

**CLOSED CIRCUIT TELEVISION AS A SURVEILLANCE TECHNIQUE: A CASE
STUDY OF FILLING STATIONS IN MIDDELBURG, MPUMALANGA,
SOUTH AFRICA**

by

MBOIKI OBED NGWENYA

**Submitted in accordance with the requirements for
the degree of**

MAGISTER TECHNOLOGIAE

In the subject

FORENSIC INVESTIGATION

at the

UNIVERSITY OF SOUTH AFRICA

SUPERVISOR: MRS BC BENSON

CO-SUPERVISOR: DR NJC OLIVIER

FEBRUARY 2012

ACKNOWLEDGEMENT

Various people contributed to this dissertation – to them sincere thanks:

Dr Nick Olivier my supervisor for excellent guidance and support;

Marlette Van der Merwe who edited this dissertation;

The University of South Africa for the facilities made available during the research;

The South African Police Service who granted permission to access documents at their disposal;

All the participants who were willing to be interviewed for this research;

And finally, special word of thanks to my wife Johannah, son Tshepo and daughter Tshepiso who have been pillars of support and believed in me.

ABSTRACT

The researcher attempts to establish how CCTV footage can be used as a surveillance technique, for evidence gained in that way to be admissible in court. To conduct effective investigation, it is important for investigators to be familiar with the application of CCTV footage, its purpose, its benefits and shortfalls.

To achieve the goals and objectives of the practice of CCTV footage, investigators must know how to utilise the value of its evidence, and how to use it to identify suspects.

The clarification and application to the crime situation, the identification of the perpetrator or suspect of a criminal act is mostly impossible, if CCTV footage is not available to assist in identification and tracing of suspects.

LIST OF ABBREVIATIONS

M Tech	-	Magister Technologiae
SAPS	-	South African Police Service
Technikon SA	-	Technikon South Africa
UNISA	-	University of South Africa
CCTV	-	Closed Circuit Television
ECPA	-	Electronic Communication Privacy Act
CALEA	-	Communications Assistance for Law Enforcement Act
FISA	-	Foreign Intelligence Surveillance Act
CBD	-	Central Business District

DECLARATION

I, Mboiki Obed Ngwenya, student number 31686761, declare that “CLOSED CIRCUIT TELEVISION AS A SURVEILLANCE TECHNIQUE” is my own work and that all the sources I have used or quoted have been indicated and acknowledged by means of complete references.

.....

Signature (M.O. Ngwenya)

.....

Date

LIST OF KEY TERMS

Investigation

Surveillance

Identification

Technique

Information

Evidence

Forensic

Value

TABLE OF CONTENTS

CONTENTS	PAGES
1	ORIENTATION TO THE STUDY
1.1	Introduction 1
1.2	Research problem 1
1.3	Aim of the research 3
1.4	Purpose of the research 3
1.5	Research questions under investigation 4
1.6	Key concepts 4
1.6.1	<i>Investigation</i> 4
1.6.2	<i>Surveillance</i> 4
1.6.3	<i>Identification</i> 5
1.6.4	<i>Technique</i> 5
1.6.5	<i>Information</i> 5
1.6.6	<i>Evidence</i> 5
1.6.7	<i>Forensic</i> 5
1.6.8	<i>Value</i> 5
1.7	Research approach and design 5
1.8	Population and sampling 6
1.9	Data collection 8
1.9.1	<i>Literature</i> 9
1.9.2	<i>Interviews</i> 9
1.9.3	<i>Case analysis</i> 13
1.10	Experience 13
1.11	Methods of data analysis 14
1.12	Historical information 15
1.13	Methods taken to ensure validity 16
1.14	Methods to ensure reliability 17
1.15	Ethical consideration 18
1.16	Chapter layout 20

2	ADMISSION REQUIREMENTS FOR CCTV FOOTAGE AS EVIDENCE	
2.1	Introduction	21
2.2	Evidence	21
2.3	Different forms of evidence	24
	2.3.1 <i>Oral testimony of witnesses</i>	24
	2.3.2 <i>Real evidence</i>	24
	2.3.3 <i>Documentary evidence</i>	25
	2.3.4 <i>Video and audio recordings</i>	25
	2.3.5 <i>Computer-generated evidence</i>	25
	2.3.6 <i>Photographs and films</i>	26
2.4	Physical evidence	27
2.5	Admissibility for CCTV evidence	30
2.6	Legal requirements for CCTV footage as evidence	34
2.7	Admissibility requirements of CCTV as evidence	36
2.8	Closed Circuit Television	37
2.9	CCTV footage	39
2.10	Chain of evidence of CCTV footage	39
2.11	Requirements for keeping the chain of evidence	42
2.12	Suspect	43
2.13	Tracing of suspects	44
2.14	Summary	44
3	CCTV FOOTAGE AS SURVEILLANCE TECHNIQUE IN THE INVESTIGATION OF ROBBERIES	
3.1	Introduction	46
3.2	Criminal investigation	46
3.3	Forensic investigation	47
3.4	The difference between forensic and criminal investigation	50
3.5	Robbery	51
	3.5.1 <i>Elements of robbery</i>	51
	3.5.2 <i>Forms of robbery</i>	52
3.6	Objective of investigation	52
3.7	Surveillance	56
3.8	Purpose of surveillance	57

3.9	Different types of surveillance	59
3.9.1	<i>Fixed or stationery surveillance</i>	59
3.9.2	<i>Mobile or moving surveillance</i>	60
3.9.3	<i>Undercover surveillance</i>	60
3.10	Identification	61
3.10.1	Categories of identification	63
3.10.1.1	<i>Culprit identification</i>	63
3.10.1.2	<i>Witness identification</i>	63
3.10.1.3	<i>Action identification</i>	64
3.10.1.4	<i>Imprint identification</i>	64
3.10.1.5	<i>Situation identification</i>	65
3.10.1.6	<i>Cumulative identification</i>	65
3.11	Individualisation	65
3.12	The difference between individualization and identification	67
3.13	Purpose of identification	67
3.14	The installation of CCTV	69
3.15	The value of CCTV to private sector	71
3.16	Benefits of CCTV	72
3.17	Shortfalls of CCTV	74
3.18	Summary	76
4	FINDINGS AND RECOMMENDATIONS	
4.1	Introduction	77
4.2	Findings	77
4.3	Recommendations	82
4.4	Conclusion	83

REFERENCES

84-92

Attachment A: Interview schedule for investigators

Attachment B: Interview schedule for prosecutor

Attachment C: Interview schedule for garage owners

Annexure A: Letter from South African Police Service

CHAPTER 1

ORIENTATION TO THE STUDY

1.1 INTRODUCTION

Closed circuit television (CCTV) have been used for a number of years as part of the security apparatus of banks and stores, closed circuit television (CCTV) is increasingly becoming more prevalent on the streets of South Africa. CCTV monitoring takes place in a number of cities in the world (Hector, 2005:80).

The high level of crime in South Africa has become intolerable - particularly in the area of study, which is Middelburg, Mpumalanga, South Africa. There are twenty-two filling stations in Middelburg of which only two are rural; the other twenty are in town. Only 14 filling stations are fitted with closed circuit television (CCTV).

According to the South African Police Service (2009) Annual Report of the SAPS Mpumalanga for 2008/2009, a total of 16 robbery cases were reported in Middelburg for the period of 2008/2009 as compared to six cases reported in 2007/2008. The researcher needed to concentrate on the reactive technique, which could also be used as a proactive technique, for the purpose of this research. It is crucial for investigators to have the required skills to manage these conditions (De Bruyn, Erasmus, Jason, Mentz & Steyn, 2002:200).

1.2 RESEARCH PROBLEM

McCahill (2002:16) points out that the identification and exclusion of known or suspected persons is currently practised in many shopping centres. Closed circuit television can be used as a reactive method, in the sense that perpetrators can be identified and traced. Laura (2001:11) says investigators of crime have no knowledge of the effective use of surveillance in the investigation of crime. The

business world also lacks knowledge about the value of CCTV in the investigation of crime (Welsh & Farrington, 2004:500). Business people only want to monitor their workers not to steal from them and are careless in assisting the police to reduce crime (Laura, 2001:19). McCahill (2002:17) speaks about the new penology as the actuarial, seeking to regulate the danger, as opposed to the old penology that concentrated on an individual criminal and diagnosis of the problem.

Filling station robberies reported in the Middelburg area, Mpumalanga, where the research was conducted amounted to 16 including filling stations without CCTV for 2008/2009. According to the South African Police Service (2009) Annual Report of the SAPS Mpumalanga for 2008/2009, a total of four robbery cases were solved successfully at Middelburg filling stations, although there are 14 filling stations fitted with CCTV. This shows a low solving rate of robberies committed at filling stations in Middelburg. The investigating officers are not using CCTV footage for information in identifying and tracing suspects.

Laura (2001:5) discusses the use in other countries of CCTV in dealing with crime. Many agencies in the United States and other countries are applying CCTV technology to police operations, including installing CCTV on streets. The application of video surveillance by law enforcement agencies has grown substantially during the past decade. Closed circuit television was found useful, when applied as follows (Laura, 2001:11, 21):

- 43% of police chiefs said it was useful in investigative assistance
- 37% found it useful in evidence gathering and
- 20% found it useful in crime reduction

According to Norris and Amstrong (1999:63), CCTV has been proven to work; therefore, more is needed where crime is high. Matchett (2003:3) states that a camera cannot protect property from theft or vandalism. The device merely serves to gather and store information - primarily for future use as evidence, if needed. Business people enjoy working with police to provide additional security, by installing closed circuit television in order to bring down the level of crime (Hector, 2005:80).

In light of the need to curb the high crime rate in South Africa, the researcher decided to investigate possible reasons for the cause of high robbery cases at filling stations in Middelburg. Prior to the research, the researcher perused filed robbery case dockets committed at filling stations in Middelburg police station archives.

The researcher also, prior to the research, interviewed a Senior Public Prosecutor who represented all the prosecutors in Middelburg Magistrate's Court, who indicated that CCTV footage is often not admissible in court, because the right procedure was not followed when evidence is gathered in relation to CCTV footage.

The researcher interviewed the head of the human development division of SAPS in Middelburg, and perused the detective course curriculum, Resolving of Crime (ROC) programme of the South African Police Service (SAPS) Training Manual 2008/2009. In this course there was no mention of CCTV footage. The head of the Research and Development Division indicated that they made use of inputs from the detectives experienced in CCTV footage, to compile a curriculum to be presented to course goers in future courses.

1.3 AIM OF THE RESEARCH

The aim is to establish if CCTV footage could be used as a surveillance technique in the investigation of robberies at filling stations.

1.4 PURPOSE OF THE RESEARCH

According to Denscombe (2002:29), the purpose of the research requires the researcher to identify a relatively narrow and precise area for investigation, rather than to set out to investigate some general area of interest. Following the ground rules in Denscombe (2002:27), the purpose of this researcher was to achieve the following:

- To explore national and international sources, to get new information on admission requirements for CCTV and how CCTV footage chain can be kept as surveillance technique

- To evaluate the procedure investigators are following in using CCTV footage as evidence and for investigation purposes, with the aim of determining its strengths and weak points, with the intention of attempting improvement
- To improve procedures regarding CCTV footage as surveillance techniques and how should a chain of evidence be kept

1.5 RESEARCH QUESTIONS UNDER INVESTIGATION

Research questions help to set clear findings and recommendations from the data collected. In an endeavour to address a research problem, each and every study must have particular questions it seeks to answer Mouton (2001:122). The research questions are not the broad goals of the research that are directly investigated by the research, but are specific things that are to be measured and interrogated in order to shed light on the broader topic (Denscombe, 2002:31). This research sought to find answers of the following questions:

- What are the admission requirements for CCTV footage as evidence?
- How could CCTV footage be used as surveillance technique in the investigation of robberies?

These research questions chiefly guided the progression of the study, in that they were always taken into account as the study unfolded. Answers to these questions are sought and provided in the study.

1.6 KEY CONCEPTS

According to Terre Blanche and Durrheim (2004:2), there are certain concepts that are central to any inquiry. The concepts that follow are crucial to this study, and are explained in order to simplify what was envisaged:

1.6.1 Investigation - According to Marais and Van Rooyen (1990:17), investigation is the systematic search for the truth with a basis of objective and subjective traces.

