elaborate on what he meant by that description but said that it led to the decision that he would proceed with committing the murder and would strike there much later that night. The body disposal point was different from the crime scene point with this victim. During his daytime preparation, the offender learned that children played in that park and thus decided that he would need to move the victim after the murder so that they did not discover the body the following day. He noticed a deep and wide ditch nearby and elected to dispose of the body into the ditch, since the sides were high enough to block children from seeing into it. Offender 3 was a marauder since his residence was the launch pad for all his criminal journeys. One of the downsides of geoprofiling is that five or more incidents are required to produce an accurate profile, although an experienced geoprofiler would be capable of producing a report on three crime incidents (P. Schmitz, personal communication, 16 July, 2015). Schmitz states that one could assume that a series of three murders could develop into a bimodal or teardrop pattern. In the case of two murders in the first area, followed by another murder elsewhere, Schmitz advocates that one could instinctively treat it as a teardrop pattern and hence that the crime site positions of this offender would suggest Rengert's (1996) proposed teardrop spatial pattern. Based on his assumption, Schmitz interprets the teardrop pattern thus: the second area is important, but not as important as the primary location (which may include the offender's home) and that has more victims than the second area (P. Schmitz, personal communication, 15 July, 2015). Accordingly in this case then, Bez Valley was important but not as important as the offender's primary location in Bertrams. It must be cautioned however that making such an assumption is highly speculative since the initial crime sites that begin in this formation may not necessarily develop into the teardrop pattern. 6.3.3 Offender 4. Offender 4 was sentenced for the murder of seven victims although when he was interviewed, he claimed to have murdered many more. The victims were generally encountered in the central Johannesburg area (including Jules street in Malvern; Queen Street in Mayfair; and Soweto). They were either relocated to open fields nearby or led up the slope of a mine dump at Jeppestown (near the Denver off ramp on the M2 highway) before being raped and murdered. This offender was a commuter/travelling serial murderer whose murders spanned across 30km of Johannesburg's central suburbs with additional victims murdered along a national road towards, and within, another province (KwaZulu Natal) in the Harrismith area. Beginning on the left side of the page, the offender simultaneously described and drew his murderous journey as he travelled eastbound through the various suburbs. He said, "I know all of Jo'burg", referring specifically to the roads (by vehicle) and routes (by foot) between the areas. As he sketched his mental map, he offered a summary of his nine-year series and the multiple means of transport that he used to gain access to the various areas. The offender began by claiming that he had a house in Crissies (an untraceable area on Google Maps). According to P. Schmitz (personal communication, 15 July, 2015), Crissies could be the informal settlement Chrissiesfontein, which is near Kookrus and Meyerton. A comparison of the road connecting these areas on the Google Map (Figure 40) and on the offender's mental map (Figure 41) suggests that this could well be the case as they appear to be positioned in similar relation to Mayfair. He described driving by car from his house to Mayfair, which he knew well because of previous employment. According to Google Maps, this journey was roughly a 45 minute drive. There he kidnapped and murdered two boys whose mother had failed to give him his money, although he did not specify what for. Sometimes he also ventured into Brixton, since he had worked there before. The offender explained that he often parked his car in the Mayfair area and then proceeded on foot into Johannesburg central to City Deep where he was employed. From there he made use of the truck that he drove for work, although at times he remained on foot or used taxi services. He did not report using vehicles in his actual crimes, however. Figure 40 Google Map of Kookrus to Mayfair (4) Figure 41 Mental Map of Johannesburg Crime Site Areas (4) A comparison of Figure 41, Figure 42 and Figure 43 reveals that the positioning of some of the suburbs in relation to one another is not accurate. This was apparent with the more outlying areas such as Fourways and Alexandra, possibly indicating that he spent less time there and was thus less familiar with them than the more central locations such as Mayfair, Brixton, City Deep, and Jeppestown/Denver. The latter areas included where he had previously worked, where he was currently employed, where he regularly slept overnight at the different hostels as well as where he lured most of his victims to before murdering them. In addition, he said that he shopped in Jeppestown and he visited friends in Booysens and other taxi owner friends in Johannesburg central. Figure 42 Google Map of Denver, Johannesburg (4) Figure 43 GPS Map of Johannesburg Crime Site Areas (4) The Cleveland area was not recognised or recalled and it seemed that he also came across new and unfamiliar areas in his travels. Unlike the previous offender who remained rigidly within tightly defined and boundaried locations, this offender ventured into far wider terrain, sometimes beyond what/where he knew well. Mental barriers seemed less fixed and solid, like pencil lines drawn lightly at the perimeters of the entire area. The overall map showed the names of areas and the route lines between them. These were not entirely accurate, with some suburbs incorrectly positioned in relation to one another, and the George Gogh hostel being erroneously called Josh Gogh. Selected landmarks were drawn on the map. These included his house and the multiple homes of girlfriends and the hostels at which he slept, the Denver mine dump as well as the Hillbrow Police Station. He also focused on where he left his car at places of employment (Mayfair and City Deep). Offender 4 said that he had headed into the suburbs of Bertrams, where he murdered a girl at Regents Park, and then murdered a man. According to him, one victim was murdered at the request of a stepmother and this victim's body was disposed of in Rosettenville. He said that he lured 15 victims to the Denver mine dumps and stated that they were all buried there. According to the offender, only his last victim's body was ever found at the mine dumps. Nearby to one of his girlfriends in Louis Botha Avenue, he claimed the lives of an additional three boys and a girl. Sometimes he ventured north into the Fourways area and said that there are still undiscovered victims buried there. He also travelled on the national road towards the province of Kwazulu Natal and mentioned six victims who were murdered en route and left next to the highway in a place "where they can never be found". The offender stated that he resided in Crissies with one of his girlfriends, but that it was an hour's drive to the Denver mine dump. He thus stated that he moved around within central Johannesburg, sleeping in various places, while he was committing his crimes. These included three hostels in and around Denver and Alexandra, as well as at the homes of two other girlfriends who lived in Marshall Street, Marshalltown and Hillbrow respectively. Furthermore, one of his victims who survived his attack was able to lead the police to another sleeping base. According to P. Schmitz (personal communication, 15 July, 2015), this was a secluded place under the bridge where Harrow Road crosses underneath Heidelberg Road, near to the M2/Heidelberg Road interchange, and it was also where the police finally arrested him. The geoprofile created by Schmitz (2004) was based on the offender's first five crime sites and pointed to this bridge location (Figure 44) as being his residential anchor point. The offender was adamant however, that he did not have one fixed point from which he operated. According to Google Maps, it would have taken him an hour and 45 minutes to walk from the bridge to the Denver mine dumps. It is therefore likely that he also slept over at times, in the other locations and hostels that he mentioned. Figure 44 Google Map of Residence under the Highway (4) The map was domocentric in the sense that he murdered in areas at which he happened to be residing temporarily, even though he did not have one fixed base. Schmitz's (2004) geoprofile in Figure 45 also shows that the suspect's residence under the bridge was located within the top 6% of his total hunting area. Schmitz (2004) used the RIGEL Profiler to model the geographic profile of this offender and stated that the clustering of these sites indicated Rengert's (1996) bull's eye/doughnut spatial pattern. Figure 45 Geoprofile of the Johannesburg Crime Sites (4) 6.3.4 Offender 6. Offender 6 murdered 11 victims. According to the offender, the majority of the victims were murdered at a quarry in Olievenhoutbos, Centurion while a few were murdered at his home about 3 to 4km away and then relocated by car to the quarry. However, there was no evidence that any of the victims had been relocated. Nonetheless, the body disposal points were all at the quarry and there was thus a domocentric focus in his series. Offender 6 lived in a house in the location at the point marked X. The only landmarks drawn there included a road to Pretoria and a dust road drawn down towards a little farm with a quarry nearby. A river that runs past the little farm and the quarry (not far from each other) was included as a landmark, and

the dust road was extended as it heads towards a highway. His house and the roads essentially served as reference points and no other details were added around these locations or between them. Compared to Figure 46 and Figure 47, the mental map (Figure 48) appears to have been sketched accurately. This offender was a traveller in terms of meeting his potential victims. He encountered them across the province as well as in another province, driving these distances for work purposes. After he invited them to visit at his home however, he behaved more like the marauder in that he moved out from his house to the quarry to murder them, roughly 3km away. His cluster of victims at the quarry demonstrates the bull's eye/doughnut spatial pattern (Rengert, 1996). Figure 46 GPS Map of Quarry, Olievenhout (6) Figure 47 Google Map of Quarry Crime Sites / Offender Residence (6) Figure 48 Mental Map of Olievenhout Quarry Crime Sites (6) 6.3.5 Offender 10. Offender 10 murdered five victims in three areas. His first murder victim lived next door to where he resided with his parents in Benoni. Thereafter, when he was located at the SAPS in Norwood as a police officer, he murdered two victims in close proximity to the Barracks at which he was staying. Fearing detection, the offender requested a transfer back to Benoni and murdered another person in that area again. His final murder occurred in the complex of his fiancée's parents in Brakpan, before he was apprehended. The three crime site areas are shown on Figure 49. Figure 49 GPS Map of Benoni / Norwood / Brakpan Crime Sites (10) For the purposes of comparison, the mental map has been subdivided and is presented as separate maps of the three main locations. There was a domocentric focus, with his residences acting as his main reference points. The body disposal sites were at the crime scene points and were located in very close proximity to where the offender was living at the time, as indicated by the small physical spaces depicted in the mental maps. Figure 50 is the mental map drawn of the first murder committed next door to the Benoni house in which he resided with his parents. This first map was "easy" for him to draw. He produced a quick, undetailed and sketched close-up of his parents' house in Benoni, where he resided, and the house next door. As the offender jumped over the wall, the victim had stepped out of a back room of the house (the separate indicated block). The offender said that he was not sure if she worked for the homeowner or if it was her sister. Figure 51 is the mental map of the second and third murders perpetrated in Norwood, close to the SAPS Barracks at which he was based. The second mental map depicted a slightly larger area than the first mental map with landmarks comprising a police station, the Norwood Barracks at which he lived, and marriage quarters behind it. A small low wall separated the Barracks from the sets of flats next to it. Figure 50 Mental Map of Benoni Residence / First Crime Site (10) Figure 51 Mental Map of Norwood SAPS Barracks / Crime Sites (10) The offender sketched two sets of flats and a row of houses "right behind" the flats. He described his roaming travels on foot in terms of the roads crossed, the corners, and the flats or houses counted. According to him, the distance from the Barracks to his furthest victim was no more than a block's walk. After seeing an opportunity in the daytime, he stated that he rehearsed his steps and then returned later that night to commit the crime. Figure 52 depicts the broader Norwood area, with the police barracks central to the map. Figure 52 Google Map of Norwood SAPS Barracks (10) The last mental map is Figure 53. This shows the site of the fourth murder in Benoni, once he had been relocated back home as well as the final murder committed in the Benoni complex of his fiancée's parents. Barring the car or train trip to his fiancée's parents' home, the offender walked to the remaining murder scenes. Figure 53 Mental Map of Benoni / Brakpan Crime Sites (10) The bottom half of the third mental map was of the Brakpan suburb, perceived as "a distance" from his parents' house and described as 10km away. His fiancée's parents resided in a duplex in a walled estate and the offender said that his fourth victim lived two units up from their home. This area of the mental map depicted a few homes next to each other in the complex. The top portion of the third mental map was a panned out portrayal of his parents' home in Benoni as drawn in the first mental map, but included the veldt, a shop at the corner and an additional house "just round the corner". The house was the location of his fifth and final murder victim. Incomplete lines were roughly sketched between the houses or sets of flats to demarcate the roads and/or the blocks. The Google map of the Benoni and Brakpan areas are depicted in Figure 54. No information beyond the immediate murder areas were sketched on any of the mental maps. Figure 54 Google Map of Benoni / Brakpan (10) Schmitz (2004) used RIGEL Profiler to create a geoprofile of this offender. Two equally important anchor points, the SAPS Barracks and his parents' home in Benoni, illustrated a clear bimodal spatial pattern. According to him (P. Schmitz, personal communication, 15 July, 2015), the third crime location had only one murder and could possibly be viewed simply as an opportunity that the offender could not pass up. As geographically profiled by Schmitz (2004), Figure 55 indicates that the two main anchor points were both located within the top 1% of the offender's total hunting area. Norwood serial rapist Figure 55 Geoprofile of Norwood / Benoni / Brakpan Crime Sites (10) 6.3.6 Offender 11. Offender 11 was imprisoned for a murder in Springs. Within a year of his release, he murdered again within the same area (Figure 56). Although born and raised elsewhere, the offender said that he had resided in Springs for four years and thus knew the area well. Figure 56 GPS Map of Springs Crime Sites (11) The mental map (Figure 57) shows the path that the offender walked with a friend down towards the river. At the junction, he met his victim by chance and walked her along the river to a private bushy area, where he took her possessions and "all that", then killed her and left her body there. The offender stated that he used the pathway as a shortcut from town to visit and assist a friend's business at the location. He knew that there were bushes further along the river and was able to capitalise on the opportunity by relocating her. Compared to the Google map (Figure 58), the mental map is quite accurate and detailed in terms of the businesses that are based along the main Ermelo Road, although the distances between them are greater and thus not drawn to scale. The offender resided in 8th Street at the time. This was roughly eight blocks up from Ermelo Road, past the garage. Figure 57 Mental Map of First Crime Site, Springs (11) Figure 58 Google Map of First Crime Site Area, Springs (11) Compared to the Google map of the same area (Figure 60), the second mental map (Figure 59) was a relatively accurate depiction of the total area in which he resided at the time (2nd Street), where he encountered his victim, a woman that he knew, at a nightclub he frequented (on 4th Street and between 3rd and 4th Avenue), the park in which he murdered her as well as the soccer ground at which he disposed of her body. The main connecting roads (Ermelo and Niger Roads) between these sites were drawn, while the interconnecting roads and landmarks were omitted. The offender walked to his nearby home and from there, he and his victim travelled in her car nine blocks to the park to take drugs together. After murdering her in the park, the offender took her vehicle and transported her body to an open soccer ground diagonally adjacent to the park. He knew the park well, as he smoked there and was also collected and dropped off from this point for work. He knew of the drainage system on the soccer field as he had played there before. The reference points sketched in his mental map thus included his residence as well as the occupational and recreational sites that he regularly visited: the nightclub, the park and the soccer field. In the first murder, the murder/disposal site was just further along the river from the encounter site and these were "quite a distance" from the offender's residence. In the second murder, the encounter, murder and disposal sites were all different. Figure 59 Mental Map of Second Crime Site, Springs (11) Figure 60 Google Map of Second Crime Site, Springs (11) While the encounter site was only two streets up from the offender's residence, the murder site and the disposal sites were an additional nine blocks further away, similar in distance between the residence and murder/disposal site of the first murder. If the anchor point is somewhere in between two crime scenes, it could develop into a bull's eye/doughnut spatial pattern. If one could imagine that the two crime sites were each at the two ends of half a circle, the residences of the offender were approximately based in the centre of the arc. Thus, additional crime sites could have developed into this shape (P. Schmitz, personal communication, 17 July, 2015). 