- 1.6.2 Surveillance – According to National Instruction 3/2003 of the South African Police Services (2003:1), surveillance is a covert method used to observe people continuously, including places and properties, with the purpose of gathering information.
- 1.6.3 Identification – According to Van Heerden (1985:10), identity means uniqueness, and identification rests on the theory that everything in the universe is unique.
- 1.6.4 Technique – is a specific skill or competence which is necessary for the performing of a task (Marais & Van Rooyen, 1990:177).
- 1.6.5 Information – According to National Instruction 2/2002 of the South African Police Services (2002:3), information is unevaluated material of every description, including that derived from surveillance, reports, rumours, photographs and other sources, which by means of evaluation, confirmation and interpretation, may be transformed into intelligence.
- 1.6.6 Evidence - Gilbert (2004:58) defines evidence as anything properly admissible in a court of law, which will aid the function of criminal proceedings in establishing guilt or innocence.
- 1.6.7 Forensic - Tulloch (1993:585) defines 'forensic' as a means used in connection with a court of law. According to Erzincilioglu (2004:14), 'forensic' means a technique for reconstruction of the past, whether the past is of legal interest or not.
- 1.6.8 Value – According to the *Oxford Dictionary of current English* (2005:493), value means how useful or important something is.

1.7 RESEARCH APPROACH AND DESIGN

According to Mouton (2001:55), research design is a plan or blueprint regarding how one intends to conduct research. Huysamen (1993:10) offers a related definition of research design as a plan or blueprint according to which data are collected to investigate the research question in the most economic manner. The research design chosen in conducting this study was influenced by the kind of the study being conducted. For this reason it was considered imperative to apply an empirical design influenced by the writing of Melville and Goddard (1996:32), in stating that the term 'empirical' is used to describe the study as it currently exists. Empirical research

“is the production of knowledge based on experience or observation (Maxfield & Babbie, 1995:4). The researcher used an empirical design in search of new knowledge, based on experience and observation as recommended by Maxfield and Babbie (1995:4).

The researcher gathered multiple forms of data by consulting literature sources, conducting interviews and examining documents that were relevant to the research topic other than to rely on a single data source (Creswell, 1998:38).

Literature or publications pertaining to the topic were found in South African legislation and decided cases. However, the researcher was able to find few South African textbooks regarding the research topic. The researcher conducted in-depth interviews with police officials, garage owners and a prosecutor, in which their conclusions were based on their experiences (Maxfield & Babbie, 1995:4).

The researcher wanted maximum insight into the research problem at Middelburg detective unit and therefore interacted directly with the participants and collected information from them in relation to the research topic. Interaction allows participants to verbally express their own views and experience regarding the research topic (Taylor, 1994:208).

1.8 POPULATION AND SAMPLING

The population for study consists of a group of persons from whom the researcher is able to draw conclusions (Maxfield & Babbie, 1995:107). According to Gray (2004:82), a population can be defined as “the total number of possible units or elements that are included in the study”. While Krobe and Bohrnstedt (1991:12) define population as a set of persons, objects or events having at least one common attribute, allowing researchers to generalise on the basis of representative sample observation.

The population in this research consisted of all detectives in South Africa. As it was difficult to do the research on all the detectives in South Africa, the researcher decided to work with the target population of detectives in Middelburg. A target

population is the population to which one wishes to generalise the results of a research study, as explained by Mouton (1996:135). The researcher compiled an alphabetical name list of all the detectives in Middelburg. The list was numbered from 1 to 100 and each number was cut out and was placed in a basket. The basket was shaken and numbers were drawn from the basket to select a sample of 25 detectives. A sample of 25 investigators was selected from the target population which is 100 investigators. The investigators in Middelburg investigate criminal cases including armed robberies at filling stations. The investigators were named sample "A". The sample is regarded as representative of all the target population. The researcher regards the target population as not representative of the population because the target population was not scientifically selected. Middelburg was selected because it is the work place of the researcher.

The researcher used simple random sampling, as described by Leedy and Ormrod (2005:201) as a method of sampling. "In a random sample each person in the universe has an equal probability of being chosen for the sample, and every collection of persons of the same size has an equal probability of becoming the actual sample, as long as they are members of the universe. All that is required to conduct random sample after an adequate sampling is conducted, is to select persons without showing bias for any personal characteristics" Bailey (1987:87). Simple random sampling, involves a selection process that gives every possible sample of a particular size the same chance of selection. Each element of a population must be able to be identified and numbered. The selected numbers then determine which population elements are to be included in the sample (Blaickie, 2003:168).

During the inspection of robbery case dockets occurred at filling stations, a problem regarding withdrawals and acquittals was discovered. The selection of Middelburg detective unit was thus a non-probability selection. The researcher perused filed case dockets (a total of 1599) in the archives, for 2008/2009 of Middelburg Police Station and selected the first 50 case dockets in which CCTV was utilised. The researcher picked up every second docket till he reaches a sample of 50 case dockets.

According to Neuman (2006:160), a sample is a set of cases from a larger pool and generalised to the population. Gray (2004:83) explains that an ideal sample is the miniature of the population-just like it, only smaller.

The researcher used convenience sampling to select sample “B”. Leedy and Ormrod (2005:206) say that convenience sampling makes no pretenses of identifying a representative subset of a population. It takes people or other units that are readily available. All garages installed with CCTV were visited to determine willingness; only five of the 22 garage owners were willing to participate. Leedy and Ormrod (2005:206) further define convenience sampling as accidental sampling. Accidental sampling is an acceptable sample of population (Bless & Higson-Smith, 1995:92).

The researcher made use of purposive sampling to select sample “C”. De Vos, Strydom, Fouche and Delport (2002:13) say that purposive sampling is based entirely on the judgmental of the researcher, a sample is composed of element that contain the most characteristic, representative or typical attribute of the population.

The researcher interviewed the senior public prosecutor who deals most with the serious cases in which CCTV footage is mostly used as evidence in robbery cases at filling stations in Middelburg. She is the representative of the prosecutors in Middelburg as most prosecutors fall under her and get advice from her on a daily basis. She holds a LLB degree, and she has been a prosecutor for 27 years in the regional court. She has prosecuted in all types of serious cases, including robberies where CCTV and tape recordings were used. She attended three additional courses at Justice College, Pretoria, for prosecutors and management. The sample is not representative of the prosecutors because it was purposively selected.

1.9 DATA COLLECTION

The researcher opted to use literature, interviews and case study methods, by which data was collected.

According to Tulloch (1993:363), data is known facts or things used as a basis for inference. The researcher collected primary data. Welman and Kruger (2001:35)

define primary data as written or oral accounts of witnesses or participants of an event, or an audiotape, videotape or photographic recording.

According to Babbie (1998:111), the use of different research methods to test the same findings is called “triangulation”. The author further makes mention of the fact that each method has its strengths and weaknesses. The literature obtained by the researcher was analysed against the research questions in an attempt to find relevant and required information.

1.9.1 Literature

The researcher visited the various resource centres to locate available material on the research topic. Books on the same topic were not found. The researcher consulted the Open Shelf collection catalogue at Unisa library, under ‘surveillance’. The researcher also checked relevant journals, Intranet and internet including criminal justice websites on CCTV, admissibility and evidence for any material on the topic under research. The researcher decided to break down the topic into the main concepts of the study, such as:

- Surveillance
- Closed circuit television (CCTV)
- Investigation of crime
- Identification
- Forensic investigation
- Physical investigation

The researcher checked for any literature covering the above concepts, literature was found and studied to find answers to the research questions. In the libraries there were no books on CCTV footage as such, at the time this research was undertaken.

1.9.2 Interviews

Grinnell (1993:325) defines interviews as a technique of data collection measuring responses of participating participants. Whereas Morrisette (1999:15) defines an interview as not simply a matter of chunks of information being transmitted between

people, but a conversational process that is participatory, collaborative and aesthetically rich. The words used do not convey information, but reflect the speaker's world. The purpose of interviews is to get other people's viewpoints (Seidman, 1998:1). Interviews were employed for the purpose of obtaining appropriate required information from the participants.

The researcher obtained permission, filed as annexure 1 from South African Police Service, Strategic Management Head Office, to conduct the research and interview police investigators. The researcher compiled an interview schedule from the research questions: the police officials (sample A) attachment "A" and the prosecutor (sample C) attachment "C" were asked the same questions, while the garage owners (sample B) had their own interview schedule attachment "B".

Before the interviewing process began, the researcher explained the following to provide further clarity on the investigation:

- The aim of the research
- The research subject
- The duration of the research
- The procedures to be followed
- Clarification that the provided information would be treated as confidential

The researcher used structured interviews, because of the fixed interview schedule (DeVos, Strydom, Fouche & Delport, 2002:300). Questions asked were open-ended (De Vos et al., 2002:172). The interviews were personally conducted by the researcher. Before the interviews were conducted, permission was obtained from the interviewees. The interviews were conducted in a private room. The interviews were recorded by writing down the answers.

A fully structured interview is where there is a fixed sequence of predetermined questions. It has the advantage of being in a social situation where someone who is good at interviewing can build up greater empathy between themselves and the interviewee, leading to greater involvement and better quality data. Data obtained is

then easily compared, with less risk of bias occurring, simply because different people are being asked rather different questions (Robson, 2002:90).

For conducting productive interviews, the researcher used the guidelines provided by Leedy and Ormrod (2005:147):

- Identify some questions in advance
The researcher compiled interview schedules from the research questions. To allow the participants to express themselves freely, he asked open-ended questions. The researcher used the research questions, research aims and research purpose to identify the interview schedule questions. The topic itself was relevant to the participants' work experience
- Make sure your interviews are representative of the group
The researcher interviewed detectives in Middelburg, and considered the target population of the detectives in Middelburg not representative of all detectives in South Africa. The researcher used simple random sampling for sample "A" (detectives). The researcher used convenience sampling to select sample "B" (garage owners) in Middelburg, the target population of garage owners was not representative of the population. For sample "C" (prosecutor) the researcher used purposive sampling, the sample is not representative of the prosecutors because it was purposively selected.
- Find a suitable location
The researcher conducted the interviews at the participants' workplaces. The venues were quiet, which was conducive enough to encourage the interviewees to respond freely without interruptions such as movement and noise in the middle of the interviews. The setting provided privacy, was comfortable, a non-threatening environment, and easily accessible. The offices were arranged in such a manner that encouraged involvement and interaction
- Get written permission
The researcher obtained written permission to conduct the research from the Provincial Commissioner SAPS in Mpumalanga. The researcher also obtained permission from the participants to conduct interviews with them.
- Establish and maintain rapport

The researcher was courteous and respectful at all times, and showed interest in what the participants had to say (Focus on the actual rather than the abstract or hypothetical). The researcher asked the participants questions relating to CCTV as a surveillance technique

- Don't put words in people's mouths

The researcher used open-ended questions to give the participants space to come up with their own responses

- Record responses verbatim

The researcher wrote down everything that was said by the participants

- Keep your reactions to yourself

The researcher showed interest and composure to responses from the participants

- Remember that you are not necessarily getting the facts

The participants' responses were treated as perceptions rather than as facts

1.9.2.1 Piloting of the interview schedules

A pilot study is defined as the process whereby the research design for a prospective survey is tested De Vos et al. (2002:211). Leedy and Omrod (2005:11) indicate pilot study as the aim to determine whether the questions in the interview schedules were applicable to the work environment of the participants. The researcher tested the interview schedules by physically asking police investigators, prosecutors and garage owners to evaluate the schedules and look for shortcomings. The identified shortcomings were corrected when the final schedule was drafted. Both interview schedules were tested with people who did not participate as participants in the research. The interview schedules were tested with other 20 investigators who were not selected to be part of the sample; five other garage owners who were not part of the sample and two other prosecutors who were not part of the sample. All these people were selected by their availability and willingness to participate. The researcher used a convenience sampling method technique to select the people who the interview schedules were tested against. After the conducting of the pilot study the researcher forwarded the schedule to the supervisor for reading and approval.

1.9.3 Case dockets analysis

Welman and Kruger (2001:21) argue that the objective of case study research is to investigate the dynamics of some single bounded systems, typically of a social nature, such as a family, group, community and participants in a project. Mason (1996:212) mentions that a case study allows an investigation to retain the holistic and meaningful characteristics of real life events. The researcher did docket analysis as a form of case study.

The researcher perused filed case dockets (a total of 1599) in the archives, for 2008/2009 of Middelburg Police Station and selected the first 50 armed robbery case dockets in which CCTV footage was available in the docket. The researcher picked up every second docket till he reaches a sample of 50 case dockets. All 50 case *dockets were analysed to get answers for the following questions:*

- Was CCTV used as surveillance technique?
- Was there any CCTV footage evidence admitted in court as evidence in the dockets?
- Was there any evidence that the chain of evidence in relation to CCTV footage kept in the dockets?

Out of 50 case dockets analysed, it was discovered that in only four dockets CCTV footage was used as technique and in all four dockets CCTV footage was admitted as evidence. The chain of evidence was only used in four of the case dockets.

1.10 EXPERIENCE

The researcher is a colonel in the SAPS and has been with the SAPS for the past 22 years. He has been in the Detective Service since 1991. The researcher has investigated all types of serious cases, including robberies where CCTV and tape recordings were used. The researcher has a National Diploma in Policing and holds a B Tech degree in forensic investigation. He has attended nine different courses for investigation of crime locally and internationally.