6.3.7 Offender 12. Offender 12 was sentenced for two murders in Orange Farm, where he resided at his father's house, and one in Weilers Farm. He denied committing the third crime. The first victim, an ex-girlfriend, walked the offender from her home to a taxi rank "not far" away. The two minute walk to the main road where the offender would catch the taxi was via an open veldt. The offender stated that he knew of the veldt, having walked past it whenever he visited her and that he chose to murder and leave her there. The distance from the veldt to his residence was roughly equivalent to an hour's walk, although he usually caught a taxi late at night. The second victim, a stranger, was encountered at a party next to shops that took five minutes to reach from his father's house. At his request, the woman returned home with the offender. Later, when she wanted to return to the party, the offender argued and escorted her in the opposite direction to the shops. They began walking, crossed a street and after about five minutes, reached an open space. The offender said that he knew that place because he travelled past it by taxi to work and also walked occasionally to the

garage nearby to purchase airtime for his mobile phone. The offender murdered and left the woman there. The mental map in Figure 61 was accurately sketched in terms of the roads and landmarks, when compared with Figure 62 and Figure 63. Reference points included the main roads within the township, the residences of his father and ex-girlfriend, nearby shops and a garage, taxi ranks on either side of the township as well as another garage along this route. Apart from the roads connecting them, the detail of the area between his and his ex-girlfriend's residences was omitted. The offender may not have been as au fait with this section of the township and it did not seem to feature as important terrain in terms of his daily activities. There was a domocentric focus as the two crime sites were located near to the residence of his ex-girlfriend and to his own residence, respectively. Figure 61 Mental Map of Orange Farm Crime Sites (12) Figure 62 GPS Map of Orange Farm Crime Sites (12) Figure 63 Google Map of BP / Palm Drive, Orange Farm (12) The offender also mentioned that he was particularly aware of all the open spaces within the township and both crime sites were located in these familiar open veldt areas. Rengert's (1996) proposed teardrop spatial pattern is relevant here since Weilers Farm was important in that he was sentenced for a murder there, but not as important as his primary location in Orange Farm where two murders were committed. 6.3.8 Offender 13. Offender 13 was convicted of seven murders, perpetrated in the same location of Capital Park, Pretoria. The offender encountered his victims in town, close to where he worked. Once the victims had been lured and relocated away from town to a particular spot on the mountain, the offender murdered and left each of them there. The strong domocentric focus was evidenced by the crime sites all being a few hundred metres away from a tower in which he slept. The drawn components of the offender's mental map of Capital Park in Figure 64 are generally accurate when compared with the Google map in Figure 65. The location of the landmarks, the main connecting roads and railway lines between them, as well as the direction of the suburbs denoted with arrows are correct. The two main reference points in the mental map included the offender's residence in the mountain, and his place of work opposite the Pretoria Station. The home area was detailed in terms of the public transport there (Bella Ombre Railway Station) as well as the view of the golf course and the high school that he had below him from the mountain. One of the roads in Capital Park was drawn connecting to the main road (Paul Kruger) leading down to Pretoria Station; a distance equivalent to a five minute drive. The station, opposite to where he worked as a security guard, had a central placement on his mental map. From this reference point, the offender sketched the surrounding landmarks of importance to him: the produce markets from which he bought goods to sell, as well as two colleges, one of which he hoped to attend one day. Figure 64 Mental Map of Capital Park (13) Figure 65 GPS Map of Capital Park Crime Sites (13) In his second mental map in Figure 66, the offender seemed to draw from the perspective of being on foot. He depicted the Pretoria Zoo, next to which he stayed in the mountain. As he left home and walked thirty minutes eastbound, he showed the Wonderboom suburb to the north and Capital Park Station to the south. Thus, the locations that were part of his daily activities and travels were included in the maps, while the areas between them and likely to be least frequented were omitted. As shown in Figure 67, the crime sites were essentially positioned in a line with the offender's residence almost in the middle of it. The linear shape was most likely influenced by the fact that the murders occurred along a mountain ridge (G. Labuschagne, personal communication, 15 November, 2015). Figure 66 Mental Map of Capital Park Station (13) Figure 67 Google Map of Capital Park (13) 6.4 Drawn Mental Maps of Remaining Offenders For the remaining seven offenders whose crime sites had not been plotted as physical GPS maps, their personal commentaries on their drawn mental maps were explored briefly for any possible geographical significance. Their familiarity with the drawn crime areas, their reference points, and the location of their homes in relation to their crime sites, guided the exploration. 6.4.1 Offender 1. The first offender was convicted of the murder of six Black children within his local area, although he admitted to only four of them. He drew a panned-out view of this massive Moklaheng township (Figure 68). Raised there and still residing in it at the time of his murders, he stated that he knew the township very well albeit that he wasn't familiar with the names of all the places therein. Beginning with a long, labelled road across the middle of his mental map, the offender divided the township below the road from the plots and veldt area above it. He also claimed to have been very familiar with this veldt, which he described as a farm, since he regularly picked fruit there as a seven year old youngster. Within the township, his main reference points included a soccer stadium, a shop, and the four streets (all labelled) in which he resided and/or encountered his particular victims. He also mentioned a "primary high school" in the area, but did not draw it. The map was not drawn to scale. Offender 1 stated that the streets and the shop, though nearby to one another, were actually very far from the stadium and the dividing road. His father had two houses. The one located in Kgana Street was "a little bit far" from the soccer stadium while the second residence in Vilakazi Street was "very far away" and an estimated two hours' walk from his crime sites. He said that he began his series in Kgana Street, since he was more familiar with that section of the township. He described how he lured his victims away by giving them sweets or money and then suggesting that they walk to the shops. His cluster of victims demonstrates the bull's eye/doughnut spatial pattern (Rengert, 1996), although they were far in proximity from his residences. Figure 68 Mental Map of Moklaheng Township Crime Sites (1) 6.4.2 Offender 5. Offender 5 beat, raped and murdered 38 Black women in remote areas. He had three main familiar hunting areas which spanned a broad terrain: Cleveland in central Johannesburg; Boksburg in the east; and northbound to Atteridgeville in Pretoria. The areas were familiar to the offender as they included where he had been born and raised (Boksburg); where he had worked before and where he had gone to appeal an old sentence at a police station (Cleveland); as well as where his common-law wife and their child resided (Atteridgeville). The offender described his movements across the neighbouring suburbs, stating that the areas in between these primary bases were often the target locations albeit that he was less familiar with these places. He selected them for their privacy. His murders were "not at all" near to his residences, but rather located in the areas between his various bases. The primary landmarks included in his mental maps (Figure 69 and Figure 70) were the various train stations that he used with ease to traverse this broad area and of which he became aware as he travelled around. In addition, he knew the shortcuts that people walked in the areas as he generally lured his victims away on foot. He stated that he also frequented the train stations as he could encounter potential victims there. In the final weeks prior to his capture and arrest, it was also from a train station that he had made calls to a Star newspaper reporter identifying himself as the murderer. When she asked if he was joking, the offender elected to demonstrate his answer. He travelled to Cleveland by train since it was "easy" to access from there, and he murdered again before returning to the station. Since this offender travelled through multiple areas, his victims were not collectively clustered in any identifiable spatial pattern as suggested by Rengert (1996). Figure 69 Mental Map of Cleveland and Boksburg Crime Sites (5) Figure 70 Mental Map of Atteridgeville Crime Sites (5) 6.4.3 Offender 7. Offender 7 was able to describe his Port Elizabeth hunting area well. Walking everywhere, so that he could "get into places" that were not possible with a car, the offender learned the locations that were "to one side", that were "peaceful and grassy" and from where he could "see in all directions to the town". The landmarks sketched on his mental map (Figure 71) included his residence, a park and a school field, as well as a hotel. He also indicated the distances of each of the landmarks from his home, which ranged between 2.5km and 10km. The distances he walked after encountering a potential victim differed according to his levels of sexual arousal at the time. One victim was escorted nearly 5km away from where he met her, while another victim was taken to the "nearest place I could go 'cause I wanted her badly". The mental map shows a buffer zone around his residence. He stated that he wanted to keep his area "clean" and thus deliberately avoided murdering within a certain range of his house. From his residential base, the crime sites form a 180 degree arc that is indicative of the windshield pattern (Warren et al., 1998). Figure 71 Mental Map of Port Elizabeth Crime Sites (7) 6.4.4 Offender 8. Offender 8, who murdered three Black girls in mealie fields in Kroonstad, sketched his two residences during the period of his crime series. The first murder site was drawn very near to the first residence on a farm. The following two murder sites were drawn nearer to his second residence in the township. Hence, the mental map (Figure 72) indicated a domocentric focus in his choice of target areas. He stated that he was familiar with both areas, as he had worked on the farm before and would frequent the location, via town, regularly. Figure 72 Mental Map of Kroonstad Crime Sites (8) Later, when he relocated to the location, he began driving taxis in the area. This was how he gained access to his victims and also how he was able to relocate them to the mealie fields about 10km away, where he raped and murdered them. He stated that he knew about the fields from having driven those roads before. His reference points in his mental map included his residence

on the farm as well as in the location, the taxi rank and the supermarket in town where he encountered his last two victims, and the mealie fields where he attacked and left the bodies. The crime site locations suggest Rengert's (1996) proposed teardrop spatial pattern, since there was one murder in one area, followed by an additional two murders in another area. 6.4.5 Offender 9. Offender 9 raped, mutilated and murdered three White sex workers and he murdered one White man. He sketched and labelled his mental map very quickly, clearly indicating that he was very familiar with the city centre of Port Elizabeth. He drew as his main reference points, three of his residences as well as where he worked, and also added two hotels and two taxi ranks as landmarks. He stated that he was familiar with all the hotels and nightclubs in the area, as he worked in security and these locations were part of his daily life. The offender then drew the roads that connected these points and some of the blocks in between. The mental map (Figure 73) presented a clear domocentric focus. Apart from his first victim who was murdered near to where he worked and socialised at clubs along the main street, the remaining three victims were murdered at or near to his residences. The second victim was attacked close to where he resided in his employer's house; the third victim was murdered at the boarding house in which he resided and managed; and his last victim was killed at another boarding house in which they resided together. Figure 73 Mental Map of Port Elizabeth City Centre (9) 6.4.6 Offender 14. Offender 14 was imprisoned for the murder of a man that he knew as well as of a young girl and a young boy. He drew his mental map (Figure 74) as a series of sites along the R37 road in Polokwane, with a highway running parallel to the road. Figure 74 Mental Map of R37 Road in Polokwane (14) At the top end of the road was his house, with a police station drawn near it, followed by another location indicated 3km to 5km further down, where the first victim was murdered. He stated that he used to reside in that location and that he had known the man. Continuing down the road for what he said was another 15km to 20km, the offender drew the area where his ex-girlfriend resided and he stated that he still visited her at the time. This was also where the second victim had been discovered. A further 5km on, as indicated by the offender, was the area where his aunt lived and whom he also visited on occasion. The third victim was found within this relative's area. The offender expressed that he knew the areas because he travelled this road each day to work. Although Interviewee 14 denied committing any of the murders, it is interesting that all of the murder sites were oriented in one stretch of road between where he lived and where he worked. As typical of many marauders, a domocentric focus is thus suggested. Furthermore, the victims clustered within an acute angle from his residence demonstrates the windshield wiper pattern (Warren et al, 1998). 