Based on the above, the researcher uses his experience from time to time where there is a dispute in viewpoints in an attempt at clarification.

1.11 METHODS OF DATA ANALYSIS

Well-tested data collection techniques were used, namely:

- Literature
- Interviews
- Case analysis

Literature was identified that could address the aims and research questions. Data analysis is, according to Reid and Smith (1989:243), the categories, ordering, manipulating and summarising of data to obtain answers to the research question. Rubin and Babbie (1997:93) define data analysis as the process through which data is manipulated for the purpose of answering the research question. In this study, data was analysed by means of categorising, ordering, manipulating and summarising data collected, in order to get answers to the research questions. In the process, as a way of simplifying analysis of data, correlation became a meaningful tool to facilitate data analysis (Kerlinger, 1986:14). The analysis in this study yielded unanticipated findings that reflect on research problems, but beyond the specific questions that guided the research. The data was qualitatively analysed in terms of the research instruments in question and the analytical framework. The interviews were transcribed. To this end a systematic interpretive procedure was employed. In this study, transcription of the recorded interviews was done (De Vos et al., 2002:303).

The researcher used Tesch's eight-step process to analyse the data collected (Van As& Van Schalkwyk, 2001:162), as follows:

- To get a sense of the whole, the researcher read through the transcript carefully and took some ideas as they came to mind
- The researcher picked one document (one interview) which might have been the most interesting, the shortest one, or the one on top of the pile. He went through the document, asking himself what the essence of the document was

all about. He looked for the underlying meaning of the document, rather than thinking about the “substance” of the information. He then wrote his thoughts about this in the margin

- When the researcher had completed the above task for several informants, he made a list of topics that emerged, and clustered together similar topics. He formed these topics into columns, arrayed as major topics, unique topics and leftovers (leftovers were given a specific category)
- The researcher took the list and went back to the data. He abbreviated the topics as codes and wrote the codes next to the appropriate segments of the text. He tried out these preliminary organising schemes to see whether new categories and codes emerged
- The researcher found the most descriptive wording of the topics and turned them into categories. He looked at reducing the total list of categories by grouping together topics that related to one another, and drew lines between the categories to show the interrelationships, where applicable
- The researcher made a final decision on the abbreviation of each category and alphabetised those codes
- The researcher then assembled the data material belonging to each category in one place, and performed a preliminary analysis of the data
- Where necessary, the researcher re-coded the existing data

1.12 HISTORICAL INFORMATION

Twenty five (25) police officers were interviewed, all 25 officers were investigators. Five of them had eight years' experience, 10 had 15 years' experience and the other 10 had 12 years' experience. 12 made mentions that they did not make use of surveillance in the past while 13 indicated that they did make use of surveillance. All 25 investigators undergone basic detective training, 15 did receive training in the use of surveillance whereas 10 did not undergo training in the use of surveillance.

1.13 METHODS TAKEN TO ENSURE VALIDITY

Validity concerns the accuracy of the questions asked, the data collected and the explanation offered. Generally it relates to the data and the analysis used in the research (Denscombe, 2002:100).

According to Melville and Goddard (1996:37), validity means that the measurements used in the research are correct. To measure the correctness of this research, the researcher conducted interviews, case studies and consulted literature, to address the research field. The researcher conducted personal interviews with the samples, and their responses were recorded. The questions put to the samples were relevant to the research questions. The samples were asked the same questions, except those put to the garage owners. If the research was conducted by other authors, they should have arrived at the same conclusion. The advantage of personal interviews was that if the participant did not understand the question, the researcher could explain it to them. To ensure validity in case analysis, the same criteria was used during the analysis of cases to obtain information from the selected cases. The sampling method that was used gave all the finalised cases an equal opportunity of being selected.

To ensure validity of the literature, the researcher used only information that was obtained from literature consulted, which was relevant to address the research questions and the aim of the study. Bailey (1996:238) is of the opinion that one can determine accuracy in considering validity. The researcher perused filed case dockets (a total of 1599) in the archives, for 2008/2009 of Middelburg Police Station and selected the first 50 case dockets in which CCTV was utilised. The researcher picked up every second docket till he reaches a sample of 50 case dockets.

The researcher used a triangulation approach to collect data, which constitute a multitrait-multimethod, whereby data is collected from multiple sources. Leedy and Ormrod (2001:99) explain that a multitrait-multimethod is made use of when two or more different characteristics are each measured using two or more different approaches. Triangulation as explained by Leedy and Ormrod (2001:99) will further

enhance validity whereby multiple sources of data are collected, namely; literature, interviews and docket analysis.

All the interpretations, analysis and conclusions were made on the basis of data gathered from the interviews, literature and case studies, as explained by Mouton (2001:110). In order to ensure trustworthiness and authenticity of data, information obtained from interviews, literature and case dockets analysis was used in a combined manner to establish patterns and trends (Bouma, 1993:47). The researcher looked for common themes in the information collected through the following three methods:

- Interviews
- Literature studies
- Case dockets analysis

Leedy and Ormrod (2001:99) explain that a multitrait-multimethod is made use of when two or more different characteristics are each measured using two or more different approaches. The researcher used a triangulation approach to collect data, which constitute a multitrait-multimethod, whereby data is collected from multi sources. This, according to Leedy and Ormrod (2001:99), does not guarantee the validity of a measurement instrument, it does, however, increase the likelihood of such validity. According to Terre Blanche and Durrheim (2004:431), “triangulation” refers to the use of multiple methods to study a single problem, taking into account the convergent evidence.

1.14 METHODS TO ENSURE RELIABILITY

Participants were not asked the same questions to ensure reliability of the information. Sample “B” was not asked the same questions as sample “A” and “C”

According to Mason (2002:24), reliability involves the accuracy of the research methods and techniques. The researcher used an interview schedule during the interviews, to make sure that the participants were asked identical questions. The researcher wrote down the samples’ responses.

For literature, the researcher wrote down the information from the books perused. According to Denscombe (2002:100), reliability relates to the methods of data collection and the concerns that they should be consistent and not distort the findings. Generally, it entails an evaluation of the methods and techniques used to collect data. It refers to the ability of the process not to differ from one occasion to another.

The researcher ensured that the data collected was consistent and that the findings of the research were not distorted in any way, by administering the use of instruments in a standardised manner in order to increase reliability. The answers to the questions posed during interviews were written down to provide proper record for analysis. The interview schedule that was used for all the respondents ensured consistency in measurement.

The interviews were conducted in private to ensure confidentiality and anonymity. No leading questions were asked during the interviews nor the answers influenced in any way. This ensures that when different researchers use the same interview schedule as a measurement, they will obtain the same result. The literature that was used in the research is acknowledged throughout the research report. The cases were analysed were subjected to the same criteria to ensure consistency in the data collection.

1.15 ETHICAL CONSIDERATIONS

Fox and Meyer (1996:45) define ethics as the process by which what is right is distinguished from what is wrong. The researcher took ethical conduct into consideration when undertaking the research. He abided by the University of South Africa Code of Ethics (2002:2) which is relevant to this research and stipulates the following:

- Trustworthiness and sincerity

The researcher was always trustworthy and sincere when conducting the research, by not being biased and keeping the same interview schedule all the time. Ideas that came from literature and participants were considered

- Obtaining consent and approval

The researcher obtained the approval of the Provincial Commissioner, South African Police Service, Mpumanlanga to conduct the research, and also the participants' consent was obtaining to conduct the interviews with them. According to Leedy and Ormrod (2005:101), there are four categories which most ethical issues in research fall into:

- Right to privacy

The researcher conducted the research in privacy. The interviews took place in the samples' place of work where there was no interference. All participants were called participants, no names were mentioned. Rubin and Babbie (1997:57) define privacy as that which is not intended to others to know

- Honesty and professional colleagues

The researcher acknowledged all sources, and gave credit where it was due. The researcher reported the findings in a complete and honest fashion, without misrepresenting what he had done or intentionally misleading others about the nature of the findings. The researcher did not fabricate data to support a particular conclusion. The use of another person's ideas or words was acknowledged by the researcher

- Informed consent

The samples were informed about the nature of the research study, and they volunteered to participate in the study. Bless and Higson-Smith (1995:102-103) say that in a study of this nature, participation should be voluntary. The constitutional rights of the participants were taken into consideration; the researcher got consent from participants who voluntarily participated. Freedom of religion, belief and opinion is stated in Section 15 of the Constitution of the Republic of South Africa Act 108 of 1996. The religion and beliefs of the participants were respected

The researcher took into consideration the principles of beneficence, respect of human dignity and justice. Participants were informed about the procedures and processes that were to unfold, and the fact that the investigation was solely for study purposes. The participants were informed about the aim and the purpose of the research as indicated above. The principles of beneficence, respect for human dignity and justice were taken into consideration. Ethical considerations in terms of

voluntary participation were observed, in line with the writings of Bless and Higson-Smith (1995:102-103). Participants were advised to decline or withdraw any time they felt uncomfortable or compromised. The ethical issues were thus seriously considered.

1.16 CHAPTER LAYOUT

To address the topic, aim and the research questions, the dissertation is divided in the following chapters:

Chapter 1: Methodology used in the research

Chapter 2: The admission requirements for CCTV footage as evidence

Chapter 3: How should CCTV footage be used as surveillance technique in the investigation of robberies?

Chapter 4: Findings and recommendations

List of references

CHAPTER TWO

ADMISSION REQUIREMENTS FOR CCTV FOOTAGE AS EVIDENCE

2.1 INTRODUCTION

This chapter investigates the admissibility of CCTV footage as evidence in the investigation of robberies at filling stations. Adams, Caddell and Krutsinger (2004:2) define evidence as the backbone for prosecution. Often, cases are solved with evidence, and offenders are prosecuted on the basis of evidence. It is not just enough to have evidence; it must have been collected and processed properly and lawfully. The *Oxford Dictionary of current English* (1998:156) defines the word 'evidence' as a statement made or objects produced in a court of law, to prove something. It is essential to lay the foundation for outlining admission requirements for CCTV footage. This chapter covers the requirements for CCTV footage as evidence.

The research discusses the participants' and the literature viewpoints in regard to the meaning of forensic investigation, criminal investigations, objectives of forensic investigation, surveillance and the different types of surveillance. This chapter examines whether there is any difference between the concepts of forensic and criminal investigation. The chapter also covers the chain of evidence in applying CCTV footage as evidence.

2.2. EVIDENCE

The admission requirements for CCTV footage as evidence play an important role in the investigation of crime and the prosecution thereof. Based on the 50 case dockets analysed, it was discovered that CCTV footage was used in only four case dockets. Gilbert (2004:58) states that evidence is something which aids the function of criminal proceedings in establishing guilt or innocence. For CCTV footage to be admissible in court, it must have been obtained legally, procedurally and be managed correctly. Dempsey (2003:107) argues with the view of Gilbert, stating that evidence includes all means by which the truth of an alleged fact is submitted to scrutiny.

Emson (2006:1) defines the law of evidence as a fascinating blend of practical and academic issues, and it is applied in the courts every day to determine, amongst other things, whether evidence ought to be admitted. Cross and Wilkins (1975:1) differentiate the law of evidence as how facts may be proven in a court of law, and what facts may not be proved. In relation to CCTV, how footage is collected plays a vital role in a court of law.

According to Schwikkard and Van der Merwe (2002:21), evidence is direct when a fact at issue is proved directly by such evidence. Schwikkard and Van der Merwe (2002:18-19) explain that there is a distinction between evidence and evidential material. They further state that South African courts are not entirely consistent in distinguishing between evidence and evidential material.

According to Schmidt and Zeffertt (1997:1), evidence essentially consists of oral evidence, documentary evidence and real evidence produced and received in court. Evidence, however, is not the only means of furnishing proof. It is acceded that the term “probative material” refers to real evidence, but also to formal admission, judicial notice presumptions and statements made in terms of Section 115 of the Criminal Procedure Act, and which do not amount to formal admissions (Schmidt & Zeffertt, 1997:100). “Probative material” therefore refers to more than oral, documentary and real evidence. According to Schmidt and Zeffertt (1997:1), evidence has been said to encompass all the information given in a legal investigation to establish the fact in question.

Dempsey (2003:107-108) explains that the word “evidence” includes all means by which an alleged fact, the truth of which is submitted to scrutiny, is established or disproved. Sennewald and Tsukayama (2001:139) define evidence as “the state of being evident, something that makes another thing evident, such as a sign, a statement of witness and exhibit, etc., bearing on or establishing the point in question in a court of law”. Gilbert (2004:58) explains that evidence is anything properly admissible in court that will aid the function of a criminal proceeding in establishing guilt or innocence or establishing the point in question in a court of law. Bennett and Hess (2004:87) define evidence as “data on which a judgment or

conclusion may be based". Swanson, Chamelin and Territo (2003:769) define evidence as "anything that tends logically to prove or disprove a fact at issue in a judicial case of controversy". It is explained by Sennewald and Tsukayama (2001:139), Gilbert (2004:58), Swanson, Chamelin and Territo (2003:769) that anything that might have the slightest bearing on the outcome of a case can be broadly classified as evidence, provided it has a logical tendency to relate to the outcome of the case. In a criminal case, if the matter has bearing on the guilt or innocence of the defendant, it is evidence.

The question "What is evidence?" was put to the samples "A" and "C". Sample "A" responded as follows:

- Two investigators said evidence is not vital in court – only the judge's interpretation of facts is crucial
- Nine investigators said that evidence governs the proof of facts in a court of law and makes substantive law effective
- Four said that evidence includes all means by which an alleged fact, the truth of which is submitted to scrutiny, is established or disproved
- Ten said explained that evidence is something that can assist in proving a case in court

Sample "C" said that evidence means anything or everything that can be used or presented in court to prove a case against an accused.

The responses of the participants from both samples "A" and "C" indicated that there is no real difference between their understanding of the concept "evidence" and the viewpoints of Gilbert (2004:58), Dempsey (2003:107), Emson (2006:1), Cross and Wilkins (1975:1), Schwikkard and Van der Merwe (2002:21), and Schwikkard and Van der Merwe (2002:18-19) which means they are in agreement on what the meaning of evidence is. If CCTV footage answers to the basic rules as spelled out by Schwikkard, Skeen and Van der Merwe (1997:260) then CCTV footage answer to the admission requirements in court.

The question was not put to sample "B", the garage owners.

2.3 DIFFERENT FORMS OF EVIDENCE

In any investigation, various types of evidence are taken into account. Cannon and Neligan (2002:2) mention the types of evidence as follows:

2.3.1 Oral Testimony of Witnesses

According to Joubert (2001:342), oral evidence is usually presented orally, under oath, and subjected to examination. Supported by Adams et al. (2004:4) oral testimony of witnesses is the best known type of evidence given by witnesses in a court, under oath. The value of oral evidence cannot be undermined in the courts of law, and as such has been of value in the implementation of the law.

2.3.2 Real Evidence

It is also possible for information to be proved in other ways, e.g. by real evidence. For evidence, for example, a murder weapon seized may constitute an item of real evidence, but normally requires oral testimony in order to make its significance clear. Adams et al. (2004:4) describe real evidence as physical evidence.

Anything as small as a pollen particle or as large as a train, which is significant in investigation of crime, or can be tendered as evidence in court, is regarded as physical evidence (Lee & Harris, 2000:4). Adams et al. (2004:4) is of the same view as that of Zeffertt, Paizes and Skeen (2003:404), arguing that real evidence consists of things which can be examined by the court as proof.

In *S v Mpumlo* 1986 (3) SA 485 (E) the court ruled that video film is not a document and that video-and tape-recordings constitute real evidence. In *Wise v The Queen* (1992) 8 CRR (2d) 53, the Appeal Court ruled that police installing an electronic travelling device in the car of the accused, without authorisation, was unlawful. The movements of the car, however, constituted real evidence. It was also decided in *S v Baleka* 1986 4 SA 192 (1) that the tapes as well as the contents thereof have to be identified and that the court must be convinced that it is the original. Just as in *S v Mpumlo* 1986 (3) SA 485 (E) above, the videotapes must be treated as real evidence

instead of documentary evidence, so that evidence of the authenticity and originality would not be required for its admissibility.

2.3.3 Documentary Evidence

According to Smith (1995:83), documentary evidence is a statement made by a person in a document. It was mentioned in *Seccombe v Attorney General* 1919 TPD 270, a document is any written thing capable of being evidence. In *S v Tsapo* 1970 (2) SA 256 (T) a map was regarded as a document.

According to Schwikkard, Skeen and Van der Merwe (1997:260) there are three basic rules to be followed, before a court can rely on documentary evidence:

- The authenticity of the documents must be proved
- The original document must be available for perusal
- The contents of the documents must be relevant to the facts

2.3.4 Video and audio recordings

It was ruled in *S v Ramgobin* 1986 (4) SA 117 (17) that there was no difference in principle between the admission of audio and video recordings as evidence. The CCTV footage falls within the category of video recordings. The Commercial Crime Unit and Organised Crime Unit have used a lot of video and tape evidence in the past (Laura, 2001:6).

2.3.5 Computer-generated Evidence

According to De Villiers (2008:8), computer printouts are copies of the original documents which are stored in electronic form. The SAPS and the criminal justice system have always used this form of evidence. In *Narlis v South African Bank of Athens* 1973 2 SA 573 (A), South African courts refused to admit a computer printout as evidence. However, after the South African Law Commission had investigated the matter, South Africa's first specific computer legislation was accepted.

De Villiers (2008:8) makes mention of the fact that the most important function of a computer is to process and store information. The product is usually a printout in documentary form.

2.3.6 Photographs and Films

According to De Villiers (2008:6), a photograph, just like a piece of paper, is sometimes regarded as real evidence. When a photograph is, however, presented to prove what has been captured by the camera – for example, writing on a wall, to be interpreted, it comes closer being a document. A photograph is presented to prove what was recorded by the camera. Murphy (1999:387) states that a photograph introduced as identification evidence, does not constitute hearsay, but real evidence.

The question, “what are the different types of evidence?” was put to samples “A” and “C”. Participants from sample “A” reacted as follows:

- Fourteen participants were able to identify all the different types of evidence
- Two participants did not know the different types of evidence
- Nine participants were only able to identify some of the different types of evidence

Sample “C” said that oral testimony of witnesses, documentary evidence, real evidence, photographs and films; video and audio recordings and computer-generated evidence are all different types of evidence.

Although two participants from sample “A” were unable to identify the different types of evidence, the responses from sample “A” indicated that the participants were aware of the different types of evidence. This means that they were in agreement with the viewpoints of the various authors on the different types of evidence; De Villiers (2008:6), Murphy (1999:387), Laura(2001:6),Schwikkard, Skeen and Van der Merwe (1997:260), Smith (1995:83),Zeffertt, Paizesand Skeen (2003:404),Lee and Harris(2000:4), Adams et al. (2004:4), Joubert (2001:342), and Cannon andNeligan (2002:2). Sample “C” also had better understanding of the different types of evidence. The researcher is of the opinion that the participants from samples “A” and “C” were in agreement with literature.

The question was not put to sample “B” because they are garage owners and do not have a legal background.

2.4 PHYSICAL EVIDENCE

Swanson et al. (2003:33 & 277) explain that at all stages of handling evidence, the chain of custody, or control of it, must be established. The chain of custody is the witnessed, unbroken, written chronological history as to who had the evidence when, ensuring the integrity of the evidence by establishing and maintaining a chain of custody, which is vital to the investigation.

Layman (2002:143) states that evidence that has been collected must be safeguarded until the time that the case goes to court. If, during the trial, it is determined that labels are missing or has been altered, the evidence may be considered inadmissible, and the case might be thrown out of court. According to Brown (2001:89), the rules of evidence require that any evidence be presented to a jury in substantially the same condition in which it was found. This obliges the officer collecting evidence to establish the chain of custody. Lee and Harris (2000:268) explain that a proper record should be kept concerning the chain of custody. Gilbert (2004:105) explains that when evidence is found at the scene, the investigator must be able to account for it.

Accounting responsibility begins when the item is first located, and does not end until the evidence reaches the courtroom. Being able to account for the location and possession of evidence is known as “maintaining the chain of custody” (Gilbert, 2004:105). This accountability procedure is very important, for if a break in the chain occurs, the item will not be admitted as evidence in court. By following strict accountability procedures, the chain of custody remains intact.

According to Marais (1992:15 & 16), continuity of possession is the continuous safekeeping and identification of physical evidence and is essentially important in the individualisation of a particular sample. Individualisation indicates that a disputed object found at the crime scene, and the standard of comparison, are of the same origin. When the crime investigator fails to properly identify or safe keep the samples, this lowers the value of laboratory analysis to a minimum. The correct methods applied during collection, marking and packaging of evidence may be

nullified if an account cannot be given of the people who handled, evaluated or safeguarded the samples.

Marais (1992:15) further explains that in order to preserve the integrity of physical evidence, adherence to the following basic guidelines is a prerequisite:

- Limit the number of people who handle the evidence from the time it was found to the time it is presented in court
- If the evidence leaves the investigator's possession, a record should be made in the investigator's notes as to whom the evidence was given, and when and by whom the evidence was returned
- Ensure that the people handling the evidence affix their names, force numbers and assignment to the package
- Obtain a signed receipt from the person accepting the evidence
- When the evidence is returned, the investigator should check for their own identification marks affixed to the item, and ensure that it is the same item
- Determine if the evidence is in the same condition as it was when it was discovered
- Any change in the physical appearance of the evidence should be brought to the attention of the court

Marais (1992:16) further explains that proof of the "chain of custody" demonstrates that:

- the evidence offered is the same evidence as that found at the scene
- there has been no opportunity to replace or improperly alter the evidence
- any change in the condition of the evidence can be explained

Van Rooyen (2001:590) points out that if a crime investigator fails to properly identify or safe keep evidence, it lowers the value of laboratory analysis to a minimum. Lee and Harris (2002:269) explain that it is also important for the investigator to ensure that the evidence is properly packaged for its safekeeping and preservation. According to Prinsloo (1996:42), the importance of maintaining the physical and

evidential integrity of samples at all times is generally acknowledged, and the practice closely observed. If any doubt arises as to the crime situation, the scene of the crime and offender, it may well render worthless all other efforts, which may comprise the judicial individualisation of an offender. Naude (1996:206) further explains that the detection, preservation and handling of CCTV footage are, for the most part, the task of the investigator.

Marais (1992:13 & 14) explains that preservation of the integrity of the evidential value of physical evidence is a continuous responsibility from the time it is discovered until the time it is presented in court. Preservation implies maintaining evidence without altering, tampering, contamination, loss or injury. The way in which it is collected and marked for identification is an essential part of preservation. In order to ensure that physical evidence is accepted in court, information concerning the location of the evidence, its condition and its connection with the crime scene, is essential. Evidence concerning the handling of physical evidence is indispensable, because the court must be convinced that the said evidence was not altered or tampered with from its collection until its presentation in court.

Preservation involves forwarding of evidence to the laboratory for examination and analysis, obtaining of evidence from the laboratory, and keeping the evidence safe under lock and key where the evidence cannot be tampered with until delivered in court. Such testimony ensures the integrity of the chain of custody.

Dempsey (2003:64) explains that it is legally required to describe the location and condition of evidence at the time it was collected, to assist in establishing that from the time of its collection until presentation in court, the evidence was continuously kept in proper safekeeping. This assists in describing any changes that may have occurred in the evidence between the time of collection and its subsequent introduction as evidence in court. CCTV footage be kept under lock until such time is needed as evidence.

Sennewald and Tsukayama (2001:143) point out that the evidence storage must be completely secured, in order to prevent the evidence from being altered, damaged or stolen. Ensuring the evidence storage integrity will keep the investigator from being

forced to explain to the judge and jury why such poorly protected evidence should be relied upon. Taking the viewpoints of the various authors, as stated above, into account, it is clear that a proper chain of custody must at all times be maintained concerning CCTV footage.

2.5 ADMISSIBILITY FOR CCTV EVIDENCE

According to Gilbert (2004:59), admissibility means that “evidence must be competent, relevant material to be rendered admissible”. Dempsey (2003:110) says “admissibility” is evidence admissible in court. According to Bennett and Hess (2001:121), the admissibility of evidence in court means that investigator is able to:

- identify the evidence as that found at the crime scene
- establish its custody from discovery to the present
- voluntarily explain any changes that have occurred in the evidence

In *S v Du Toit and others* 2005 (2) SACR 367 (1) it was contended on behalf of the accused that evidence be objected to, as the transcriptions of tape recordings were made by the state witness during the course of participant surveillance, without having been authorised thereto by a judge in terms of Section 2(2) of the Interception and Monitoring Prohibition Act 127 of 1992. The court held that Section 2(1) (a), 2(1)(b) and 2(1)(c) of the Act prohibited only third party surveillance and not participant surveillance. The court further said that the Act only applied to third party surveillance and not present matter, and the tape recordings and transcriptions thereof were declared admissible.

In *S v Kidson* 1999 (1) SACR 338 (W) the counsel for the accused contested the admissibility of the tape recording on the grounds that the monitoring and recording contravened the Interception and Monitoring Prohibition Act 127 of 1992. The police procedure infringed the accused’s constitutional rights – in particular, her right to privacy. The court held that even if the evidence had been gained in contravention of the Act, the court had discretion to admit it in the present case there had been no entrapment, and although the police may have played a trick on the accused, there

had been no disreputable or unacceptable conduct. The court accordingly rendered the evidence admissible.