6.4.7 Interviewee 15. Interviewee 15 also denied having perpetrated the crimes for which he was sentenced. He was charged with the murder of two teenaged girls in Phokeng, a region within Rustenburg. He labelled the centre of his mental map (Figure 75) as the Rustenburg taxi rank with Phokeng, an area within Rustenburg, drawn near to it. The offender then added the names of two sub-areas of Phokeng, on either side of the label, as well as the location of a mineshaft, above it. These three areas were thus positioned in a triangular shape. He stated that he resided in the sub-area of Phokeng, Masasobane, at the bottom left; that the victims came from the Mineshaft #8 area above; and that their bodies were discovered in the second sub-area at the bottom right, Lemenong. He also drew lines to indicate the taxi routes driven between these reference points and included their estimated distances. Figure 75 Mental Map of Phokeng Crime Sites (15) The offender explained that he travelled 15km from his home to the taxi rank, and from there he drove another 20km to drop off and collect passengers at Mineshaft #8, which was his designated route as a taxi driver. He estimated the distance between his home and Lemenong, where the two bodies were found, to be roughly 8km but said that he did not drive there as it was not a route assigned to him. However, the offender did travel to where the victims resided and if he had relocated them to Lemenong, he would have travelled 15km back to the Rustenburg taxi rank or a shorted 8km back home. With only one location, no spatial pattern is demonstrated. Importantly, however, his residential and work bases were both in close proximity to the murder site. 6.5 Conclusion A summary of these local results will be presented in the final chapter. These findings will be specifically reviewed as they pertain to the international literature on serial murder and geographical profiling. Recommendations for the future of geographical profiling in South Africa will be offered in conclusion. "You too, can learn to be a serial killer" (Robert Hale) CHAPTER VII SUMMARY AND FUTURE RECOMMENDATIONS A fundamental investigative psychology question was asked in this thesis: what did the serial murderers reveal about themselves by where they committed their crimes? A summary of how and where their crime locations were selected will be presented. These will be compared to the international research literature on the geographical trends of serial murder. In addition, future recommendations for South Africa will be offered in conclusion. 7.1 Summary Comparable to their offending counterparts in the USA, the offenders in this study began their series in their late twenties or early thirties. Most of them had previous criminal records mainly for fraud, assault, rape and murder. However, unlike the American serial murderers who averaged 13 victims each, the current sample averaged 4 murders each; possibly due to faster apprehension times in South Africa. Black women were the most targeted population group of the total number of victims and 60% of the offenders had a mixed victimology, with regards to the race, sex and age of their respective victims. As presented in chapter 3, international research has identified multiple factors influencing the location choices of serial murders (Brantingham & Brantingham, 1995; Canter, 1977; Rossmo, 2000; Canter, 2007; Canter & Youngs, 2010) and these factors will be discussed as they pertain to the verbal descriptions and drawn mental maps of the current sample of local offenders in this study: domocentricity; routine activities and mental maps; crime locations as the settings for offender narratives and victim activity spaces; target backcloth; nodes and the pathways that connect them; temporal changes; physical and mental barriers; and body disposal sites. 7.1.1 Domocentricity. There have been multiple advocates for the offender's residence shaping the geographical range of his criminal activities, a concept known as domocentricity. The proximity of nearly all of the offenders in this study to their homes or to the homes of significant others, played an important role in where they committed their crimes. This supports the principle of least effort and Canter's concept of propinquity (Canter & Youngs, 2010) in that most of these offenders did not travel long distances to commit their crimes. They offended in small areas based largely around their residences (Canter, 1994; Coffey & Canter, 2000; Rossmo, 2000; Lundrigan & Canter, 2001a; Canter, 2007; Canter, 2008; Gabor & Gottheil, 2008). Many of the interviewed offenders had multiple residences during the course of their series and their crime scene locations moved with them when they relocated to these different residences. This lends further support to the importance of their residences as anchor points. In addition, some of them used the residences of their girlfriends as geographical launch pads for a few of their murders. Only one offender did not have a domocentric focus. He travelled between the train stations of three broad areas and his residence did not feature in the selection of his crime sites. Hence, it would not have been possible to geographically profile his home using quantitative analysis. 7.1.2 Routine activities and mental maps. Routine activity theory states that offenders could become aware of opportunities for crime and /or will seek them out as part of their usual and daily legitimate activities (Cohen & Felson, 1979). The theory especially highlights that where suitable victims are present and capable guardians are absent, the risk for criminal behaviour is at its greatest. In addition, and based on the theory of response hierarchy (Hull, 1943), these repeated geographical behaviours become so ingrained that they develop into unconscious habits. A review of the offenders' responses as to why they selected the crime sites that they did indicated that the majority of the offenders indeed viewed their locations as the products of unconscious habitual frequenting. All of the offenders claimed to have been familiar with their chosen murder sites, since they resided, worked, shopped, travelled past and/or engaged in recreation there. Furthermore, many of the offenders stated that the places had privacy and secrecy. One offender who had murdered 38 people specifically supported the notion of the absence of guardianship, stating that his areas were selected ultimately because "There was nobody watching; that's the reason". The offenders stated that they crossed paths with their victims because of where they were: in the same place at the same time as the offender. This concurs with Canter's (2008) contention that as each offender operates from a base; these coincidental meetings with victims inform us of the daily activity spaces that these offenders travel. In addition, to have the greatest chance of success and to avoid detection, Canter's concept of morphology (Canter & Youngs, 2010) suggests that mental maps of the places that serial murderers ordinarily use and are familiar to them influence them in where they encounter, murder and dispose of their victims. The mental maps of the offenders in this study included all or some of the elements as identified by Lynch (1960) to organise their drawings: paths, highways and railways; edges and boundaries such as rivers; districts and subareas; nodes

such as shopping malls or corner shops; and landmarks. Most of the offenders had a nodal-based mental map with their familiar footpaths and/or freeways drawn as linear connections between these points (Canter & Youngs, 2008a). For many of the offenders, specifically those who did not own vehicles, public transport nodes such as taxi ranks and railway stations featured prominently. Most of the mental maps were accurate in terms of where the main reference points were located, including the residences or other bases of the offenders and some of the major landmarks of the area. However, the closeness of these sites to one another was not always plotted to scale and was also influenced by the physical features in the uneven landscape (Rossmo, 2000). Mental barriers seemed evident at times in these perceptions and will be discussed further on. In addition, some of the offenders who drew more detailed maps of their areas, tended to simplify complicated crossroads as right angles. They added various known locations such as shops, garages or parks as their dominant guiding features on these roads. In accordance with the geographical theories (Canter, 2000b; Canter, 2007; Canter & Hodge, 2008), these distortions highlight the unique representations that these offenders drew upon as a reference when sketching their mental maps and that assists us in understanding how they conceptualised their environments. Based on the interviews and drawn mental maps of the fifteen serial murderers in this study, it would seem that they predominantly represent a marauding routine activity, route-following model of environmental learning. As in North America (Canter & Youngs, 2010) and Australia (Meaney, 2004), the offenders had an optimal range over which they murdered which was not far from their homes or other bases. Barring one travelling serial murderer, all of the other offenders in this study were marauders. One of the marauding offenders was a traveller in terms of meeting his potential victims, but later he invited them to visit at his home and from this base he followed a marauding pattern to a particular nearby location to murder them. 7.1.3 Crime locations: settings for offender narratives and victim activity spaces. Canter's (1994) five-factor model claims that crime can be seen as a distorted interpersonal transaction between offender and victim, and that it can change over time. Canter (2000b) theorised that the crime locations are the settings for the offenders' personal narratives and that the ranges of their journeys typify them (Canter, 2007). In Canter's (1994) consistency principle, he reasons that the actions performed by the offender during the perpetration of his crime reflect exactly the behaviours that will be enacted in his everyday situations and that how the offender deals with his victims is how he deals with other people of significance to himself. All of the offenders stated that they had wives, fiancées or girlfriends at the time of committing their crimes, although not much was known about the nature of these relationships. In addition, Canter (2007) stated that the encounter locations are the victims' activity spaces and thus will have meaning for the victims. If the serial murderers are to derive satisfaction in telling their stories, they need an opportunity to find available victims coupled with little chance of detection (Rhodes & Conly, 2008). Within their narratives, most of the offenders in this study could identify what role they were playing and they could also describe their own understanding of how significant earlier episodes in their lives justified and contextualised their crimes within their broader life stories. The majority of these offenders relayed stories of their dysfunctional upbringing and their experiences of abandonment, rejection, sexual and/or physical abuse or broken romantic relationships. Three offenders identified with the role of Victim, while five other offenders identified more with the role of Revenge in their murder series. Two offenders identified more with the motive of gaining power and another with gaining success. True to the teachings of the SAPS Psychologically Motivated Crimes Course Manual, the majority of these interviewed offenders indeed had narratives with a sexual theme, expressed as indecent assault or rape. Since these behaviours would require time alone with their victims, crime site locations were also selected for their remoteness and privacy. As suggested by Canter and Youngs (2010), the various narratives expressed their sexual behaviour differently. Of what was known about their crime scene behaviour, there did seem to be an indication of vindictive brutality in at least three of the Revenger offenders in this study, while bizarre behaviour was also suggested in the behaviour of the two offenders seeking power. One of the Power offenders cut off and ate both nipples and external parts of the vagina of a victim, while the other inserted a stick into the vagina of a victim. In contrast, most of the Victim offenders did not appear to demonstrate additional brutal sexual behaviour other than to rape or sodomise their victims. The notion that a twofold version of Canter's (1995) interpersonal model is an accurate representation of South African serial murderers (Horning et al., 2015) is contended in this study. While the content analysis did reveal that the majority of the interviewed offenders corresponded to two of the three victim types, there were two serial murderers who fitted the Victim as Person theme. The Victim as Vehicle theme was found to be the more consistent interpersonal mode, as 75% of these offenders dominated their vulnerable victims with power and control. Most victims were lured with a con/lure approach and were ordinarily sex workers; women seeking employment that were promised employment; as well as children being offered money, sweets or toys. For linkage benefit, Salfati et al. (2015a) used the Victim as Object/Vehicle model to test the displayed behavioural consistency of previously sentenced South African offenders across their series, and concluded that this is influenced by the level of interaction with their victims. They found that the Vehicle as Victim theme started to decrease after the first three crimes and that these offenders had fewer victims than their Victim as Object counterparts. However, this was not found to be the case in this study. The Victim as Vehicle offenders averaged nearly six murders each in their series of an average 2.3 years. One offender, who murdered an uncharacteristic 38 people, was not included in this average. The Victim as Object offenders however, averaged only four murders each in an average five-year period. Interestingly, the Victim as Vehicle group perpetrated more crimes in less than half the time period. Furthermore, and according to their argument (Salfati et al., 2015a), the Victim as Person offenders would have been expected to murder even fewer victims each. However, while one of these offenders murdered 3 victims, the other offender had 11 victims. More research exploring the behavioural consistency of our local serial murderers across their series is therefore necessary. 7.1.4 Target backcloth: Nodes and pathways. The hunting ground of serial murderers is affected by the target backcloth: the geographic and temporal distributions of suitable targets. Thus, the victims (type) as well as where they might be available play a role. Holmes and De Burger (1988) had suggested that serial murderers seeking out specific victim types who are unevenly spread throughout the physical landscape, will have areas of attack that are more influenced by the victims' lifestyle areas than by their own. This influences the distance between anchor points and where the crimes occur. People move and meet in space. It was suggested that these areas are generally nodal-based (home, work, recreation etc.) or fall along the pathways that connect them (Brantingham & Brantingham, 1981). Since people congregate and meet at nodes and then disperse in several directions as determined by networks flowing to and from the node, the nodes are crime generators or hotspots that offer opportunities for victim encounters. Two of the offenders claimed, for different reasons, that they had targeted specific individuals and thus their crime sites were influenced by the location of their victims; a number of whom were a distance from the residence of one of the offenders. However, for the remaining offenders, potential victims were generally encountered at nodal points nearby to the offenders' bases or along streets and footpaths. Other victims, notably children, were encountered in townships and informal settlements. Finding victims generally seemed to be an unproblematic task for these offenders. Considering that the majority of the victims represented by the offenders in this study were Black women and Black children, it perhaps speaks to the particular vulnerabilities of these subgroups within the South African population. Most Black women do not drive or own vehicles and thus rely on public transport (congregating daily at public nodes such as taxi ranks and railway stations) or use shortcut footpaths which can be off the main pathways (leaving them alone and vulnerable). In addition, the general township life is lived outside of the house and on the streets. It is not uncommon for children to wander around the streets of these settlements, very often unaccompanied by guardians. This lifestyle of heightened public exposure therefore puts them at particular risk for victimisation. Similar to the encountering of victims, the escorting of victims to isolated places is also more easily camouflaged in a culture where it is commonplace to see people of different sexes and ages walking together at different times of the day and night, along streets and remote footpaths. The murder/disposal sites of the offenders were therefore generally not too far from their residences or other bases. Based on the plotted coordinates of the crime maps of eight of the offenders, certain spatial patterns as proposed by Rengert (1991) were recognised. The multiple crime sites of four of the offenders demonstrated the bull's eye/doughnut pattern, and two of them displayed a bimodal pattern and the remaining two had a teardrop spatial pattern. 7.1.5 Temporal changes. Since the fear of detection can lead to temporal changes in the geography of the serial