CCTV evidence was first deemed to be admissible evidence in UK court proceedings in 1982 and follows the same principle as eyewitness testimony (Sheptycki, 2000:498). Schmidt and Rademeyer (2000:369-370 & 383) explain that when it is said that evidence is admissible, this means that the court must consider this evidence in settling the argument before the court. Before admission of evidence, the court should be convinced that the evidence meets all the requirements of admissibility for a specific purpose. In Schmidt and Rademeyer, (2000:383 & 384) the court came to the following conclusion that "...gebruikmaking van getuienisblybeperk tot die besonderedoel op grondwaarvandoit toegelaat word."

Nokes as quoted by Schmidt and Rademeyer (2000:387), for instance, objects to the notion that relevancy is one of the precepts according to which permissibility is determined. He states: "Relevance depends on reasoning, but admissibility depends on law, and to be received in evidence, facts must be both relevant and admissible. Admissibility denotes that there is no rule of practice by which facts must or may be excluded." Nokes further argued (as quoted by Schmidt & Rademeyer, 2000:387) that "Relevance depends on reasoning, but admissibility depends on law". This substantiates what has also been expressed in South African courts. For instance, in the case *R v Matthews* 1960 1 SA 752 (A) AB, the appeal judge Schreiner declared: "Relevancy is based upon a blend of logic and experience lying outside the law". It is true that the question as to whether evidence is relevant could be confirmed by merely establishing if the witness (being permitted) could contribute or refute the dispute. A preferable approach is to bear in mind that relevancy is one of the admissible requirements. It is a condition laid down by the law (Schmidt & Rademeyer, 2000:388).

In Schmidt and Rademeyer (2000:392), Judge Willes declared: "It may often be difficult to decide upon the admissibility of evidence, where it is offered for the purpose of establishing probability, but to be admissible it must at least afford a reasonable inference as to the principal matter in dispute"

According to Schmidt and Zeffert (1997:4), the general rule is that no evidence as to any fact, matter or thing is admissible if it is immaterial or irrelevant in all positive aspects. All facts of sufficient probative force are relevant and admissible, unless their reception is prohibited by an exclusionary rule. In the case of *S v Boesman* 1990 SACR 389 (E), it was ruled that the court has an overall discretion, based on public policy, in order to exclude evidence which will otherwise be admissible (Schmidt & Zeffertt, 1997:4). According to Schwikkard and Van der Merwe (2002:20), there are no degrees of admissibility. Evidence is either admissible or inadmissible. Evidence cannot be more or less admissible. The court weighs or evaluates evidence to determine whether the required standard or proof has been attained.

Bennett and Hess (2004:121) state that to ensure admissibility of evidence in court, one must be able to do the following: Identify the evidence as that found at the crime scene, describe exactly where it was found, establish its custody from discovery to the present, and voluntarily explain any changes that have occurred in the evidence. Palmiotto (2004:35) explains that after it has been determined that a crime was committed and a chain of custody for evidence has been maintained, the next important question is the admissibility of evidence. To be admissible, evidence must be considered material, relevant and competent. Any evidence considered not to be of sufficient value, will not be admitted. According to Swanson et al. (2003:769), one of the rules governing admissibility of evidence requires that the evidence be relevant. The evidence must have a bearing on the issues in the case being tried.

Brown (2001:50) explains that to be admissible, evidence must be relevant and it must have some probative value. The item of evidence must tend to prove a proposition of evidential value. Evidence must be legally significant to be admissible. Palmiotto (2004:35) agrees with the view put forward by Dempsey (2003:110 & 111), and explains that for evidence to be admissible, it must be considered material, relevant and competent.

South African courts are inclined to state the rule in the positive form: "All facts relevant to the issue in legal proceedings may be proved. Not all relevant evidence is necessarily admissible, unless there is some other rule of evidence which excludes it" (Schwikkard & Van der Merwe, 2002:45). Evidence which is highly relevant, even if

it happens to be the only evidence available, must be excluded where, for example, it is privileged. Relevant evidence obtained in breach of constitutional rights may also be excluded. Relevance is therefore not the sole test for admissibility. The Law of Evidence does not allow untrammelled access to all relevant evidence (Schwikkard & Van der Merwe, 2002:45 & 46).

The question, "What is admissibility of evidence?" was put to samples "A" and "C". The participants from Sample "A" answered as follows:

- Fifteen investigators said that admissibility of evidence is evidence which is relevant to a specific case to be admissible in a court of law
- Five investigators said it is evidence presented in court, and acceptable
- Five investigators said that it is evidence presented in court orally or in writing, which is admissible at the end of the day

Sample "C" maintained that admissibility of evidence is the evidence which is presented in court and accepted as true and correct facts of an incident to prove or disprove a crime.

If the answers of the participants in both samples "A" and "C" are compared to the view of Schmidt and Rademeyer (2000:369-370 and 383), *Lornadawn Investments (Pty) Ltd v Minister van Landbou* 1977 SA 618 (T) 622H, *R v Matthews* 1960 1 SA 752(A) A-B, *Hollingham v Head* (1858) 4 CB (NS) 388, 27, LJP 241, 242, 140, ER 1135, Schmidt and Zeffertt (1997:4), *S v Boesman* 1990 SACR 389 (E), Schwikkard and Van der Merwe (2002:20), Bennett and Hess (2004:121) and Palmiotto (2004:35), the understanding of admissibility of evidence by the authors above and the participants in samples "A" and "C" is the same.

The question was not put to sample "B" because they are garage owners and do not have a legal background.

If the basic rules set out by Schwikkard, Skeen and Van der Merwe (1997:260) are applied on the CCTV footage then CCTV footage is a document and if answers the

admission requirements it can be presented as evidence. In this research, 14 of the case dockets in which CCTV footage was used were admitted in court.

2.6 LEGAL REQUIREMENTS FOR CCTV FOOTAGE AS EVIDENCE

According to Murphy (2007:130), the major concern is the lack of regulation in the use of CCTV cameras. At the moment, depending on the area, the screens could be viewed by police or, more usually, by civilians, police employees, council members and private security firms. There should be no limit on how long the tapes can be held and no statutory restrictions on who is allowed to view them (Murphy, 2007:132). The erosion of privacy was reduced by government in legislating in this area and put restrictions to accessing of tapes by taking sensible measures to operate cameras (Murphy, 2007:131). Sheptycki (2000:501) says there was no statutory basis for the systematic legal control of CCTV surveillance over public places in UK until 1 March 2000.

According to Laura (2001:9), 53% of survey respondent agencies indicated they had no formal written guidelines or policies to govern the use of CCTV. Many expressed the need for model policies and guidelines to assist jurisdictions in their use of CCTV.

Nouwt, De Vries and Prins (2005:332) said that the use of CCTV in public places or in a criminal investigation is not generally accepted in Canada. When camera surveillance is used by a government organisation, it falls under the Canadian constitution.

Safir (2003:120) said as a response to 'September 11' and the need for more effective surveillance, the Patriot Act became law in October 2001 in the United States. The Act incorporates legislation that was thrown out in the past when it was presented in Congress as part of the Foreign Intelligence Surveillance Act 1978 (FISA), the Electronic Communication Privacy Act, 1986 (ECPA) and the Communications Assistance for Law Enforcement Act 1994 (CALEA). It was not found until September 11 that the legislation modifies over fifty of FISA's statutes that refer to immigration and money laundering. Criminal – and mostly government –

surveillance was now portable enough to both parties. Safir (2003:121) further says that the Patriot Act expands the Electronic Communication Privacy Act (ECPA) which was put in place to cover beepers and electronic surveillance, to give law enforcement access to information. In a South African perspective Joubert (2010:362) says that the provisions of Electronic Communication Act, 2002 (ECA) govern the admissibility of data or information from the electronic communications transaction.

The question, "What are the legal requirements for CCTV footage as evidence?" was put to Sample "A" and Sample "C". Sample "A" answered as follows:

- Fifteen investigators said that the Monitoring and Interception Act 70 of 2002 is the one to be used all the time, in order to gather evidence by means of CCTV footage
- Five investigators said that CCTV footage can be used as evidence without the application of any law
- Five investigators said that there is not sufficient law governing the usage of CCTV footage as evidence

Sample "C" said that CCTV footage needs to be implemented correctly if used in any investigation as an investigation technique. There are very limited statutes governing the utilisation of CCTV footage as evidence.

Based on experience, the researcher tends to agree with the literature, in that there is a lack of legislation regarding CCTV usage and disagrees with the feedback from the sample of investigators who made mention of Section 18 of Act 70 of 2002 – the Interception and Monitoring Act, as this research is based on conventional investigation techniques.

The question was not put to sample "B" because they are garage owners and do not have legal and policing background.

2.7 ADMISSIBILITY REQUIREMENTS OF CCTV AS EVIDENCE

The ideal approach is that relevance is one of the admissibility requirements. It is a legal requirement (Schmidt & Rademeyer, 2000:388). The first requisite of legal relevance is that evidence has to be conducive to rational persuasion. This means that evidence must have some logical relevance. A decision on some relevancy of evidence in that particular case will depend, firstly, on whether the evidence is capable of inducing rational persuasion. This means that evidence must have some logical relevance and, secondly on whether there are any legal rules or consideration of policy that would lead to its rejection as being legally irrelevant. To be legally relevant evidence must be sufficiently relevant to warrant its being received in the circumstances of a particular case. The concepts involve the idea that it has to be worthwhile to admit the evidence. To determine whether evidence is relevant its value as evidence has to be considered (Schmidt & Zeffertt, 1997:5-6).

Schmidt and Rademeyer (2000:388) explain that it is true that the relevance requirements are always regarded as the general rule for the admissibility of relevant evidence. In other words, relevant evidence is admissible unless there is some other rule of evidence which excludes it. The fact is that if evidence is irrelevant, it is inadmissible and therefore has relevant relation to admissibility. The view of Nokes (in Schmidt & Rademeyer, 2000:388) is that “relevance depends on reasoning, but admissibility depends on law”. This comes to the fore in a view uttered in the South African courts in the case of *R v Matthews* 1960 1 SA 752 (A) AB. The appeal judge Schriener, who was concerned with the case, for example stated: “Relevance is based upon a blend of logic and experience lying outside the law.”

Schwikkard and Van der Merwe, (1997:42-45) explain that relevance is a matter of degree and is certainly easier to identify in practice than to describe in the abstract. It would be wrong to accept or assume that evidence is admissible simply because of its logical relevance. Relevance cannot be decided upon in vacuity. The nature and extent of the factual and legal dispute must be considered. There must at least be some advance indication that the evidence, if received, would be of reasonable assistance to the court in the exercise of its ultimate fact-finding duty. It should be

borne in mind that the admissibility of evidence is in principle determined with reference to its relevance (Schwikkard & Van der Merwe, 2002:20).

The question: "What are the admission requirements for CCTV as evidence?" was put to both sample "A" and "C". They responded as follows: Sample "A" responded as follows:

- Four participants said CCTV admission requirements must explain the relevancy of evidence directly to the matter under consideration
- Five participants said that CCTV admission requirements have to share light on the issues involved in the case
- Three participants said CCTV admission requirements must be of legal in nature in order to cover factual and legal disputes
- Thirteen participants did not have knowledge about the admission requirements of CCTV

Sample "C" said CCTV admission requirements must be relevant and probative value like any other evidence.

The fact that not all participants from sample "A" were aware of the admission requirements for CCTV revealed that the participants in this sample were confused regarding the admission requirements for CCTV as evidence. It is evident to the researcher that not all investigators are conversant with the requirements to secure CCTV as evidence at the scene of crime. Sample "C" is in agreement with literature Brown (2001:50) saying that admission requirements for CCTV must be relevant.

The question was not put to sample "B" because they are garage owners and do not have legal background.

2.8 CLOSED CIRCUIT TELEVISION

CCTV may be briefly discussed as a television system wherein signals are not publicly distributed and images are not broadcast. Instead, such images are transmitted from cameras to particular monitors serving a limited area (Hector,

2005:76). According to Haggerty and Ericson (2005:5), CCTV is a telling example of the assemblage qualities of surveillance. CCTV is often referred to as a single entity, but is actually comprised of multiple agendas.

According to Sheptycki (2000:499), the United Kingdom had more public-based CCTV schemes than any other advanced capitalist nation. By the end of the century, the country was expected to have comprehensive coverage of every metropolitan city centre. The London Underground alone deployed more than 5000 CCTV cameras, and in 1995 London installed 10,000 new cameras, unlike in South Africa Middelburg Mpumalanga where this research is focused on. Very limited numbers of CCTVs are installed even in big metropolitan cities (Sheptycki, 2000:279).

The question, "What is closed circuit television?" was put to samples "A" and "C". Sample "A" responded as follows:

- Four investigators said closed circuit television is equipment used by business people to monitor their employees not to steal from them
- Five investigators responded by saying that CCTV is a valuable tool for investigation, if used accordingly by investigators
- Eleven investigators said that CCTV is an investigation aid
- Seven investigators said that they did not know or understand the work of CCTV in relation to investigation of crime
- Two investigators said that CCTV can assist the police in the reduction of crime, particularly in the city centres

Sample "C" said that the CCTV is vital equipment, and if used correctly by investigators, might provide evidence in court just like eyewitnesses.

The prosecutor was in line with Sheptycki (2001:499), in that CCTV can provide evidence as good as eyewitnesses. Honess and Charman (1992:3) argue that there is little public opinion on CCTV; even investigators of crime had little knowledge about CCTV. Most of the literatures consulted are foreign, as there are limited sources in South Africa.

The question was not put to sample “B”.

2.9 CCTV FOOTAGE

Sheptycki (2001:498) says CCTV footage is the use of video cameras to transmit a signal to a specific place, on a limited set of monitors, though it may employ point to point, point to multi point, or mesh wireless links. Almost all video cameras fit this definition, the term is most often applied to those used for surveillance in areas that may need monitoring such as banks, casinos, airports, military installations and convenience stores, is often called CCTV footage. Haggerty and Ericson (2005:7) define CCTV footage as the amount of data stored and the retention period of the video or pictures.

2.10 CHAIN OF EVIDENCE OF CCTV FOOTAGE

Palmiotto (2004:34) defines chain of custody as to trace the possession of the evidence from the moment the investigator gains control of it until its submission in court. Dempsey (2003:64) describes chain of custody as “the identification and control of evidence from the scene until is entered into evidence in court”. Van Rooyen (2001:57) explains the chain of evidence as the safekeeping of exhibits until it is presented in court.

During the research the researcher noticed that the authors consulted use both the concepts “chain of custody” and chain of evidence”. From what has been established in the research it is realistic to accept that there is no difference between the two concepts, as both deals with the handling and safekeeping of exhibits from the scene until it is presented in a court of law.

Laura (2001:10) states that there are two questions raised about handling of evidence, as follows:

- Was the chain of custody of the evidence maintained?
- Could the tape have been tampered with, edited, or taken home by anyone along the chain?

Involvement of non-police personnel in maintaining and operating the CCTV systems could compromise the effectiveness of the evidence in court. Implementation of strict policies and procedures will often mitigate these concerns (Laura, 2001:11).

According to Murphy (1999:383), when closed circuit television surveillance becomes employed as a crime control technique, the footage generated by security cameras will, in turn, become a progressively important source of evidence, on the same basis as photos and tape recordings. Once again, the authenticity and provenance of the recording must be established if the original recording is not available. A copy must be kept under lock, and be controlled by one person to keep the chain of evidence intact; however, the authenticity of the copy must be proved (Cannon & Neligan, 2002:57). Gras (2004:220) says that as far as privately owned property is concerned, the ability to film and survey using CCTV, is far reaching, and recordings made will, in turn, be admissible in court. Even illegally made recordings may well be considered to be evidence, as long as the chain of evidence is maintained.

Where it is possible, video recordings and photographs must complement surveillance reports. The date and time should always be indicated on such footage, and state who was in control of the video or the photograph, whether it was under lock or not, and prove that the chain was not tampered with. A picture alone is worth a thousand words (Van Rooyen, 2008:259). It was ruled in *R v Birmingham* (1992) SACLR 117, that the accuracy, quality and security in the collection of images should be considered.

According to Evans and Stagner (2003:7), judges in bench trials and jurors in jury trials are obligated to decide cases on the evidence that is presented to them in court. Neither judges nor jurors may conduct their own investigations into the underlying facts of a given case. In fact, state and federal court rules prohibit judges and jurors from being swayed by, or even taking into consideration, extrajudicial evidence—that is, evidence that is not properly admitted into the record pursuant to the rules of evidence—in rendering their decisions. Similarly, parties to civil and criminal litigation depend on judges and juries to impartially weigh the evidence, and

only the evidence, that is properly admitted into the record. Every day, across the United States, litigants stake their reputations, livelihoods, bank accounts, homes, personal property and freedom on the premise that the outcome to their judicial proceedings will be one that is reached fairly and justly, according to the evidence. Court-rendered judgments and jury verdicts that are based on tainted, unreliable or compromised evidence would undermine the integrity of the entire legal system if such outcomes became commonplace. One way in which the law tries to ensure the integrity of evidence is by requiring proof of the chain of custody by the party who is seeking to introduce a particular piece of evidence (Swanson et al., 2003:33).

The question, “How do you maintain the chain of evidence with CCTV footage?” was put to sample “A” and sample “C”. Sample “A” responded as follows:

- Six investigators said CCTV footage need[s] to be preserved according to chain of evidence requirements, if used as evidence
- Three investigators said it is very rare to get CCTV footage to be admissible in court as evidence, because of the incorrect way of handling
- Five investigators stated that it is important to maintain the chain of evidence, as the court needs to know who dealt with the evidence
- Four investigators said CCTV footage is an important source of evidence not easily disputed by the defence
- One investigator said CCTV footage need to be supported by a statement
- Six investigators said CCTV footage should be safeguarded against mutilation or damage. Footage should be removed with gloves to avoid contamination and should be sealed with [an] exhibit bag

Sample “C” said that the chain of evidence is important, in order to lead the admissibility of CCTV footage in court; an incorrect way of handling CCTV footage weakens the case. As it helps to prove the case beyond reasonable doubt, it is important for the chain of evidence to be maintained all the time.

The question was not put to sample “B” because they are garage owners and do not have legal background.

Samples "A" and "C"'s answers were compared with the views of Sennewald and Tsukayama (2003:64), Palmiotto (2004:34) and Bennett and Hess (2004:92), and there seemed to be no difference.

2.11 REQUIREMENTS FOR KEEPING THE CHAIN OF EVIDENCE

Proof of a chain of custody is required when the evidence that is sought to be introduced at trial is not unique or where the relevance of the evidence depends on its analysis after seizure. A proper chain of custody requires three types of testimony: (1) testimony that a piece of evidence is what it purports to be; (2) testimony of continuous possession by each individual who has had possession of the evidence from the time it is seized until the time it is presented in court; and, (3) testimony by each person who has had possession, that the particular piece of evidence remained in substantially the same condition from the moment one person took possession until the moment that person released the evidence into the custody of another (for example, testimony that the evidence was stored in a secure location where no one but the person in custody had access to it) (Evans & Stagner, 2003:9).

Gilbert (2004:104) says that proving the chain of custody is necessary to "lay a foundation" for the evidence in question, by showing the absence of alteration, substitution or change of condition. Specifically, foundation testimony for tangible evidence requires that exhibits be identified as being in substantially the same condition as they were at the time the evidence was seized, and that the exhibit has remained in that condition through an unbroken chain of custody. For example, suppose that in a prosecution for robbery where CCTV footage was used as evidence, police sergeant "A" recovers CCTV footage from the garage owner; "A" gives police officer "B" the footage; "B" then gives the footage to police scientist "C", who conducts an analysis of the footage; "C" gives the footage to police detective "D", who brings the footage to court. The testimony of "A", "B", "C", and "D" constitute a "chain of custody" for the footage, and the prosecution would need to offer testimony by each person in the chain to establish both the condition and identification of the evidence.

2.12 SUSPECT

In *S v Sibanyoni* 1997(1) SACR 626(W) the court made an incidental remark that it would appear that a suspect is one about whom there is some apprehension that they may be implicated in the offence under investigation, and, it may further be, whose version of events is mistrusted or disbelieved. According to Bennett and Hess (2001:139), a suspect is a person considered to be directly or indirectly connected with a crime, either by an overt act or by planning or directing it. The detective learning programme module of the South African Police Service (1997:6) states that a suspect is a person suspected of having been involved in, or committed an offence.

The question, “What is a suspect?” was put to samples “A” and “C”. Sample “A” responded as follows:

- Nine investigators said a suspect is a person suspected to have committed a crime, whether arrested or not
- Five investigators said it is a person suspected of having committed a crime and that person must not have been charged yet
- Six investigators said it is any person arrested, not charged
- Seven investigators said it is a person who is suspected of having committed a crime, and pointed out by victims, witnesses and/or informers
- Three investigators said it is a person alleged in a criminal activity

Sample “C” responded that a suspect is any person suspected of having committed an offence and/or a person arrested but who has not yet been formally charged.

Bennett and Hess (2001:139) and National Instruction 1/2007 (SAPS 2007:4) on tracing of suspect, in conjunction with *S v Sibanyoni* 1997(1) SACR 626(W), are in agreement that a suspect is one about whom there is some apprehension that they may be implicated in an offence. The samples mentioned a suspect as a person suspected to have committed a crime, a person arrested but not yet charged, and a

person alleged to have taken part in a criminal activity. The samples understood what a suspect is and they had the same understanding.

The question was not put to sample “B” because they are garage owners and do not have legal and policing background.

2.13 TRACING OF SUSPECTS

According to the South African Police service (SAPS) Training Manual for detectives (2009:2), tracing means to locate and/or endeavour to follow a person who committed an offence, with the intention to arrest them. Successful crime investigation thus does not only mean the identification of the offender, but also the tracing of the offender.

The South African Police Service (SAPS) Training Manual for detectives (2009:3) stipulates the resources for tracing as follows:

- Police sources of information
- Public sources of information
- Family and circle of friends
- Banks and financial institutions
- Government departments

2.14 SUMMARY

From the discussion in this chapter it is clear that surveillance is an important technique in investigation. The evidence of surveillance is admissible in a court of law, if collected and preserved lawfully. The different types of surveillance play an important part in providing proper guidance to the investigators of crime, in differentiating between the types of surveillance they are dealing with. There is no difference between forensic investigation and criminal investigation. All investigators must be familiar with the objectives of the investigation process as to enable investigators to conduct successful and effective investigations.

Evidence is of enormous value in a court of law during presentation. The value will, however, be determined by what has happened to the evidence after it has been collected. The evidence must not lose its value and integrity after collection because of improper handling. There must be a proper maintenance of chain of evidence, from the time it was collected until presented in court. The maintaining of a proper chain of evidence will ensure admissibility of evidence in court.

In the next chapter, the researcher discusses the chain of evidence in CCTV.

CHAPTER 3

HOW SHOULD CCTV FOOTAGE BE USED AS SURVEILLANCE TECHNIQUE IN THE INVESTIGATION OF ROBBERIES

3.1 INTRODUCTION

The present chapter assesses the value of CCTV as a surveillance technique in the investigation of crime. Closed circuit television (CCTV) cameras are now a common sight on public highways and in shopping malls. As the number of systems has increased, so has their technological sophistication. However, little is known about public opinion of CCTV or, indeed, about how the systems are used by those who install them (Honest&Charman, 1992:3).

Closed circuit television (CCTV) surveillance has become a commonplace feature of the urban landscape. Nevertheless, the spread of CCTV has not met with wholehearted approval – at least in part, because there is a perception that this form of surveillance is subject to inadequate controls (Murphy, 2007:129). In this chapter, the value of CCTV in tracing and identifying suspects is examined.

Various forensic investigation techniques are used during the investigation of crime, which includes the lawful tracing of people and exhibits (Dowling, 1997:1). It involves observation and inquiry in order to obtain factual information about allegations, circumstances and associations (Marais & Van Rooyen, 1994:13). The investigator must have specialised knowledge of investigation (Van Niekerk, 2000:12). For example, the investigator will utilise CCTV to trace and identify suspects.

This chapter also addresses the correct procedures to follow in gathering CCTV evidence to be admissible in court.

3.2 CRIMINAL INVESTIGATION

According to Du Preez (1996:1), criminal investigation is a systematic search for the truth, with the primary purpose of finding a positive solution to the crime with the help of objective and subjective clues. For Van Heerden (1985:188), criminal investigation is objective clues as the factual proof and objective explanation, which is the so-called indirect or circumstantial evidence.

Marais (1998:3) defines criminal investigation as a process of collecting information during different phases:

- Reporting
- Collecting
- Arresting

In this process, information originates mainly from two sources – namely, people and objects.

Van Heerden (1985:187) says criminal investigation is the gathering of information and facts, and must be conducted in a lawful way, so that the evidence which is presented will indeed be admissible as evidence. Marais and Van Rooyen (1990:217) describe crime investigation as the systematic search for the truth on the basis of objective and subjective traces.

The authors mentioned above do share the same definition of criminal investigation as, basically, the systematic search for the truth. The researcher agrees with the authors, as criminal investigation is the means to put together the facts or information with the endeavour to solve a crime already committed.