murderer, adjacent crimes in a murder series can be located further apart than alternate ones (Lundrigan & Canter (2001a). Changes may also result from the offender's learning, maturation and increased skill as a criminal (Rossmo, 2000), from changes in his routine activities, or because the serial murderer changes employment or goes on holiday (Canter & Youngs, 2010). These reasons were offered by the offenders in this study when they were asked about their relocations (if relevant) from one area to another. The general consensus for most of them was that they were fearful of being caught, while a few of the offenders mentioned that some of their area shifts also happened after moving residences or changing employment. There were three offenders who offered alternative explanations for their relocations however, including: the guidance of voices; the avoidance of Muslim mafia; and the avoidance of a place that triggered bad memories for him with the possibility of turning over a new leaf and a life of no crime in a new area. It could be suggested that the two offenders who did not relocate in spite of being aware of the discovery of their victims' bodies, might have possibly lacked the maturation and skill to shift their locations and that they were perhaps not so much electing to remain in the same areas as they were lacking the confidence to relocate to less familiar locations? 7.1.6 Physical and mental barriers. Canter (2007) suggested that individual crime sites and their relationship to one another are partly determined by the physical and mental barriers of the geographical terrain. Geographical features can have a distorting influence (Canter, 1977). Mental buffers show how the environment takes on symbolic and emotional relevance. In his mind, the serial murderer can think of a physical barrier, such as a railway line, as a buffer that hides him. While two offenders claimed to have murdered their victims in, and next door to their residences, most of them committed their offenses a little further away. One offender commented on walking a distance to murder his victims, as he desired to keep his area "clean". This may have also demonstrated the proposed buffer zone explanation in that the area located immediately around his home was viewed as being dangerous because of its closeness to his residential base (Rossmo, 1995b). While the offenders best know the areas where they live, they are also best known in them. Furthermore and interestingly, some offenders seemed to perceive familiar areas as being nearer while unfamiliar terrain was viewed at times as being further away when both locations might have equally located distance-wise. Baker and Donnelly (1986) referred to the crossing of boundaries as being perceived as a longer journey than one that does not cross boundaries. One offender describing the distances from his home to the crime scenes in his own suburb as "just" between 100 and 300 metres. However, when he described his crime scene in the neighbouring suburb which was a mere additional 200 m further on from his home, the site was considered "very far". The locations within his familiar terrain were perceived to be significantly closer than locations that extended beyond the boundary's edge of his suburb. This offender had enjoyed his local park since this central position allowed him to see all that was going on around him. Perhaps, because the route to the neighbouring suburb followed a straight line, it felt like he could not see the suburb and it thus felt distant, hidden and confusing for him? The mental buffers of extending into foreign terrain seemed evident in these perceptions (Canter, 2007). 7.1.7 Body disposal site. Unlike their US counterparts who disposed of the bodies in a separate location to the murder (Kraemer et al., 2004), 91% of the 117 victims in this study were left at the murder site. This is comparable to the research results of Salfati et al. (2015a) who established that 93% of the 302 South African victims in their sample were discovered in the same location as the murder site. Labuschagne and Salfati (2015) have challenged the assumption that the offender's experience is demonstrated in his disposal of the victim's body at a different site to that of the murder (Fox & Levin 1994; Rossmo 2000). This thesis concurs with their view as these local offenders lured their victims to accessible isolated spaces where it was simply not necessary to relocate the bodies once they had been murdered. The outdoor locations represented in this study included veldts and parks primarily, a mine dump, a quarry, a mealie field, and a farm. Leaving their victims at these crime scenes had more to do with taking advantage of the hot, predatory South African landscape (Salfati et al., 2015a). Hence, planning was required by the local offenders but more so pre murder than post murder. Since most of the serial murderers did not own vehicles, and could therefore not easily transport dead bodies, it was necessary for them to lure their living victims to private locations first before murdering them. These results concur with the findings of Sorochinski et al. (2015). Isolated spaces seemed to be the areas of choice within the Victim as Vehicle theme, which was the dominant approach and occupied two thirds of the sample. According to the responses of the interviewees, isolated places allowed for extended time to be spent with victims before their murder (mainly women and children) and most commonly involved sexual assault of some nature. Male victims within the Victim as Object theme, on the other hand, were often blitz attacked in public view or sometimes at their victims' township homes, indicative of the offender's lack of intent to spend time with them. In accordance with international research into body disposal site patterns (Lundrigan and Canter, 2001b), and because of the pre- planning required, the body disposal locations indeed reflected the conscious spatial decisions of the interviewed offenders. Like their UK counterparts, body disposal sites were located around their homes and biased towards the locations in which they conducted their legal routine activities. Of what is known regarding the order of their crimes, it would appear that the sizes of some of the offenders' domains did increase over time. However, due to partial information, this could not be said categorically for all of the offenders in this sample. In conclusion, and as with the findings of international research and literature, the geographical behaviour of South African serial murderers is also learned, patterned and predictable. Physical pathways are a reflection of learned behaviours that have simply become routined habitual patterns and form the offender's dominant geographical responses, objectively expressed in the form of crime locations. These locations in turn provide insight into the mental maps, and thus probable familiar activity spaces, of serial murderers. The researched and supported information generated from a geographical profile can thus be a useful and powerful accompaniment to any South African crime series investigation, as well as offer partial evidence of the linkage analysis presented during the trial. Although not yet formally acknowledged in our South African courts, geographical profiling has already been extremely beneficial to the investigation of serial murder. A noteworthy example is when the geographical sites of the 1990s Capital Park serial murderer assisted the SAPS in linking seven crimes. Once linked, the offender was arrested within a record-breaking 48 hours (Hosken, 2012). 7.2 Future Recommendations If geographical profiling is to develop, be used prospectively and earn its rightful place within the South African criminal investigative context, there are current areas of challenge that will need to be addressed. 7.2.1 Local research. The continued exploration of the geographical behaviour of our local serial murderers particularly, is the first recommendation. As a new field of study in South Africa, this is the obvious path for any discipline that wishes to extend its understanding, its theory, and its practicality. For Labuschagne and Salfati (2015:1), research "can aid practice by highlighting key questions that need to be answered and practice-based assumptions that need to be empirically tested". Some areas of recommended focus are highlighted. The CIA process and creation of probable profiles of South African suspects should ideally be guided and supported by local research on the unique criminal actions within its own culture (Schmitz, 2004; Labuschagne & Salfati, 2015; Salfati et al., 2015a; 2015b; Sorochinski et al., 2015; Horning et al., 2015). Some suggested areas of research include: creating typologies based on distance differences; exploring crow flight validity in how distances are perceived; and how the morphology or structure of sites on mental maps match the narratives of the offenders (Canter & Youngs, 2008b). There is a need to develop theoretical models and processes that would guide and standardise how to judge mental maps more objectively as well as qualitatively analysing these maps in relation to the plotted maps of the same crime sites. Homicide studies conducted overseas have not always proved applicable in the SA context. It is fairly common for these South African serial offenders to employ multiple modus operandi in the execution of their targets (Schmitz, 2004; Labuschagne, 2012), and rapid body decomposition as well as predatory activity feature regularly in local serial murders (Labuschagne, 2004). It is therefore necessary that extensive local research be conducted regarding the increased differentiation between these crime scene factors so that the linking of South African serial murder cases becomes increasingly more effective and rapid. Since serial murderers in South Africa tend to act in wide- ranging activity spaces (Cooper & Schmitz, 2002) and there are some who follow a travelling pattern, their crime locations will sometimes fall outside of or beyond the proposed circle area (Canter & Larkin, 1993) that encompasses their homes and there would be little or no overlap between their home and criminal ranges. As most of South Africa's murders occur in the veldt and most offenders do not live in the veldt, Labuschagne (G. Labuschagne, personal communication, 4 April, 2011) remarks that South African investigations do not currently benefit from these quantitative geographical profiling models of

predicting where the anchor point is or in identifying residential locations as these do not apply. He adds that the current models offer no assistance in prioritising and narrowing down the search area in which to find and apprehend the offender as the offender does not tend to fall within the patterned and predicted spheres of domain. There is a current challenge therefore to model methods of geographical profiling that incorporate migrant offenders into the geographic profiling framework (Woodworth & Porter, 1999; Schmitz, 2004) and that are not based on the assumption of domocentricity (Canter & Youngs, 2008a). It is thus imperative that the geographical profiling of serial murder be researched further in South Africa and that it develops into a commonly accepted principle within the field of crime investigation, if it is to be used as an effective linking tool. 7.2.2 GIS integration. There are several unique challenges that South Africa faces in deriving the full and much needed benefit of quantitative geographical profiling, considering our high serial murder rate (Hodgskiss, 2004). 7.2.2.1 GIS training. The spatial aspects of crimes within South Africa have not normally been recorded and there are few trained local South African geographical profiling analysts. Up until 2014, geographic profiling systems had not been utilised within the SAPS. Since then, some members of the SAPS, those placed in the Investigative Psychology Section, have received training from Canter in geoprofiling and Dragnet (G. Labuschagne, personal communication, 5 June, 2014). One of the few people to have geoprofiled local cases, Schmitz (2004), cautions that geographical profilers need to be thoroughly trained and mentored in profiling and analysis (as is done overseas) if they are to offer any investigative benefit. Certified geographic profilers abroad are members of the International Criminal Investigative Analysis Fellowship (ICIAF), a professional profiling organisation. Additionally, a training programme for Geographic Profiling Analysis (GPA) has been developed in Canada and is regulated by the Committee for GPA Training and Certification (CGPATC, 2014). The aim of creating the programme has been to uphold geographical profiling as a meaningful investigative tool and to ensure that a qualitative standard of training, certification and ethics is maintained in the profiling analysts (CGPATC, 2014). 7.2.2.2 SAPS infrastructure. For Breetzke (2006), a critical question is whether the SAPS have the required knowledge, capacity or infrastructure to incorporate Geographical Information (GI) into its investigative process. He presents the challenges and obstacles that are currently limiting its full integration with GIS. Since the SAPS' information network on offenders and victims, the Case Administration System (CAS), is not connected to any GIS mapping technology, nor available at every police station, the task of describing or interpreting South Africa's spatial criminal activity is rendered impossible. Breetzke (2006) also cites authors who maintain that the culture of the police is not information technologically orientated and quotes Lochner and Zietsman (1998:71) who state that "one of the biggest problems regarding the implementation of GIS in policing is still the ignorance and negative attitudes amongst employees regarding the value of technology in decision-making". Breetzke (2006) also maintains that observations, commentaries and summaries of the crime scene are inadequately written as well as insufficiently captured on CAS which necessitates standardised procedures that guide the collection process. The same type of information should be collected in the same way. He cites authors who report that the importance of data capturing is often overlooked by the many members of police who fail to appreciate the benefits of crime statistics. There is a concern that if information of crime sites have been inaccurately recorded or are missing, such as unreported crimes that are not included in the series or included crimes that were actually not committed by the suspect, the geographical profile may be skewed (Labuschagne, 2003). For Breetzke (2006), minimal, sloppy and/or inaccurate information gathered by the SAPS includes information about the physical locations of crime sites which in turn affects the important task of geocoding, a method of translating street addresses into longitudinal and latitudinal coordinates. Within a crime context, he explains that geocoding is a necessary step if data is to be displayed spatially in a GIS. There are some challenges however. Data sourced from the police may give offenders' residences when they were arrested but not necessarily during their series (Canter & Youngs, 2010). Also, there are people in South Africa who reside in undeveloped areas or informal settlements that lack a physical address. There are also street offenders who may be homeless or so transient that they do not have any permanent or fixed anchor point. Some may base their activities out of a social activity location, rather than their homes (Rengert, 1996). Our street maps for informal settlements are not readily available plus the structure of these areas tends to be dynamic due to residents making changes. It is also difficult to geocode an address for a road that either does not exist or has not yet been linked to the SAPS' GIS (Cooper & Schmitz, 2002; Leggett, 2004). For Wilson et al. (1997), there is an important differentiation between urban and rural settings when examining crime scenes. According to Canter (2007), murder coverage is greater when in big cities or if the victim was a celebrity or if a child, female, attractive or where there are multiple victims or much violence was involved. In South Africa, perhaps the unknowns and rural areas do not afford such coverage or awareness. On a positive note, however, this may limit hundreds of irrelevant calls inundating the police. 