The question put to sample “A” and sample “C” was: “What is criminal investigation?” Sample “A” responded as follows:

- Two investigators said it is a legal process of gathering evidence.
- Five investigators said it is thinking and reasoning of facts gathered in order to prove a case.

- Twelve investigators said that it is the gathering of information and facts in a legal way.
- Six investigators said that it is the gathering of information and facts in a legal way from people, or objects such as physical evidence.

Sample “C” said that criminal investigation is the gathering of information and facts to build evidence in a case where crime has been committed.

The samples had vast knowledge of what criminal investigation is and are in line with the literature. They may have described it in a different manner, but with the same meaning, as all mentioned that it has to do with a search of the truth and presenting the case in court. The researcher agrees with all the participants mentioned in relation to the above authors.

The question was not put to sample “B” because they are garage owners and do not have legal background.

3.3 FORENSIC INVESTIGATION

Erzinclioglu (2004:14) defines “forensic” as a technique of reconstruction of the past, whether that past is of legal interest or not. The practice of forensic science is not just the application of a set of laboratory techniques; it is an attitude of mind, a tendency to think in a particular way, or being willing to question the unquestioned.

Tulloch (1993:585) describes “forensic” as being in connection with the courts of law. Olivier (2003:3) defines investigation as the discovery of the relevant facts, the making of inferences from these facts, the gathering of relevant information from those who are involved and claim to have knowledge of the incident under investigation, the construction of the crime scene, and the identification and apprehension of the accused.

Brown (2001:3) defines investigation as a “legal process of gathering evidence of a crime that has been committed”. According to Palmiotto (2004:6) investigation is “a

thinking and reasoning process primary objective of investigation is to gather facts about a criminal situation". The *Oxford dictionary of current English* (2005:25) defines "forensic" as relating to, or devoting the application of scientific methods and techniques to, the investigation of crime.

Investigation is defined differently by the above authors. Olivier (2003:3) just mentions the discovery of relevant facts, while Brown (2001:3) mentions the legal gathering process. The researcher is of the opinion that Olivier omits to mention whether the discovery is of a legal in nature or not.

The question, "What is forensic investigation?" was only put to sample "A" and sample "C". Sample "A" responded as follows:

- According to five investigators, forensic investigation is a process to collect physical evidence at the crime scene
- Seven investigators said it has to do with laboratory investigation
- One investigator regarded forensic investigation as the scientific analyzing of evidence for presentation in court
- Nine investigators said forensic investigation assists courts in proving cases in a scientific way
- Three investigators said it is comparing the disputed samples or exhibits in a scientific manner

Sample "C" said forensic investigation is scientific proof of any evidence or object in dispute and has to do with investigation technique, for example "surveillance". Participants from sample "A" and "C" had their own definitions of the concept "forensic investigation" and had the same interpretation, by saying that forensic investigation has to do with scientific analysis of evidence to be presented in court. If the answers of the participants are compared with the viewpoints of the different authors, there is no difference, which means that they are in agreement that the concept of "forensic investigation" is the application of scientific techniques on evidence through analysis.

The question was not put to sample “B” because they are garage owners and do not have legal background.

3.4 THE DIFFERENCE BETWEEN FORENSIC AND CRIMINAL INVESTIGATION

Tulloch (1993:339) defines “criminal” as involving or concerning crime. Olivier (2003:3) defines “investigation” as the discovery of the relevant facts, the gathering of relevant information from those who are involved and claim to have knowledge of the incident under investigation, the construction or the preparation of the case for prosecution and trial of the accused. Erzinciloglu (2004:14) defines “forensic” as a technique of reconstruction of the past, whether that past is of legal interest or not. The practice of forensic science is not just the application of a set of laboratory techniques; it is an attitude of mind, a tendency to think in a particular way, or being willing to question the unquestioned

The question, “What is the difference between forensic and criminal investigation?” Was put to sample “A” and sample “C”. Sample “A” responded as follows:

- Fifteen investigators said they don’t know the answer
- Seven investigators said that there is no difference between forensic and criminal investigation
- Three investigators said that forensic and criminal investigation has to do with investigation of crime in analysing evidence and exhibits

Sample “C” said the difference is not visible; they are almost the same as they have to do with analysing of evidence and exhibits.

The responses of 15 participants from sample “A” indicated that they do not know the difference between forensic investigation and criminal investigation, however, all other participants in sample “A” mentioned that forensic and criminal investigations are relatively new, involve the corporate investigation sectors, which indicates that they are aware that during forensic investigation science is applied to analyse evidence and exhibits. If the answers of the participants are compared with the viewpoints of the above mentioned authors, including the respondent in sample “C”

there is no difference, which means that the respondents are in agreement concerning the two concepts “forensic investigation” and “criminal investigation.” As from this point the researcher only uses “investigation,” which includes both concepts.

The question was not put to sample “B” because they are garage owners and do not have legal background.

The above discussions pointed out that forensic investigation and criminal investigation are the same. In this research, referring to the one includes the other.

3.5 ROBBERY

According to Snyman (2008:517), robbery consists in the theft of property by unlawful and intentionally using:

- violence to take the property from somebody else or
- threats of violence to induce the possession of property to submit to the taking of property

Burchell (2006:817) describes robbery as consisting in the theft of property by intentionally using violence or threats of violence to induce submission to the taking of it from another.

3.5.1 Elements of robbery

Burchell (2006: 818) states elements of robbery as follows:

- theft
- violence
- submission
- intention

Snyman (2008:517) says the elements of robbery are:

- the theft of property
- through the use of violence and taking the property
- unlawfulness

- intention

3.5.2 Forms of robbery

Joubert (2001:129) is of the opinion that robbery consists of the following forms:

- aggravated robbery
- common robbery
- car hijacking
- bank robbery
- robbery of cash in transit
- robbery at residential premises
- robbery at business premises

3.6 OBJECTIVES OF INVESTIGATION

Becker (2000:8) names the goals of investigation as follows:

- Locating and identifying suspects
- Crime detection
- Arresting perpetrators
- Recovering properties
- Preparing for trial
- Convicting the defendant

Gilbert (2004:38) says that when crime is investigated, it will bring the following results:

- Where, what time and date did the crime occur?
- Who were the individuals involved?
- Did a criminal violation occur?
- Was there any witness present?
- Is there an indication of guilt or innocence to aid judicial officials in determining a just solution to the case at hand?

Becker (2000:8) defines goals of an investigation as to determine if there is enough factual evidence to support or defeat each element of causes of actions, and accumulating the necessary factual evidence to prove or defeat a case at trial.

Du Preez (1996:6) describes the objectives of investigation as follows:

- Identification of crime

This concerns situation identification, the type of crime committed, and what kind of clues can possibly be collected. CCTV footage in this regard assists investigators to identify crime committed and the investigator can view the footage see what happened and identify the elements of the crime.

- Gathering evidence

Gathering of information commence from the scene of the crime and a definite distinction regarding the collecting of information can be made between direct and indirect sources of information, a witness who furnishes information concerning a crime committed in his presence is therefore providing direct information. Indirect information is physical evidence and clues. CCTV footage assists investigators to identify witnesses and ultimately obtain their statements. The clues and physical evidence can be seized through the help of CCTV, by viewing the footage the investigator can see who did what on the scene; what are the registration numbers on the vehicles involved and what touches where on the scene. The registration numbers could be followed up. Specific instructions could be given to the fingerprint experts to search for fingerprints at arrears touched on the scene as shown on the footage.

- Individualisation of the crime

The emphasis here is on the involvement of the perpetrator or alleged criminal in the act committed and based on establishing probability, from the information and facts collected, that the crime was committed by a specific person. CCTV footage can help the investigator to identify a specific suspect involved in crime, specifically at the filling stations where CCTV is installed. The process of individualization and comparisons has a twofold aim:

- to individualise positively the various objects in dispute
- to conclusively determine the criminal involvement of the object or person providing the standard of comparison.

- Arresting a criminal

Once all the relevant information and facts have been collected and the criminal has been identified, the criminal investigator can proceed to have him arrested. Once the information has been collected and followed up suspects identified through CCTV footage, the investigator proceed to arrest and place the arrested suspect on identification parade for witnesses to get the opportunity to identify the suspect.

- Recovery of stolen property

This objective of criminal investigation is of a twofold nature:

- to restrict the victims losses to a minimum
- to present the recovered property as evidential material

CCTV footage assists investigator to trace exhibits, for example on the footage the investigator can see who did what and who took what, during interviewing this could be questioned and the suspect could be confronted with the footage.

- Involvement in the prosecution process

This object is to assist the public prosecution process. The successful prosecution of criminals depends to a great extent upon skill and efficiency of those who conduct the criminal investigation. To realise these identified aims and objectives of criminal investigation, the present day criminal investigator has no choice but to turn to scientific methods of criminal investigation. CCTV footage is admissible in court as evidence if obtained and preserved procedurally.

The question: "What are the objectives of investigation?" was put to samples "A" and sample "C" only. Sample "A" responded as follows:

- Seven investigators said the objectives of investigation are to assist the police in criminal investigation
- Nine investigators said it is scientifically proven evidence to convict the defendant
- Six investigators said that the objectives of investigation provide the judge with an opportunity to apply his or her discretion in a judgment
- One investigator said it assists in recovering and identifying properties

Sample “C” said that the objectives of investigation are to provide more focus and direction to any investigation.

From the samples’ responses and the various literature consulted, it is evident that both samples “A” and “C” do understand the objectives of investigation in the same way, as something to do with investigation of crime and to identify properties including to assist the courts to arrive at a correct judgment. The viewpoints of the samples are in line with literature. Becker (2000:8) defines the objectives of criminal investigation as follows:

- Locating and identifying suspects
- Crime detection
- Arresting perpetrators
- Recovering properties
- Preparing for trial
- Convicting the defendant.

Olivier (1997:228) explains that: “Ondersoek van Misdaad is die bestevoorkomingstegniek en is ook van mening dat goeie ondersoek misdadigers afskrik. Deurdoeltreffende ondersoek, arrestasie en die bystaan van aanklaer om die saak suksesvol deur die hof te bestuur, vervul die ondersoekbeampte ‘n tersiere voorkoming rol.” The researcher understands and is in line with Olivier (1997:228) ‘s view that goals of investigation is to prevent crime, because based on his experience as a detective and later as a commander and supervisor of detectives, the researcher has found that, through effective investigation the arrested suspect will be convicted in court and sentenced. The further commission of crime by the individual will be prevented as the criminal will be in prison.

The question was not put to sample “B” because they are garage owners and do not have legal or policing background.

3.7 SURVEILLANCE

According to Buckwalter (1983:1), surveillance is the covert observation of places, persons and vehicles for the purpose of obtaining information concerning the identities of subjects. The term surveillance comes from the French word *surveiller* which derives from *sur* (over) and *veiller* (to watch); literally, it means to 'watch over' (Buckwalter, 1983:3).

Tyska and Fennelly (1999:165) define surveillance as a secretive and continuous watching of persons, vehicles, places and objects, to obtain information concerning the activities and identities of an individual or conditions. Van Rooyen (2001:99) defines surveillance as the careful and continuous watching of something or someone, carried on in a secretive or discreet manner, in order to obtain information on a subject.

All the above authors agree that surveillance has to do with watching in a secretive manner, with the aim of obtaining or gathering information. Tyska and Fennelly (1999:164), further say that the effort begins with determining just what one's objectives are for conducting surveillance, as surveillance is a way to find an individual by watching his or her associates and friends. When seeking detailed data about a person's activity, there is no better method than to use frequent surveillance.

Murphy (1999:386) says the practice of surveillance is, to some extent, an art, as an effective investigator requires a vision, knowledge of the theory of surveillance, and skills. However, this provides no guarantee that the investigator will apply the vision and knowledge satisfactorily.

To the question put to the samples "A" and "C", "What is Surveillance?" Sample "A" responded as follows:

- Two of the investigators said they did not know what surveillance was and they had not used it in the past

- Six investigators said it is a method to apply in obtaining information covertly or undercover
- Five investigators said it is a method used only by Crime Intelligence
- Another five investigators said it is a method which, if used correctly by all investigators, can assist in solving all the difficult cases reported, by means of detecting the perpetrators
- Seven investigators said it is an investigation aid

Sample “C” said that surveillance could be used to assist the police in identifying and tracing offenders, and sometimes may assist to corroborate evidence.

The participants in sample “A” and “C” understand the definition of the concept “surveillance” they had the same understanding that surveillance is a technique to be used in the investigate crime. If the responses of the participants are compared with the viewpoints of different authors, Buckwalter (1983:1), Tyska and Fennelly (1999:165), Van Rooyen (2001:99), and Murphy (1999:386), there is no real difference, except two participants from sample “A” which did not know what surveillance is.

The question was not put to sample “B” because they are garage owners and do not have legal and policing background.

The researcher selected first 50 case dockets where CCTV was used as surveillance technique out of 1599 in the Middelburg Police Station archives for the period 2008/2009.