7.2.2.3 Geoprofiling traveller serial murderers. Woodworth and Porter (1999) assert that geographic profiling is not currently useful for studying commuter or travelling murderers who constantly move around and have no home base. According to Labuschagne (2003), the theory that a serial offender's crimes occur near his residence or where he works has proven to be so for some of these South African cases, but he cites multiple examples where this has not been the case. According to him, because of socio-economic circumstances and our unemployment level, people desperate for employment are more prone to taking risks with strangers who are offering working opportunities. Hence, South African victims are easily lured out of their areas. Furthermore, a large segment of our populace make use of informal transport such as taxis to traverse extensive distances for their jobs (Labuschagne, 2003). Rossmo (1995b) acknowledges the limitations of geographical profiling in that it cannot analyse every kind of crime or offender. Like Dragnet, that requires that the offender's base must be within a region that can be defined by the crime locations (marauders), the Rigel model is incapable of pinpointing the home of a perpetrator that is located beyond the borders of his targeting area map. These models will not work locally where serial murderers are often commuters or travelling offenders. One local study confirms this limitation. To determine whether geographical profiling systems could be useful in South Africa, Schmitz (2004) profiled seven well-known local crime series where the anchor points of the offenders were known. The sample included the Wemmerpan, NASREC, Johannesburg Mine Dump, Norwood and Barberton serial murderers as well as the Rabie Ridge and Sasolburg serial rapists. He used Rigel Profiler as well as CrimeStat's Journey-to-Crime routines. Both systems were able to model the geographic profile of the serial offenders in South Africa to a greater and lesser degree, with Rigel being more consistent in calculating the peak profile than CrimeStat. Although Schmitz (2004) concluded that those particular local serial offenders also committed their crimes in patterned ways, he confirms that existing geographic profiling software has proven to be unsuccessful in locating the residences of South African serial offenders. Cooper and Schmitz (2002) have postulated that serial murderers in South Africa tend to act in wide-ranging activity spaces. Therefore, their crime locations will often be outside of or beyond the proposed 'circle' area that encompasses their homes. The geographical patterns are there, but the anchor point is often not there. Schmitz (2004) concluded that Rigel and CrimeStat can be applied to South African cases, but highlighted the importance of distinguishing cases that are not possible to profile, either because of crime site distribution or due to the lack of adequate information (for example, the Barberton serial murderer). 7.2.2.4 GIS efficacy. There has been very little research testing the efficacy of GIS in South Africa. For Paulsen (2004; 2007) who evaluated a range of geographical profiling methods, little of the research on geographic profiling has focused on critically assessing issues of effectiveness and accuracy. For him, this has created a void of unanswered questions about the technique, such as: is there an effective method for determining if a crime series can be profiled? For Turvey (2008), geographical profiling is based on nomothetic data and assumptions. Compatible with his general concern regarding this approach, he also cautions against using geographical profiling on its own and advocates for the careful discernment between theories and conclusions when applying this technique in the solving of cases. In Paulsen's (2007) analysis comparing the efficacy of the three main models, he concluded that Rigel was slightly better than the others, but critiqued all of the models' small samples and non-random case selection, as well as the fact that Rigel and Dragnet only consider the spatial behaviour of serial murderers. Rossmo (1995b) submits that the CGT model's validity is limited in its dependence upon the score that depicts the offender's home being greater than the scores of other points that are reflected within the targeting area. Furthermore, he recognises that the calculated inferences are based upon a small number of crime sites and are limited when one considers the breadth of random human behaviour. Although Schmitz (2004) acknowledges

the onerous task of understanding the science behind geographical profiling, he is adamant that the pragmatic assistance offered by the CGT model and its mapped display of crucial geographic areas is apparent as it helps to focus investigative resources more efficiently. Helms (1999) demonstrates that GIS technology, integrated with other information and techniques such as ecology's animal movement studies (Bair, 2000), can be a valuable assistant to the successful resolution of a crime series. Helms (1999:19) advocates for a "group of techniques which, taken together, may be used to provide a useful and powerful suite of tools in the kit of the successful Tactical Crime Analyst. Further study and development continues". Geographical profiling must recognise its place as one of the tools used in Criminal Investigative Analysis (G. Labuschagne, personal communication, 5 June, 2014). Using the models on their own will not give a geographic profile and could lead to erroneous interpretations (Paulsen, 2004; Schmitz, 2004). Therefore, the technique is more likely to yield positive results when combined with other tools in offender profiling. 7.2.3 Mapping criminal records. Canter (2007) recommends that local police should, as a standard procedure, map out residents within a certain proximity to the crime scenes that have related criminal records. He argues that it is likely that these perpetrators of such violent crimes have evolved their criminal careers and have had some history of prior offences. This necessitates having a complete, accurate and updated database from which to extract this information. Unfortunately, and as mentioned earlier, there are residents in South Africa who lack a physical address. Furthermore, and according to Labuschagne (G. Labuschagne, personal communication, 7 December, 2015), in South Africa this might face constitutional issues. He adds that currently there is not even the compulsory registration of sex offenders' residences. 7.2.4 Predictions from the consistency principle. In Canter's (1994) consistency principle, he reasons that the actions performed by the offender during his crime and under normal circumstances are complete reflections of one another, and that how the offender deals with his victims is how he deals with other people of significance to them. All of the offenders in this study stated that they had wives, fiancées or girlfriends at the time of committing their crimes, although not much was known about the nature of these relationships. Increased research into the legal interactions of local offenders with the people in their lives can explore this theory further and could ultimately highlight any possible warning signs in individuals who interact in particular ways. 7.2.5 Prevention is better than cure. Ultimately, as is the universal case, prevention is better than cure. For the benefit of victims and offenders alike, addressing the latent reasons for criminal behaviour as well as recognising the behaviours of victimisation-risk is first prize. According to the White Paper on Corrections (South African Department of Correctional Services, 2005), the country's revised and improved approach to correctional management, corrections must be recognised as a societal responsibility. It states that internationally, the purpose of imprisonment is defined as the protection of society against crime by not merely removing offenders from society, but also by attempting to rehabilitate them as far as possible. The White Paper presents ten strategies to attain these objectives of correction and rehabilitation, one of them being the promotion of healthy family relations. The important point is made that the degree of dysfunctionality at family and community institution levels has to be addressed if the rate of new convictions is to decrease. Considering the information that the offenders in this study shared regarding their early familial and societal experiences, this preventative focus is deemed to be extremely relevant. The absence of appropriate role models for the youth, substance abuse, immorality and gender/ sex inequality and beliefs that are in favour of male domination, all contribute towards the violent perpetration against women (South African Department of Correctional Services, 2005). In addition, the White Paper highlights the socio-political factors that have impacted the nature of South African crime: ? a system ill equipped to cope with the country's rapid political transition from apartheid to democracy and the accompanying disappointment that has contributed to the justification of crime; ? the country's violent history that has resulted in a culture that accepts violence as an option for conflict resolution; ? poverty, which together with various social, political and cultural factors, has contributed to the development of gangs and crime syndicates; ? a marginalised youth, which combined with the slow growth in the job market, has created a group of people at risk; ? the absence of services to crime victims, thereby ignoring the negative impact on individuals, families and communities; and ? the accessibility of firearms to citizens that has escalated the levels of violence associated with robbery and rape. Restoration thus aptly emphasises the important and active roles that families and community members play in the processes of justice. The significant increase of local offenders serving life sentences, such as serial murderers, further poses particular challenges to the Department of Correctional Services. Providing these individuals with daily services over such an extended period of time drains significant resources and yet, their inclination towards aggression means that they need to be kept active lest they threaten the security and order of their particular correctional centres (South African Department of Correctional Services, 2005). The White Paper on Corrections thus advocates for the continued analysis, understanding and monitoring of crime trends in South Africa, the factors which promote crime as well as the communities of origin of offenders. Equally important, is the drive to improve the quality of service delivery to victims of crime. Routine activity theory has been supported in its contention that lifestyle and certain risky behaviours increase the likelihood of being violently victimised (Gabor & Mata, 2004; Logan et al., 2006; Gatez, 2004; Gover, 2004; Gouvis, 2002). In addition, geographical space is becoming increasingly permeable due to our technological age of communication and information. Our mental images of other places are slowly changing and distances that isolated but buffered us in former times, are becoming less effective (Gould & White, 1986). This is directly impacting human behaviour and needs to be considered alongside any further research examining how serial murderers view their crime locations. It could be recommended that SAPS uses crime plotting in crime prevention activities more readily, thus helping detect emerging patterns and indicating a problem/hotspot area if the murders are believed to be the work of one offender. Thereafter a geoprofile can be of assistance in identifying possible suspects. Ultimately, to link studies with a broader conception of crime in South Africa can lead to better crime prevention strategies in South Africa. This thesis has established that geographical patterns are evident in our local serial murderers. The first piece of the mapping puzzle is in. There is a call now for additional research; for additional pieces to be added to the puzzle, since increasing our understanding of the spatial behaviours of South African offenders increases both our investigative and crime prevention efforts locally. Who can argue with that? "I changed so much in this place. So much. I could never get involved with a person before but what I've learned since I'm here..." (South African serial murderer on the impact of his incarceration) CHAPTER X REFERENCES Agnew, R. (1994). The techniques of neutralization and violence. Criminology, 32(4), 555-580. Ainsworth, P. (2002). Offender profiling and crime analysis. Devon: Willan Publishing. Akinsanmi, B. (2012). The optimal learning environment: Learning theories. Retrieved from http://www.designshare.com/index.php/articles/the-optimal- learning-environment-learning-theories/ Alison, L., Bennell, C., Mokros, A. & Ormerod, D. (2002). The personality paradox in offender profiling: A theoretical review of the processes involved in deriving background characteristics from crime scene actions. Psychology, Public Policy and Law, 8, 115-135. Alison, L.J. & Canter, D.V. (1999). Professional, legal and ethical issues in offender profiling. In D.V. Canter & L.J. Alison (Eds.), Profiling in policy and practice: Offender profiling series Vol 2 (pp. 21-54). Ashgate, UK: Aldershot. Alison, L., Goodwill, A., Almond, L., van den Heuvel, C. & Winter, J. (2010). Pragmatic solutions to offender profiling and behavioural investigative advice. Legal and Criminological Psychology, 15, 115-132. Alison, L., Smith, M.D., Eastman, O. & Rainbow, L. (2003). Toulmin's philosophy of argument and its relevance to offender profiling. Psychology, Crime & Law, 9(2), 173-183. Alison, L., Snook, B. & Stein, K. (2001). Unobtrusive measurement: Using police information for forensic research. Qualitative Research, 1, 241-254. Alison, L., West, A., & Goodwill, A. (2004). The academic and the practitioner: Pragmatists' views of offender profiling. Psychology, Public Policy and Law, 10, 71-101. American Psychiatric Association (2013). Diagnostic and statistical manual of mental disorders (5th ed.). Arlington: American Psychiatric Publishing. Arksey, H. & Knight, P. (1999). Interviewing for social scientists. London: Sage. Bair, S. (2000). Geographic information analysis: From GIS to GIA. Retrieved from http://www.iaca.net/Resources/Articles/gia.pdf Baker, R.R. (1989). Human navigation and magnetoreception. Manchester: Manchester University Press. Baker, D. & Donnelly, P.G. (1986). Neighborhood criminals and outsiders in two communities. Sociology and Social Research, 71(1), 59-65. Balme, G., Hunter, L. & Slotow, R. (2007). Feeding habitat selection by hunting leopards. Panthera Pardus in a woodland savanna: prey catchability versus abundance. Animal Behaviour, 74(3), 589- 598. Baron, R.A. & Byrne, D. (2000). Social psychology (9th ed.). Boston: Allyn and Bacon. Bartol, C. (1996). Police psychology: Then, now, and beyond. Criminal Justice and Behavior, 23, 70-89. Bartol, C.R. & Bartol, A.M.

(2008). Investigative Psychology. In A.M Bartol & C.R. Bartol (Eds.), Introduction to Forensic Psychology: Research and Application (pp. 79-111). New York: Sage. Bateman, A.L. & Salfati, C.G. (2007). An examination of behavioral consistency using individual behaviors or groups of behaviors in serial homicide. Behavioral Sciences and the Law, 25(4), 527- 544. Beauregard, E. & Field, J. (2008). Body disposal patterns of sexual murderers: Implications for offender profiling. Journal of Police and Criminal Psychology, 23, 81-89. Beauregard. E., Lussier, P. & Proulx, J. (2007a). Criminal propensity and criminal opportunity: An investigation of crime scene behaviors of sexual aggressors of women. In R.N. Kocsis (Ed.), Criminal profiling: International theory, research, and practice (pp. 89-113). Totowa, NJ: Humana Press. Beauregard, E., Proulx, J., Rossmo, K., Leclerc, B. & Allaire, J-F. (2007b). Script analysis of the hunting process of serial sex offenders. Criminal Justice Behavior, 34, 1069-1084. Bennell, C. & Canter, D.V. (2002). Linking commercial burglaries by modus operandi: Tests using regression and ROC analysis. Science and Justice, 42, 153-164. Bennell, C., Jones, N.J., Taylor, P.J. & Snook, B. (2006). Validities and abilities in criminal profiling: A critique of the studies conducted by Richard Kocsis and his colleagues. International Journal of Offender Therapy and Comparative Criminology, 50(3), 344-360. Bennett, A.T.D. (1996). Do animals have cognitive maps? The Journal of Experimental Biology, 199(1), 219-224. Blackburn, R. (1998). Psychopathy and personality disorder: Implications of interpersonal theory. In D.J. Cooke, A.E. Forth & R.D. Hare (Eds.), Psychopathy: Theory, research and implications for society (pp. 269-301). Amsterdam: Kluwer. Blades, M. (1990). The reliability of data collected from sketch maps. Journal of Environmental Psychology, 10(4), 327-339. Blaut, J.M. (1997). The mapping abilities of young children. Annals of the Association of American Geographers, 87(1), 152-158. Boulding, K. (1956). The image: Knowledge in life and society. Michigan: University of Michigan Press. Brantingham, P.L. & Brantingham P. J. (1981). Notes on the geometry of crime. In P.J. Brantingham, & P.L. Brantingham (Eds.), Environmental criminology (pp. 27-54). Beverley Hills: Sage. Brantingham, P.J. & Brantingham, P.L. (1984). Patterns in crime. New York: Macmillan. Brantingham, P.L. & Brantingham P.J. (1993). Environment, routine and situation: Toward a pattern theory of crime. In R.V. Clarke & M. Felson (Eds.), Routine activity and rational choice: Advances in criminological theory (pp. 259-290). New Jersey: Transaction Publishers. Brantingham, P.L. & Brantingham, P.J. (1995). Criminality of place: Crime generators and crime attractors. European Journal of Criminal Policy and Research, 3, 5-26. Breetzke, G.D. (2006). Geographical information systems (GIS) and policing in South Africa: A review. Policing: An International Journal of Police Strategies & Management, 29(4), 723-740. Brehm, S.S. & Brehm, J.W. (1981). Psychological reactance: A theory of freedom and control. New York: Academic Press. Brennan, J.F. (1998). History and systems of psychology (5th ed.). New Jersey: Prentice-Hall. Brooks, P., Devine, M., Green, T., Hart, B. & Moor, M (1987). Serial murder: A criminal justice response. Police Chief, 54(6), 40-5. Bryden, B. (2005). A Game ranger remembers. Jeppestown: Jonathan Ball Publishers. Burgess, A.G., Burgess A.W., Douglas, J. & Ressler, R. (1992). Crime classification manual. New York: Lexington Books. Burrough, P.A. (1986). Principles of geographic information systems for land resource assessment. Oxford: Clarendon. Bursik, R., Grasmick, H. & Chamlin, M. (1990). The effect of longitudinal arrest patterns on the development of robbery trends at the neighborhood level. Criminology, 28, 431-450. Burton, P.S. (2012). A graphical model of routine activity theory. Retrieved from http://commons.wikimedia.org/wiki/File:Routine_activity_theory.png Canter, D. (1975). An introduction to environmental psychology. In D. Canter (Ed.), Environmental interaction (pp. 1-20). New York: International University Press. Canter, D.V. (1977). The Psychology of Place. Hampshire: BAS Printers Limited. Canter, D. V. (1989). Offender profiles. The Psychologist, 2, 12-16. Canter, D.V. (1994). Criminal shadows: Inside the mind of the serial killer. London: Harper Collins. Canter, D.V. (1995). The psychology of offender profiling. In R. Bull & D. Carson (Eds.), Handbook of psychology in legal contexts (pp. 343-355). Chichester: Wiley. Canter, D.V. (2000a). Offender profiling and criminal differentiation. Legal and Criminological Psychology, 5, 23-46. Canter, D.V. (2000b). Criminal shadows: The inner narratives of evil. London: Harper Collins. Canter, D.V. (2004a). Geographical profiling of criminals. Medico-legal Journal, 72, 53-66. Canter, D.V. (2004b). Offender profiling and investigative psychology. Journal of Investigative Psychology and Offender Profiling, 1, 1- 15. Canter, D.V. (2005). Confusing operational predicaments and cognitive explorations: Comments on Rossmo and Snook et al. Applied Cognitive Psychology, 19(5), 663-668. Canter, D.V. (2007). Mapping murder: The secrets of geographical profiling. London: Virgin Books. Canter, D.V. (2008). Geographical profiling of criminals. In D.V. Canter, & D. Youngs (Eds.), Principles of geographical offender profiling (pp. 197-219). Ashgate: Aldershot. Canter, D.V. (2009). Developments in geographical offender profiling: Commentary on Bayesian journey-to-crime modelling. Journal of Investigative Psychology and Offender Profiling, 6(3), 161-166. Canter, D.V. (2012). Investigative psychology origins. Retrieved from http://www.davidcanter.com/investigative-psychology/origins/ Canter, D.V. (2014a). International academy for investigative psychology. Retrieved from http://www.ia-ip.org Canter, D.V. (2014b). Dragnet. Retrieved from http:www.i-psy.com/publications/publications_dragnet.php Canter, D.V., Alison, L.J., Alison, E. & Wentink, N. (2004). The organized/disorganized typology of serial murder: Myth or model? Psychology, Public Policy, and Law, 10(3), 293-320. Canter, D.V., Bennell, C., Alison, L.J. & Reddy, S. (2003). Differentiating sex offences: A behaviourally based thematic classification of stranger rapes. Behavioural Sciences and the Law, 21, 157-174. Canter, D.V. & Gregory, A. (1994). Identifying the residential location of serial rapists. Journal of the Forensic Science Society, 34, 169- 175. Canter, D.V. & Hammond, L. (2008). A comparison of the efficacy of different decay functions in geographical profiling for a sample of US serial killers. In D.V. Canter & D. Youngs (Eds.), Applications of geographical offender profiling (pp. 225-239). Ashgate: Aldershot. Canter, D.V. & Heritage, R. (1990). A multivariate model of sexual offence behaviour: Developments in 'offender profiling' 1. Journal of Forensic Psychiatry, 1(2), 185-212. Canter, D.V. & Hodge, S. (2008). Criminals' mental maps. In D.V. Canter & D. Youngs (Eds.), Principles of geographical offender profiling (pp. 249-258). Ashgate: Aldershot. Canter, D. & Kenny, C. (1975). The spatial environment. In D. Canter & P. Stringer (Eds.), Environmental interaction (pp. 127-163). London: Surrey University Press. Canter, D.V. & Kirby, S. (1995). Prior convictions of child molesters. Science and Justice, 35, 73-78. Canter, D.V. & Larkin, P. (1993). The environmental range of serial rapists. Journal of Environmental Psychology, 13, 63-69. Canter, D.V.; Reddy, S.; Alison, L. & Bennell, C. (2001). Levels and variations of violation in rape. In D.V. Canter & L.J. Alison (Eds.), Profiling rape and murder: Offender profiling series Vol 5 (pp. 1- 25). Ashgate, UK: Aldershot. Canter, D. & Shalev, K. (2008). Putting crime in its place: Psychological process in crime site selection. In D.V. Canter & D. Youngs (Eds.), Principles of geographical offender profiling (pp. 259- 269). Ashgate, UK: Aldershot. Canter, D.V. & Stringer, P. (1975). Environmental interaction: Psychological approaches to our physical surroundings. London: Surrey University Press. Canter, D.V. & Wentink, N. (2004). An empirical test of the Holmes and Holmes serial murder typology. Criminal Justice and Behavior, 31(4), 489-515. Canter, D.V. & Youngs, D. (2003).Beyond offender profiling: The need for an investigative psychology. In R. Bull & D. Carson (Eds.), Handbook of psychology in legal contexts (pp. 171-205). Chichester: John Wiley & Sons. Canter, D.V. & Youngs, D. (2008a). Geographical offender profiling: Origins and principles. In D.V. Canter, & D. Youngs (Eds.), Principles of geographical offender profiling (pp. 1-20). Ashgate: Aldershot. Canter, D.V. & Youngs, D. (2008b). Geographical offender profiling: Applications and opportunities. In D.V. Canter & D. Youngs (Eds.), Applications of geographical offender profiling (pp. 1-24). Ashgate: Aldershot. Canter, D.V. & Youngs, D. (2010). Investigative psychology: Offender profiling and the analysis of criminal action. West Sussex: Wiley. Cater, J.G. (1997). The social construction of the serial killer. Gazette, A Royal Canadian Mounted Police Publication, 59(1), 2-21. CGPATC. (2014). Geographic profiling analyst training and certification. Retrieved from http://www.cgpatc.org Chaplin, J.P. & Krawiec, T.S. (1970). Systems & theories of psychology (2nd ed). London: Holt, Rinehart & Winston. Chesen, J. (2008). The 'CSI Effect'—there's no such thing as questions, just hidden answers. Retrieved from http://www.ncstl.org/evident/july08 researchfocus Coffey, T. and Canter, D.V. (2000). Development and test of behaviourally based suspect prioritisation system. In D.V. Canter & L.J. Alison (Eds.), Profiling rape and murder (Offender profiling series, Vol V). Dartmouth, UK: Aldershot. Cohen, L.E. & Felson, M. (1979). Social change and crime rate trends: A routine activity approach. American Sociological Review, 44, 588-608. Cohen, L.E. & Felson, M.K. (2010). Routine activity theory. In F.T. Cullen. & P. Wilcox, (Eds.), Encyclopedia of criminological theory (pp. 1-15). New York: Sage. Colaizzi, P.F. (1978). Psychological research as the phenomenologist views it. In R.S. Vallé & M. King (Eds.), Existential phenomenological alternatives for psychology (pp. 48-71). New York: Oxford University Press. Cole L.E. (1953). Human behavior: Psychology as a bio-social science. New York: World Book. Cooper, A.K. & Schmitz, P.M.U. (2002, January). Some

examples of tactical crime mapping in South Africa. Paper presented at the Crime Mapping and Community Policing International Seminar, Belo Horizonte, Brazil. Copson, G. (1995). Coals to Newcastle? A study of offender profiling. London: Police Research Group, Home Office. Copson, G., Badcock, R., Boon, J. & Britton, P. (1997). Editorial: Articulating a systematic approach to clinical crime profiling. Criminal Behaviour and Mental Health, 7, 13-17. Cromwell, P.F., Olson, J.N. & Avary, D.W. (1991). Breaking and entering: An ethnographic analysis of burglary. California: Sage. Davis, J.A. (1999). Criminal personality profiling and crime scene assessment: A contemporary investigative tool to assist law enforcement public safety. Journal of Contemporary Criminal Justice, 15, 291. Debord, G. (1955). Introduction to a critique of urban geography. Retrieved from http://library.nothingness.org/articles/SI/en/display/2 Devery, C. (2010). Criminal profiling and criminal investigation. Journal of Contemporary Criminal Justice, 26, 393. Dietz, P.E. (1986). Mass, serial and sensational homicides. The Bulletin of the New York Academy of Medicine, 62, 477-491. Dollard, J. and Miller, N. (1945). Social learning and imitation. London: Routledge. Dollard, J. and Miller, N. (1950). Personality and psychotherapy: An analysis in terms of learning, thinking and culture. New York: McGraw-Hill. Doob, A. & Cesaroni, C. (2004). Responding to youth crime in Canada. Toronto: University of Toronto Press. Douglas, J.E., Burgess, A.W., Burgess, A.G. & Ressler, R.K. (1992). Crime classification manual: A standard system for investigating and classifying violent crime. New York: Simon & Schuster. Douglas, J.E. & Olshaker, M. (1995). Mind hunter: Inside the FBI's elite serial crime unit. New York: Mindhunters. Douglas, J., Ressler, R., Burgess, A. & Hartman, C. (1986). Criminal profiling from crime scene analysis. Behavioral Sciences and the Law, 4(4), 401-421. Dowden, C.; Bennell, C. & Bloomfield, S. (2007). Advances in offender profiling: A systematic review of the profiling literature published over the past three decades. Journal of Police and Criminal Psychology, 22, 44-56. Downs, M. & Stea, D. (1973). Cognitive maps and spatial behavior: Process and product. In R.M. Downs & D. Stea (Eds.), Image and environment: Cognitive mapping and spatial behavior (pp. 8- 26). Chicago: Aldine. Eastman, J.R. (2001). Guide to GIS and image processing. Worcester: Clark University. Ebisike, N. (2008). Offender profiling in the courtroom: The use and abuse of expert witness testimony. Connecticut: Greenwood Publishing Group. Eck, J.E. (1994). Drug markets and drug places: A case-control study of the spatial structure of illicit drug dealing. Unpublished PhD thesis, University of Maryland, College Park, U.S. Eck, J.E. (1995). Examining routine activity theory: A review of two books. Justice Quarterly, 12(4), 783-797. Egger, S.A. (1984). Working definition of serial murder and the reduction of linkage blindness. Journal of Police Science and Administration, 12(3), 348-357. Egger, S.A. (1997). The killers among us: An examination of serial murder and its investigation. New Jersey: Prentice Hall. Egger, S.A. (1999). Psychological profiling: Past, present, and future. Journal of Contemporary Criminal Justice, 15, 242. Erasmus, J.C. & Mans, G.G. (2005). Churches as service providers for victims of sexual and / or violent crimes. A case study from the Paarl community. Acta Criminologica, 18(1), 140-163. Farbstein, J. & Kantrowitz, M. (1978). People in places. New Jersey: Prentice-Hall. Felson, M. (1994). Crime and everyday life: Insight and implications for society. Thousand Oaks, CA: Pine Forge Press. Felson, M. (2006, February). Crime's everyday routines. Paper presented at the Midlands Centre for Criminology and the Criminal Justice, Loughborough University. Felson, M. & Cohen, L. (1980). Social change and crime rate trends: A routine activity approach. Human Ecology and Crime, 8(4). Fox, J.A. & Levin, J. (1994). Overkill: Mass murder and serial killing exposed. Plenum Press, New York. Freckelton, I. (2010). Investigative psychology: Offender profiling and the analysis of criminal action, by David Canter and Donna Youngs. Psychiatry, Psychology and Law, 17(2), 328-331. Gabor, T. & Gottheil, E. (2008). Offender characteristics and spatial mobility: An empirical study and some policy implications. In D.V. Canter & D. Youngs (Eds.), Applications of Geographical Offender Profiling (pp. 41-55). Ashgate: Aldershot. Gabor, T. & Mata, F. (2004). Victimization and repeat victimization over the life span: A predictive study and implications for policy. International Review of Victimology, 10(3), 193-221. Gatez, S. (2004). Safe streets for whom? Homeless youth, social exclusion, and criminal victimization. Canadian Journal of Criminology and Criminal Justice, 46(4), 423-455. Geberth, V. (1996). Practical homicide investigation (2nd ed.). Florida: CRC Press. Geiselman, R.E., Fisher, R.P., MacKinnon, D.P. & Holland, H.L. (1985). Eyewitness memory enhancement in the police interview: Cognitive retrieval mnemonics versus hypnosis. Journal of Applied Psychology, 70(2), 401-412. Geldenhuys, B.B. (2001). Patterns of crime in Hatfield. Unpublished Master's thesis, University of Pretoria, Pretoria, South Africa. George, J.A. (2008). Offender profiling and expert testimony: Scientifically valid or glorified results? Vanderbilt Law Review, 61(1), 221-260. Godwin, M. (2001). Criminal psychology and forensic technology: A collaborative approach to effective profiling. New York: CRC. Godwin, M. (2012). Brief discussion on inductive/deductive profiling. Retrieved from http://www.drmauricegodwin.com/inductiveprofiling.html Godwin, M. & Canter D.V. (1997). Encounter and death: The spatial behavior of US serial killers. Policing: An International Journal of Police Strategy and Management, 20, 24-38. Goodwill, A.M. & Alison L.J. (2007) When is profiling possible? Offense planning and aggression as moderators in predicting offender age from victim age in stranger rape. Behavioral Sciences & the Law, 25, 823-840. Goodwin, M. (1998). Reliability, validity and utility of extant serial murder classifications. The Criminologist, 22, 194-210. Gould, P. & White, R. (1986). Mental Maps. Massachusetts: Allen & Unwin Inc. Gouvis, R.C. (2002). Schools as generators of crime: Routine activities and the sociology of place. Unpublished PhD thesis, American University, Washington D.C., U.S. Gover, A.R. (2004). Risky lifestyles and dating violence: A theoretical test of violent victimization. Journal of Criminal Justice, 32(2), 171-180. Gray, D. E. (2009). Doing research in the real world (2nd ed.). London: Sage. Gregory, N. (2005). Offender profiling: a review of the literature. The British Journal of Forensic Practice; 7(3), 29-34. Grubin, D., Kelly, P. & Brundson, C. (2001). Linking serious sexual assaults through behaviour. Retrieved from http://www.academia.edu/536751/Linking_serious_sexual_assa ults_through_behaviour Guthrie, E.R. (1935). The psychology of learning. New York: Harper. Häkkänen, H. (2008). A Study of offense patterns and psychopathological characteristics among recidivistic Finnish homicide offenders. In R.N. Kocsis (Ed.), Serial murder and the psychology of violent crimes (pp. 51-62). New Jersey: Humana Press. Häkkänen, H., Hurme, K. & Liukkonen, M. (2008). Distance patterns and disposal sites in Finnish wooded area homicides. Unpublished manuscript submitted for publication. Hale, R.L. (1993). The application of learning theory to serial murder: You too can learn to be a serial killer. American Journal of Criminal Justice, 17(2), 37-45. Hall, A. (2013). Captive: the story of the Cleveland abductions. London: Penguin. Hanfland, K.A., Keppel, R.D. & Weis, J.G. (1997). Case management for missing children homicide investigation. Olympia, WA: Attorney General of Washington. Harding, J.W., Wacker, D.P., Berg, W.K., Barretto, A., Winborn, L. & Gardner, A. (2001). Analysis of response-class hierarchies with attention-maintained problem behaviors. Journal of Applied Behavior Analysis, 34(1), 61-64. Hare, R.D. (1999). Without conscience: The disturbing world of the psychopaths among us. New York: Guilford. Harré, R. & Secord, P.F. (1972). The explanation of social behaviour. London: Blackwell. Harries, K. (1999). Mapping crime: Principle and practice. Retrieved from https://www.ncjrs.gov/pdffiles1/nij/178919.pdf Harris, T. (1986). The silence of the lambs. New York: Heineman. Harris, T. (1999). Hannibal. New York: Heineman. Haynes, R.M. (1980). Geographical images and mental maps. Hong Kong: Macmillan Education Ltd. Hazelwood, R.R. & Warren, J.I. (1999). The sexually violent offender: Impulsive or ritualistic. Aggression and Violent Behavior, 5, 267- 279. Hazelwood, R.R. & Warren, J.I. (2003). Linkage analysis: Modus operandi (MO), ritual and signature in serial sexual crime. Aggression and Violent Behavior, 8, 587-598. Hellpach, W. (1935). Geopsyche. Leipzig: Verlag von Wilhelm Engelmann. Helms, D. (1999). The use of dynamic spatio-temporal analytical techniques to resolve emergent crime series. Retrieved from http://www.iaca.net/Resources/Articles/dynamic.pdf Hesselink-Louw, A.E. & Joubert, S. (2003). Profiling as a significant outcome of assessment - the criminologist's point of view. Acta Criminologica, 16 (5), 99-110. Hickey, E.W. (2002). Serial murderers and their victims (3rd ed.). California: Wadsworth. Hicks, S.J. & Sales, B.D. (2006). Criminal profiling: Developing an effective science and practice. Washington, DC: American Psychological Association. Hodgskiss, B. (2004). Lessons from serial murder in South Africa. Journal of Investigative Psychology and Offender Profiling, 1, 67-94. Holmes R.M. & De Burger, J. (1988). Serial murder: Studies in crime law and justice. Newbury Park, CA: Sage. Holmes R.M. & Holmes, S.T. (1998). Serial murder. Thousand Oaks, CA: Sage. Holmes R.M. & Holmes, S.T. (2002). Profiling violent crime: An investigative tool (3rd ed.). California: Sage. Homant, R.J. & Kennedy, D.B. (1998). Psychological aspects of crime scene profiling. Criminal Justice and Behavior, 25, 319-343. Horning, A.M., Salfati, C.G., & Labuschagne, G.N. (2015). South African serial homicide: A victim focused behavioral typology. Journal of Investigative Psychology and Offender Profiling, 12, 44-68. Hosken, G.(2012). Serial rape, murder 'on the back burner'.

Retrieved from http://m.timeslive.co.za/thetimes/?articleId=6938906 Hull, C.L. (1943). Principles of behaviour. New York: Appleton Century Croft. Hull, C.L. (1952). A behavior system: An introduction to behavior theory concerning the individual organism. Connecticut: Yale University Press. Jackson, J.L., Van Koppen, P.J., & Herbrink, C M. (1993). Does the service meet the needs? An evaluation of consumer satisfaction with specific profile analysis and investigative advice as offered by the scientific research advisory unit of the National Criminal Intelligence Division (NISCALE Report No. NSCR 93-05). The Netherlands: NISCALE. James, W. (1890). The principles of psychology. Retrieved from https://archive.org/details/theprinciplesofp01jameuoft Jenkins, P. (1994). Using murder: The social construction of serial homicide. New York: Aldine de Gruyter. Kaplan, S. (1973). Cognitive maps in perception and thought. In R. M. Downs & D. Stea (Eds.), Image and environment (pp. 63-78). Chicago: Aldine. Kazdin, A. (2001). Behaviour modification in applied settings (6th ed.). Belmont: Wadsworth/Thomson Learning. Kennedy, L.W. & Forde, D.R. (1990). Routine activities and crime: An analysis of victimization in Canada. Criminology, 28(1), 137-152. Keppel, R.D. (1995). Signature murders: A report of several related cases. Journal of Forensic Sciences, 40, 658-662. Keppel, R.D. (1997). Signature killers. New York: Pocket Books. Kind, S.S. (1987). Navigational ideas and the Yorkshire Ripper investigation. Journal of Navigation, 40(3), 385-393. Kind, S.S. (2008). Spatial patterns in behaviour: Navigational ideas and the Yorkshire Ripper investigation. In D.V. Canter & D. Youngs (Eds.), Principles of geographical offender profiling (pp. 21-32). Ashgate: Aldershot. Knight, Z.G. (2006). Some thoughts on the psychological roots of the behavior of serial killers as narcissists: An object relations perspective. Social Behavior and Personality, 34(10), 1189- 1206. Knight, Z.G. (2007). Sexually motivated serial killers and the psychology of aggression and 'evil' within a contemporary psychoanalytical perspective. Journal of Sexual Aggression, 13(1), 21-35. Kocsis, R.N. (1999). An introduction to psychological profiling and an empirical assessment of its accuracy in assisting violent crime investigations. Retrieved from http://www.aic.gov.au/events/seminars/1999/kocsis.html Kocsis, R.N. (2003a). Criminal psychological profiling: Validities and abilities. International Journal of Offender Therapy and Comparative Criminology, 47, 126-144. Kocsis, R.N. (2003b). An empirical assessment of content in criminal psychological profiles. International Journal of Offender Therapy and Comparative Criminology, 47(1), 37-46. Kocsis, R.N. (2006). Validities and abilities in criminal profiling The dilemma for David Canter's investigative psychology. International Journal of Offender Therapy and Comparative Criminology, 50(4), 458-477. Kocsis, R.N., Cooksey, R.W. & Irwin, H.J. (2002). Psychological profiling of sexual murders: An empirical model. International Journal of Offender Therapy and Comparative Criminology, 46(5), 532-554. Kocsis, R.N. & Hayes, A.F. (2004). Believing is seeing? Investigating the perceived accuracy of criminal psychological profiles. International Journal of Offender Therapy and Comparative Criminology, 48(2), 149-160. Kocsis, R.N. & Heller, G.Z. (2004). Believing is seeing II: Beliefs and perceptions of criminal psychological profiles. International Journal of Offender Therapy and Comparative Criminology, 48(3), 313-329. Kocsis, R.N., Heller, G.Z. & Try. A.C. (2003). Visual versus narrative case material: The impact on criminal psychological profiling. International Journal of Offender Therapy and Comparative Criminology, 47(6), 664-676. Kocsis, R.N., Irwin, H.J. & Hayes, A.F. (1998). Organised and disorganised criminal behavior syndromes in arsonists: A validation study of a psychological profiling concept. Psychiatry, Psychology and Law, 5, 117-131. Kocsis, R.N., Irwin, H.J., Hayes, A.F. & Nunn, R. (2000). Expertise in psychological profiling: A comparative assessment. Journal of Interpersonal Violence, 15, 311-331. Kocsis, R.N. & Middledorp, J. (2004). Believing is seeing III: Perceptions of content in criminal psychological profiles. International Journal of Offender Therapy and Comparative Criminology, 48(4), 477-494. Kocsis, R.N., Middledorp, J. & Try, A.C. (2005). Cognitive processes in criminal profile construction: A preliminary study. International Journal of Offender Therapy and Comparative Criminology, 49(6), 662-681. Kocsis, R.N. & Palermo, G.B. (2005). Contemporary problems in criminal profiling, in R.N. Kocsis (Ed.), Criminal profiling: International theory, research, and practice (pp. 327-345). New Jersey: Humana Press. Kraemer, G.W, Lord, W.D. & Heilbrun, K. (2004). Comparing single and serial homicide offenses. Behavioral Sciences & the Law, 22(3), 325-343. Kulbarsh, P. (2011). Hallucinations: The ultimate betrayal of the mind. Retrieved from http://www.officer.com/article/10426693/hallucinations-the- ultimate-betrayal-of-the-mind/ Labuschagne, G.N. (2003). Offender profiling in South Africa: Its definition and context. Acta Criminologica, 16(4), 67-74. Labuschagne, G.N. (2004). Features and investigative implications of muti murder in South Africa. Journal of Investigative Psychology and Offender Profiling, 1(3), 191-206. Labuschagne, G.N. (2006a). The use of a linkage analysis as evidence in the conviction of the Newcastle serial murderer, South Africa. Journal of Investigative Psychology and Offender Profiling, 3(3), 183-191. Labuschagne, G. (2006b). Pre-sentencing report: State vs Dube, Mthandeni Sipho Matthews Hlangathi (Case No 352/04). Pretoria, South Africa: Investigative Psychology Section, SAPS. Labuschagne, G.N. (2012a). The use of a linkage analysis as an investigative tool and evidential material in serial offenses. In K. Borgeson & K. Kuehnle (Eds.), Serial offenders: Theory and practice (pp. 188-215). Massachusetts: Jones & Bartlett Learning. Labuschagne, G.N. (2012b). Muti murder. In K. Borgeson & K. Kuehnle (Eds.), Serial offenders: Theory and practice (pp. 145-161). Massachusetts: Jones & Bartlett Learning. Labuschagne, G.N. & Salfati, C.G. (2015). An examination of serial homicide in South Africa: The practice to research link. Journal of Investigative Psychology and Offender Profiling, 12, 4-17. Labuschagne, G.N. & Theron, A. (2008). Foreign object insertion in sexual homicide: Towards an offender profile. Acta Criminologica, Special Conference Edition (2), 117-128. Ladouceur, C. & Biron, L. (1993). Ecouler la merchandise vole, une approche rationelle? Canadian Journal of Criminology, 35(2), 169–182. Langer, E. & Rodin, J. (1975). The effects of choice and enhanced personal responsibility for the aged: a field experiment in an institutional setting. Journal of Personality and Social Psychology, 34(2), 191-198. Leggett, T. (2004). The state of crime and policing. In J. Daniel, R. Southall & J. Lutchman (Eds.), State of the Nation: South Africa 2004-05 (pp. 44-176). Pretoria: HSRC Press. Lersch, K.M. (2007). Space, time and crime. North Carolina: Carolina Academic Press. Levin, J. & Fox, J.A. (2008). Normalcy in behavioral characteristics of the sadistic serial killer. In R.N. Kocsis (Ed.), Serial murder and the psychology of violent crimes (pp. 3-14). New Jersey: Humana Press. Levine, N. (2000). CrimeStat: A spatial statistics program for the analysis of crime incident locations. Crime Mapping News, 2(1), 8-9. Levine, N. (2002). CrimeStat II: A spatial statistics program for the analysis of crime incident locations. Houston, TX: Ned Levine & Associates / Washington, DC: National Institute of Justice. Levine, N. (2009). Introduction to the special issue on Bayesian journey to crime modeling. Journal of Investigative Psychology and Offender Profiling, 6(3), 167-185. Levine, N. (2010). CrimeStat III: A spatial statistics program for the analysis of crime incident locations (version 3.3). Houston, TX: Ned Levine & Associates / Washington, DC: National Institute of Justice. Levine, N. (2013). CrimeStat IV: A spatial statistics program for the analysis of crime incident locations (version 4.0). Houston, TX: Ned Levine & Associates / Washington, DC: National Institute of Justice. Lewin, K. (1951). Field theory in social science: Selected theoretical papers. New York: Harper & Row. Lieving, G.A., Hagopian, L.P., Long, E.S. & O'Connor, J. (2004). Response-class hierarchies and resurgence of severe problem behavior. The Psychological Record, 54(4), 621-634. Lochner, F.C. & Zietsman, H.L. (1998). Using geographical information systems (GIS) for policing in South Africa: A case study in Paarl. South African Geographical Journal, 80, 60-72. Logan, T., Walker, R., Jordan, C.E. & Leukefeld, C.G. (2006). Lifestyle factors. Washington: American Psychological Association. Lowenthal, D. (Ed.). (1969). Environment perception and behaviour. Illinois: University of Chicago. Lundrigan, S. & Canter, D.V. (2001a). A multivariate analysis of serial murderers' disposal site location choice. Journal of Environmental Psychology, 21, 423-432. Lundrigan, S. & Canter, D.V. (2001b). Spatial patterns of serial murder: An analysis of disposal site location choice. Behavioral Sciences & the Law, 19, 595-610. Lynch, K. (1960). The image of the city. Cambridge: M.I.T. Press. Magee, S. & Ellis, J. (2000). Extinction effects during the assessment of multiple problem behaviors. Journal of Applied Behavior Analysis, 33, 313-316. Mair, K. (1995). Can a profile prove a sex offender guilty? Expert Evidence, 3, 139. Mare, E.C. (2011). Book report – "Interpretative phenomenological analysis: theory, method and research" KA-719 ARM – Transformative phenomenology. Retrieved from http://www.villagedesign.org/vdi_writings/Phenomen_Analysis.p df Meaney, R. (2004). Commuters and marauders: An examination of the spatial behaviour of serial criminals. Australia: Journal of Investigative Psychology and Offender Profiling, 1(2), 121-137. Miethe, T.D. & Meier, R.F. (1990). Opportunity, choice, and criminal victimization: A test of a theoretical model. Journal of Research in Crime and Delinquency, 27, 243-266. Miles, M.B. & Huberman, M. (1994). Qualitative data analysis (2nd ed.). California: Sage. Milne, R. & Bull, R. (1999). Investigative interviewing: Psychology and practice.

Chichester: Wiley. Miltenberger, R.G. (2003). Behaviour modification: Principles and procedures (3rd ed.) California: Wadsworth/Thomson Learning. Mischel, W. & Peake, P.K. (1982). Beyond déja vu in the search for cross-situational consistency. Psychological Review, 89, 730- 755. Mizutani, F. & Jewell, P.A. (2008).Home-range and movements of leopards (panther pardus) on a livestock ranch in Kenya. In D.V. Canter & D. Youngs (Eds.), Principles of geographical offender profiling (pp. 41-80). Ashgate: Aldershot. Mokros, A. & Alison, L.J. (2002). Is offender profiling possible? Testing the predicted homology of crime scene actions and background characteristics in a sample of rapists. Legal and Criminological Psychology, 7(1), 25-43. Morton, R.J. & Hilts, M.A. (2005). Serial murder: Multi-disciplinary perspectives for investigators. Retrieved from http://www.fbi.gov/stats-services/publications/serial- murder/serial-murder-1#two Mowrer, O.H. (1960). Learning theory and behavior. New York: Wiley. Mullen, P.E. (1997). Assessing risk of interpersonal violence in the mentally ill. Advances in Psychiatric Treatment, 3, 166-173. Muller, D.A (2000). Criminal profiling: Real science or just wishful thinking. Homicide Studies, 4(3), 234-264. Mustaine, E.E. & Tewksbury, R. (1997). Obstacles in the assessment of routine activity theory. Social Pathology, 3, 102-120. Nel, Z.J. & Nel, J.B.S. (1993). Ontwikkelingsnavorsing. Johannesburg: Consulto. Nethery, K. (2004). Non-familial abductions that end in homicide: An analysis of the distance patterns and disposal sites. Unpublished Master's thesis, Simon Fraser University, British Columbia, Canada. Newman, O. (1996). Creating defensible space. Department of Housing & Urban Development (HUD): Washington, U.S. Norris, J. (1990). Serial Killers. London: Arrow. Oppenheim, A.N. (1992). Questionnaire design, interviewing and attitude measurement (2nd ed.). London: Pinter. Parker, Z. & Dawes, A. (2003). Child sexual abuse in Atlantis. Cape Town, South Africa: University of Cape Town Children's Institute. Paulsen, D.J. (2004, March). Geographic profiling: Hype or hope? – Preliminary results into the accuracy of geographic profiling software. Paper presented at the UK Crime Mapping Conference, London, UK. Paulsen, D. (2007). Improving geographic profiling through commuter/marauder prediction. Police Practice and Research, 8(4), 347-357. Pavlov, I. (1927). Conditioned reflexes. London: Oxford University Press. Piaget, J. (1973). Main trends in psychology. London: George Allen & Unwin. Pinizzotto, A.J. (1984). Forensic psychology: Criminal personality profiling. Journal of Police Science and Administration, 12(1), 32-39. Pinizzotto, A.J. & Finkel, N.J. (1990). Criminal personality profiling: An outcome and process study. Law and Human Behavior, 14, 215- 233. Pistorius, M. (2000). Catch me a killer. Johannesburg: Penguin. Pistorius, M. (2002). Strangers on the street. Johannesburg: Penguin. Pistorius, M. (2005). Profiling serial killers. Johannesburg: Penguin. Plummer, K. (1995). Life story research. In J.A. Smith, R. Harré & L. Van Langenhove (Eds.), Rethinking methods in psychology (pp. 50-63). London: Sage. Pratt, D. (1980). Curriculum design and development. New York: Harcourt Brace Jovanovich. Redpath, J. (2001). The bigger picture: the gang landscape in the Western Cape. Indicator South Africa, 18(1), 34-40. Rengert, G.F. (1991, November). The spatial clustering of residential burglaries about anchor points of routine activities. Paper presented at the meeting of the American Society of Criminology, San Francisco, CA. Rengert, G.F. (1996). The Geography of illegal drugs. Boulder, CO: Westview Press. Rengert, G.F., Piquero, A.R. & Jones, P.R. (2008). Distance decay re- examined. In D.V. Canter & D. Youngs (Eds.), Principles of geographical offender profiling (pp. 177-193). Ashgate: Aldershot. Ressler, R.K., Burgess, A., & Douglas, J. (1988). Sexual homicide: Patterns and motives. Massachusetts: Lexington. Ressler, R.K., Burgess, A.W., Hartman, C.R., Douglas, J.E. & McCormack, C.R. (1986). Murderers who rape and mutilate. Journal of Interpersonal Violence, 1(3), 273-287. Ressler, R. & Shachtman, T. (1992). Whoever fights monsters. New York: St. Martin's. Retief, H. (2011). Byleveld: Dossier of a serial sleuth. Cape Town: Random House Struik. Rhodes, W.M. & Conly, C. (2008). Crime and mobility: An empirical study. In D.V. Canter & D. Youngs (Eds.), Principles of geographical offender profiling (pp. 127-148). Ashgate: Aldershot. Richman, D.M., Wacker, D.P., Asmus, J.M., Casey, S.D. & Andelman, M. (1999). Further analysis of problem behavior in response- class hierarchies. Journal of Applied Behavior Analysis, 32(3), 269-283. Rossmo, D.K. (1993). A methodological model. American Journal of Criminal Justice, 17(2), 1-21. Rossmo, D.K. (1995a). Geographic profiling: Target patterns of serial murderers. Unpublished PhD thesis, Simon Fraser University, British Columbia, Canada. Rossmo, D.K. (1995b). Place, space, and police investigations: Hunting serial violent criminals. In D. Weisburd & J.E. Eck (Eds.), Crime and place (pp. 217-235). New York: Willow Tree Press. Rossmo, D.K. (1997). Geographic profiling. In J.L Jackson & D.A. Bekerian (Eds.), Offender profiling: Theory, research and practice (pp 159-176). Chichester, UK: Wiley. Rossmo, K. (2000). Geographic profiling. Florida: CRC Press. Rossmo, D.K. (2005). Geographic heuristics or shortcuts to failure?: Response to Snook et al. Applied Cognitive Psychology, 19, 651-654. Rossmo, D.K., & Davies, A. (2001). Stealth predator patterns. Crime Mapping News, 3, 6-7. Rotter, J.B. (1954). Social learning and clinical psychology. New York: Prentice-Hall. Royal Canadian Mounted Police. (n.d.). What is criminal investigative analysis? Retrieved from http://www.rcmp-grc.gc.ca/to- ot/cpcmec-ccpede/bs-sc/crim-profil-eng.htm Salfati, C.G., Horning, A.M., Sorochinski, M. & Labuschagne, G.N. (2015a). South African serial homicide: Consistency in victim types, and crime scene actions across series. Journal of Investigative Psychology and Offender Profiling, 12, 83-106. Salfati, C.G., Labuschagne, G.N., Horning, A.M., Sorochinski, M. & De Wet, J. (2015b). South African serial homicide: Offender and victim demographics and crime scene actions. Journal of Investigative Psychology and Offender Profiling, 12, 18-43. Santtila, P., Häkkänen, H., Canter, D. & Elfgren, T. (2003). Classifying homicide offenders and predicting their characteristics from crime scene behavior. Scandinavian Journal of Psychology, 44, 107-118. Santtila, P., Laukkanen, M., Zappala, A. & Bosco, D. (2008). Distance travelled and offence characteristics in homicide, rape, and robbery against business. Legal and Criminological Psychology, 13, 345-356. Santtila, P., Runtti, M. & Mokros, A. (2004). Victims predicting presence of offender's criminal record from antisocial lifestyle indicators of homicide. Journal of Interpersonal Violence, 19, 541-557. Schlesinger, L.B. (2008). Compulsive-repetitive offenders: Behavioral patterns, motivational dynamics. In R.N. Kocsis (Ed.), Serial murder and the psychology of violent crimes (pp. 15-34). New Jersey: Humana Press. Schlesinger, L.B., Kassen, M, Mesa, V. & Pinizzotto, A.J. (2010). Ritual and signature in serial sexual homicides. Journal of the American Academy of Psychiatry and Law Online, 38(2), 239- 246. Schmitz, P. (2004). Geographical profiling: Technical report (TR- 2004/71). Pretoria, South Africa: CSIR Centre for Logistics and Decision Support. Schmitz, P.M.U., Cooper, A.K., Byleveld, P. & Rossmo, D.K. (2000, December). Using GIS and digital aerial photography to assist in the conviction of a serial killer. Paper presented at the 4th Annual International Mapping Research Conference, San Diego. Scott, H. (2008). The 'gentler sex': Patterns in female serial murder. In R.N. Kocsis (Ed.), Serial murder and the psychology of violent crimes (pp. 179-196). New Jersey: Humana Press. Seawell, M. (2010). Criminal profiling: A pseudoscience or future psychiatric subspecialty. The Resident's Journal: The American Journal of Psychiatry, 5(12), 5-6. Seligman, M.E.P. (1975). Helplessness: On depression, development, and death. San Francisco: W.H. Freeman. Shabani, D.S., Carr, J.E. & Petursdottir, A.I. (2009). A laboratory model for studying response-class hierarchies. Journal of Applied Behaviour Analysis, 42(1), 105-121. Shelton, D.E. (2008). The 'CSI Effect': Does it really exist? Retrieved from http://www.nij.gov/journals/259/pages/csi-effect.aspx Shukla-Mehta, S. & Albin, R.W. (2003). From hypotheses to interventions: Applied challenges to intervening with escalating sequences of problem behavior. The Behavior Analyst Today, 4, 5-21. Siegel, L.J. (1998). Criminology: Theories, patterns and typologies (6th ed.). California: West/Wadsworth. Siegel, L.J. & McCormick, C. (2006). Criminology in Canada: Theories, patterns, and typologies (3rd ed.). Toronto: Thompson. Skinner, B.F. (1953). Science and human behaviour. New York: MacMillan. Smith, J.A. (1995). Semi-structured interviewing and qualitative analysis. In J.A. Smith, R. Harré and L. Van Langenhove (Eds.), Rethinking methods in psychology, (pp. 9-26). London: Sage. Smith, R.G & Churchill, R.M. (2002). Identification of environmental determinants of behavior disorders through functional analyses of precursor behaviors. Journal of Applied Behavior Analysis, 35, 125-136. Smith, J.A., Flowers, P. & Larkin, M. (2009). Interpretative phenomenological analysis: Theory, method and research. London: Sage. Snook, B., Canter, D. & Bennell, C. (2008a). Predicting the home location of serial offenders: A preliminary comparison of the accuracy of human judges with a geographic profiling system. In D.V. Canter & D. Youngs (Eds.), Applications of geographical offender profiling (pp. 207-217). Ashgate: Aldershot. Snook, B., Cullen, R.M., Bennell, C., Taylor, P.J. & Gendreau, P. (2008b). The criminal profiling illusion : What's behind the smoke and mirrors? Criminal Justice and Behavior, 35, 1257-1276. Snook, B., Cullen, R.M., Mokros, A. & Harbort, S. (2005). Serial murderers spatial decisions: Factors that influence crime location choice. Journal of Investigative Psychology and Offender Profiling, 2, 147-164. Snook, B., Eastwood, J., Gendreau, P., Goggin, C. & Cullen, R. M. (2007). Taking stock of criminal profiling: A narrative review and

meta-analysis. Criminal Justice and Behavior, 34, 437-453. Snook, B., Eastwood, J., Stinson, M., Tedeschini, J. & House, J.C. (2010). Reforming investigative interviewing in Canada. Canadian Journal of Criminology and Criminal Justice, 52(2), 215-229. Snook, B., Taylor, P.J. & Bennell, C. (2004). Geographic profiling: The fast, frugal, and accurate way. Applied Cognitive Psychology, 18, 105-121. Sorochinski, M., Salfati, C.G. & Labuschagne, G.N. (2015). Classification of planning and violent behaviors in serial homicide: A cross-national comparison between South Africa and the US. Journal of Investigative Psychology and Offender Profiling, 12, 69-82. South African Department of Correctional Services. (2005). White paper on corrections in South Africa. Retrieved from http://www.dcs.gov.za/AboutUs/COE/whitepaper.aspx Spence, K.W & Lippitt, R. (1965). An experimental test of the sign gestalt theory of trial and error learning. In H. Goldstein, D.L. Krantz & J.D. Rains (Eds.), Controversial issues in learning (pp. 118-130). New York: Appleton-Century-Crofts. Spencer, D. (1973). An evolution of cognitive mapping techniques in neighborhood perception. Birmingham: Research Memorandum. Spinelli, E. (2005). The interpreted world: An introduction to phenomenological psychology. London: Sage. Statistics South Africa. (2015). 2011 Census products. Retrieved from http://www.statssa.gov.za/?page_id=3955 Strano, M. (2004). A neural network applied to criminal psychological profiling: An Italian Initiative. International Journal of Offender Therapy and Comparative Criminology, 48(4), 495-503. Sutherland, E.H. (1939). Principles of criminology. Washington DC: J.B. Lippincott Company. Tarde, G. (1903). The laws of imitation. New York: H. Holt and Company. Taylor, P.J., Bennell, C. & Snook, B. (2002). Problems of classification in investigative psychology. In K. Jajuga, A. Sokolowski, & H.H., Bock (Eds.), Classification, clustering, and data analysis: Recent advances and applications (pp. 479-487). Vertlag, Heidelberg: Springer. Thorndike, E.L. (1911). Animal intelligence. New York: Macmillan. Tolman, C.L. (1948). Cognitive maps in rats and men. Psychological Review, 55, 189-208. Torres, A.N., Boccaccini, M.T. & Miller, H.A. (2006). Perceptions of the validity and utility of criminal profiling among forensic psychologists and psychiatrists. Professional Psychology: Research and Practice, 37(1), 51-58. Tunnell, K. (1996). Choosing crime: Close your eyes and take your chances. In B.W. Hancock & P.M. Sharp (Eds.), Criminal justice in America: Theory, practice, and policy, (pp. 38-50). Englewood Cliffs, NJ: Prentice-Hall. Turvey, B. (1999). Criminal profiling. San Diego: Academic Press. Turvey, B. (2002). Criminal profiling: An introduction to behavioral evidence analysis (2nd ed.). London, UK: Elsevier Academic Press. Turvey, B. (2008). Criminal profiling: An introduction to behavioural evidence analysis (4th ed.). San Diego, CA: Academic Press. Vanderwall, J. T. (2007). To Serve and Profile: A Review and Analysis of Current Practices in Police Psychology. Unpublished Honours thesis, University of Tennessee, Knoxville, U.S. Veitch, R. & Arkkelin, D. (1995). Environmental psychology: An interdisciplinary perspective. New Jersey: Prentice Hall. Verma, A. & Lodha, S.K. (2002). A typological representation of the criminal event. Western Criminology Review, 3(2), 37-48. Wafler, M. & Shaw, J. (2011). Fact sheet: criminal profiling. A European Association of Psychology and Law - Student Society Publication, 1, 1-4. Warren, J., Reboussin, R., Hazelwood, R., Cummings, A., Gibbs, N. & Trumbetta, S.(1998). Crime scene and distance correlates of serial rape. Journal of Quantitative Criminology, 14(1), 35-59. Watson, J.B. (1913). Psychology as the behaviorist views it. Psychological Review, 20, 158–177. Weber, R.P. (1990). Basic content analysis (2nd ed.). California: Sage. Weir-Smith, G. (2004). Crime mobility: spatial modelling of routine activities of arrestees and substance abusers in South Africa. GeoJournal, 59, 209-215. Weiten, W. (1989). Psychology: Themes and variations. California: Wadsworth. Wiles, P. & Costello, A. (2008). The 'road to nowhere': Evidence for travelling criminals. In D.V. Canter & D. Youngs (Eds.), Principles of geographical offender profiling (pp. 165-175). Ashgate: Aldershot. Willig, C. (2008). Introducing qualitative research in psychology. Berkshire: Open University Press. Wilson, P.R., Lincoln, R. & Kocsis, R.N. (1997). Validity, utility and ethics in profiling for serial violent and sexual offenders. Psychiatry, Psychology and Law, 4,1-12. Wilson, P.R. & Soothill, K. (1996). Psychological profiling: Red, green or amber? Police Journal, 1,12-20. Woodhams, J. & Grant, T. (2006). Developing a categorisation system for rapists' speech. Psychology, Crime and Law, 12, 245-260. Woodhams, J., Hollins, C.R. & Bull, R. (2007). The psychology of linking crimes: A review of the evidence. Legal and Criminological Psychology, 12(2), 233–249. Woodworth, M. & Porter, S. (1999). Historical foundations and current applications of criminal profiling in violent crime investigations. Expert Evidence, 7, 241-264. Wortley, R. & Mazerolle, L. (2008). Environmental criminology and crime analysis. Cullompton, UK: Willan Publishing. Yarvis, R. (1995). Diagnostic patterns among three violent offender types. Bulletin of the American Academy of Psychiatry and Law, 23, 411-419. Youngs, D. (2004). Personality correlates of offence style. Journal of Investigative Psychology and Offender Profiling, 1, 1-21. Zappalà, A. & Bosco, D. (2007) The phenomenon of serial murder and the judicial admission of criminal profiling in Italy. In R.N. Kocsis (Ed.), Criminal profiling: International theory, research, and practice (pp. 263-272). New Jersey: Humana Press. Zipf, G. (1950). The principle of least effort. Massachusetts: Addison- Wesley. 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100 101 102 103 104 105 106 107 108 109 110 111 112 113 114 115 116 117 118 119 120 121 122 123 124 125 126 127 128 129 130 131 132 133 134 135 136 137 138 139 140 141 142 143 144 145 146 147 148 149 150 151 152 153 154 155 156 157 158 159 160 161 162 163 164 165 166 167 168 169 170 171 172 173 174 175 176 177 178 179 180 181 182 183 184 185 186 187 188 189 190 191 192 193 194 195 196 197 198 199 200 201 202 203 204 205 206 207 208 209 210 211 212 213 214 215 216 217 218 219 220 221 222 223 224 225 226 227 228 229 230 231 232 233 234 235 236 237 238 239 240 241 242 243 244 245 246 247 248 249 250 251 252 253 254 255 256 257 258 259 260 261 262 263 264 265 266 267 268 269 270 271 272 273 274 275 276 277 278 279 280 281 282 283 284 285 286 287 288 289 290 291 292 293 294 295 296 297 298 299 300 301 302 303 304 305 306 307 308 309 310 311 312 313 314 315 316 317 318 319 320 321 322 323 324 325 326 327 328 329 330 331 332 333 334 335 336 337 338 339 340 341 342 343 344 345 346 347 348 349 350 351 352 353 354 355 356 357 358 359 360 361 362 363 364 365 366 367 368 369 370 371 372 373 374 375 376 377 378 379 380 381 382 383 384 385 386 387 388 389 390 391 392 393 394 395 396 397 398 399 400 401 402 403 404 405 406 407 408 409 410 411 412 413 414 415 416 417 418 419 420 421 422 423 424 425 426 427 428 429 430 431 432 433 434 435 436 437 438 439 440 441 442 443 444 445 446 447 448 449 450 451 452 453 454 455 456 457 458 459 460 461 462 463 464 465 466 467 468 469 470 471 472 473 474 475 476 477 478 479 480 481 482 483 484 485 486 487 488 489 490 491 492 493 494 495 496 497 498 499 500 501 502 503 504 505 506 507 508 509