3.8 PURPOSE OF SURVEILLANCE

O’Hara and O’Hara (2003:228) define the purpose of surveillance as the requirements of surveillance, including gathering more facts to verify either information already received, or evidence. Jones, Hillier and Turner (1997:35) define the purpose of surveillance as “the exploring role of CCTV surveillance.”

Jones et al. (1997:36) say that surveillance is introduced, in the belief that it will achieve the following objectives:

- Detect criminal and disruptive groups from intimidating the public
CCTV footage at filling stations could put the images of criminals and can assist in detecting them
- Reduce organized crime, especially where there is a high level of shoplifters pickpockets, drug dealers and robbers
CCTV footage when used as evidence could reduce organized crime
- Detect antisocial and public order offences
CCTV footage can be used to identify suspects and vehicles by means of recording their registration numbers
- Help to convict offenders
CCTV footage could be used in criminal cases if it is admissible in court
- Detect or prevent crime
CCTV footage at filling stations could assist in preventing or detecting crime as criminals always avoid committing crime at filling stations fitted with CCTV
- Recover stolen properties
CCTV footage at filling stations always helps to identify properties stolen or robbed during the commission of a crime
- Verify statements made by witnesses or informants
CCTV footage corroborates evidence with eye witnesses
- Intercept criminals in the act of crime
CCTV footage could assist police at the scene in intercepting criminals while committing crime
- Obtain information to use in interrogation
CCTV footage could assist police in obtaining information from possible eye witnesses and informers observed at the scene
- Develop intelligence
CCTV footage could enhance intelligence capacity
- Learn about various contacts and associates of particular suspects

The question, "What is the purpose of surveillance?" was put to Sample "A" and Sample "C". Sample "A" responded as follows:

- Three investigators said it is to corroborate with witnesses
- Nine investigators said the purpose of surveillance is to assist police to prevent and to detect crime
- Seven investigators said that the purpose of surveillance is more like the goals of surveillance, and has to do with helping police in various methods in addressing crime
- Four investigators said it is to develop intelligence
- Two investigators said it is to reduce organised crime

Sample “C” said that the purpose of surveillance is to “beef up” investigation of crime.

The sample of investigators stated that the purpose of surveillance is more like the objectives of surveillance, which has to do with investigation of crime, while the prosecutor mentioned the purpose of surveillance as being a method to help police investigations. Both samples correspond with the literature about the purpose of surveillance. Jones et al. (1999:36) outline the purpose of surveillance as:

- to help convict offenders
- to obtain information
- to detect anti-social and public order offences
- to detect criminal and disruptive groups

3.9 DIFFERENT TYPES OF SURVEILLANCE

According to Buckwalter (1983:4), there are three types of surveillance, as mentioned below:

- Fixed or stationary surveillance
- Mobile or moving surveillance
- Undercover surveillance

3.9.1 Fixed or stationary surveillance

Fixed or stationary surveillance uses a single location from which surveillance operates and observes the target or subject or the surveillor (Berg & Horgan,

1998:87). The location may be a room, office, storeroom, van, or a truck; that is the reason fixed surveillance is sometimes called a plant (Buckwalter, 1983:129). O'Hara and O'Hara (2003:129) describe fixed surveillance as surveillance of places.

3.9.2 Mobile or moving surveillance

According to Berg and Horgan (1998:188), mobile or moving surveillance is complex and it is difficult to follow tail or shadow a suspect in a moving surveillance. Further, the authors say that this type of surveillance is not cost effective, because more officers, vehicles, extensive planning and communication systems are required, in line with the number of pedestrians and the amount of traffic and road congestion.

3.9.3 Undercover surveillance

According to O'Hara and O'Hara (2003:128), undercover surveillance needs a variety of sophisticated devices to enhance the senses of sight and hearing. Buckwalter (1983:4) says that undercover surveillance is technical surveillance.

The three authors complement each other in terms of describing the abovementioned three types of surveillance. The difference is there, but very minimal. O'Hara and O'Hara (2003:128) describe moving or mobile surveillance as tailing or shadowing surveillance.

The question put to the samples was: "What are the different types of surveillance?"

The question was put only to samples "A" and "C". Sample "A" answered as follows:

- Ten investigators said there are three types of surveillance: fixed, moving and undercover surveillance
- Two investigators said they did not know the different types of surveillance
- Three investigators said the same as the above ten except on undercover surveillance, as they referred to it as technical surveillance and can be used regularly as surveillance technique to investigate crime
- One investigator said that moving surveillance is tailing surveillance
- Nine investigators said that all three different types of surveillance add value to the investigation of crime as a surveillance technique, more particularly to robbery cases at filling stations

Sample “C” said that the different types of surveillance depend on the type of investigations conducted and how often do investigators use the three types of surveillance as a technique in the investigation of robbery cases at filling stations.

The fact that not all the participants from sample “A” were aware what the different types of surveillance are, it is evident to the researcher that not all investigators are trained in this regard. Although a large number of participants of sample “A” know the different types of surveillance. In comparing the viewpoints of the large number of participants in sample “A” and sample “C” with literature, O’Hara and O’Hara (2003:128) and Buckwalter (1983:4) there is no difference. The researcher is of the viewpoint that investigators did not apply surveillance as a technique, at the crime scenes of robbery cases at filling stations.

The question was not put to sample “B” because they are garage owners and do not have legal and policing background.

3.10 IDENTIFICATION

“Identification” is derived from the Latin word ‘idem’, which means “the same” (*Concise Oxford dictionary of current English*, 2002:05). Erzinclioglu (2004:83) says that the first attempt to identify people on a rational, scientific basis was developed during the second half of the 19th century by the French forensic scientist Alphonse Bertillon. However, Horswell (2004:6) submits that the process of identification of any object is one of establishing the fact that it belongs to a large-scale group or class, supported by the idea of Lee and Harris (2002:12). Identification is the process of using class characteristics to identify a particular object. It is further simplified by Fisher (2000:7), who submits that identification means that items with same properties share a common source, and can be classified or placed into groups or a class of particular persons, but is analysed and tracked back to a specific group or class of material (Gardner, 2005:23). In identification, it does not matter how much testing is done on the piece of material; the conclusion will always be the same: the results cannot be attributed to one unique source, but rather to a group or class with similar characteristics (Fisher, 2004:9).

“Characteristic” means the international uniqueness or design of features that would be common to a family or particular group of items (Doyle, 2003:2; Horswell, 2004:6).

The question, “What is identification?” was put to samples “A” and “C”. Sample “A” responded as follows:

- Five investigators said identification is to identify something you have seen before
- Ten investigators said it is to place something in a certain category, because it belongs together
- Four investigators said it means to identify somebody or something for what it is, and could also be done through previous experience
- Six investigators said identification is the ability to track the class of origin of a particular material, and further, that identification is to single out a particular thing out of a larger pool through the comparison of characteristics

Sample “C” said identification is to identify something you don’t see for the first time, and identification is crucial in court to ascertain the accused as the correct person who committed the offence which they are accused of.

When the responses from the investigators were compared with other sources of data, it became clear that the responses were not different from Horswell(2004:6) and Lee and Harris (2000:12), who also view identification as placing an object with others of the same characteristics. Four participants talked about singling out from a larger pool. Doubt was obviously created in terms of their understanding, as this response is not in line with the presumption that everything is unique and distinctive in that it has certain individual and class characteristics (Marais, 1992:19). The primary objective of any investigation is to locate or put together evidence which can be individualized (Fisher, 2004:9). This shows that the samples had the same understanding of the meaning of identification.

The question was not put to sample “B” because they are garage owners and do not have legal and policing background.

3.10.1 Categories of identification

According to Van Heerden (1986:195), supported by du Preez (1996:4) and Newburn, Williams and Wright (2007:303), there are different categories of identification that could be used in investigation, namely:

- Culprit identification
- Witness identification
- Victim identification
- Action identification
- Imprint identification
- Situation identification
- Cumulative identification
- Origin identification

Because of the specific focus of this research only the following categories are discussed: culprit identification, witness identification, action identification, imprint identification, situation identification and cumulative identification.

3.10.1.1 Culprit identification

Culprit identification has to deal with the positive identification of a suspect du Preez (1996:4). On the current study positive identification of the suspects was possible after the CCTV footage was viewed. The witnesses have the opportunity to identify the suspects on the CCTV footage in 4 robbery case. Suspects were positively identified in 4 out of 50 cases analysed.

3.10.1.2 Witness identification

Newburn, Williams and Wright (2007:303) are of the opinion that witness identification has to do with the investigator obtaining information about the suspect and the role he played in the commission of crime. In the 50 analysed case dockets, 14 witnesses were interviewed and their statements obtained. These witnesses were

traced by means of their vehicles registration numbers captured by CCTV footage at the scene. The Traffic Department assisted with ownership of vehicles.

3.10.1.3 Action identification

According to Lee and Harris (2000:13), many involuntary habits creep into human actions and eventually develop into personal characteristics unique to each individual. Consequently, characteristics are developed, such as invariability and uniqueness, making action identification a useful identification medium Palm (2000:4). In case of investigation of robberies at filling stations, the investigator has to try to identify the perpetrator by means of characteristics and uniqueness, particularly at the premises where CCTV is installed. The actions of the suspects at the scene – who did what? –can help the investigator to identify and trace the perpetrator by means of visiting the previous cases with similar *modus operandi*, and locate their addresses (Van Rooyen, 2001:58). Fourteen (14) of the suspects were identified in the 50 cases analysed in this research by means of CCTV footage.

3.10.1.4 Imprint identification

According to Lee and Harris (2000:14), imprint identification is based on the Locard principle. The fundamental principle of imprint identification is that distinctive characteristics of objects are transferred to the surface with which they come into contact. These imprints must be identified for what they are, and thereafter compared with those of a person or instrument (Brayer, 2000:53). Should there be sufficient corresponding marks by which the allegation can be substantiated that the specific imprint at the scene was made by a specific person or instrument (Chisum&Turvey, 2000:4).

In some cases, the connection of a person to a crime by means of an imprint is sufficient evidence (Lee & Harris, 2000:14). Imprints attempt to achieve individualization by being compared to the disputed imprints of the alleged object (Gardner, 2005:53).CCTV can be used to identify all surfaces at the scene where the suspect touched, in order to obtain fingerprints for identification of the suspect. The Local Criminal Record Centre can be approached to obtain addresses of suspects on the Criminal Record Centre system through fingerprints obtained at the scene.

3.10.1.5 Situation identification

Situation identification is used to establish if a crime has been committed and, if so, what type of a crime (Van Heerden, 1985:14; Adams, Caddell & Krutsinger, 2004). When an investigator arrives at a scene of crime, it is not always obvious what type of crime has been committed or whether a crime has, indeed, been committed or not (Gardner, 2005:71). Prior to attending the crime scene, it is of paramount importance for the investigator to obtain the best possible assessment of the circumstances relating to the incident (Horswell, 2004:8). According to Adams et al. (2004:12), investigators should know the elements of each crime that is under investigation. Situation identification relates to the crime situation, and individualises the unlawful nature of the situation (du Preez, 1996:6).

3.10.1.6 Cumulative identification

The investigator must bear in mind that the different categories, excluding what they can be used for, suggests that identification categories should be applied during the investigation of robberies. This category is the combination of all the above identification categories. The detective learning skills programme (module 9:2009) explains that the value of identification only becomes apparent when they are considered within the situation as a whole.

3.11 INDIVIDUALISATION

Individualisation is completed when the object in dispute and the standard of comparison have the same origin (Van Rooyen, 2001:58; Doyle, 2003:2; and Lee & Harris, 2000:12). Ogle (2004:6) shares the viewpoint of Van Rooyen (2001:58) by explaining that individualisation means that a conclusion is reached by the expert, that all characteristics and unique features agree, and that sufficient correlation between individual characteristics is found.

In line with the above viewpoint, individualisation therefore involves comparison, usually of the disputed object found at the scene of crime with the one of known origin obtained, for example, from the suspected crime (du Preez, 1996:6). Fisher

(2004:5) and Lee and Harris (2000:184) explain that individualisation means that an item of evidence comes from a unique source. Du Preez (1996:6) is of the opinion that individualisation simply means that a crime is individualised as the act of a person or persons.

Reality is that one does not just identify an object as such, but that one compares it with other samples of known origin, with the intention to determine individuality. Callanan (1994:1), for example, takes a face of a person by means of comparison. A witness can individualise a face as that of a specific person, on the basis of the unique features of that specific person. The practice of individualization has arisen because of comparison Van Heerden(1985:12). In the 25 cases analysed on hand, the perpetrators in 14 cases were individualised and linked to the crime by identifying their unique faces on the CCTV footage.

The question: What is individualisation? Was put to samples “A” and “C”

Sample “A” responded as follows:

- Eighteen investigators said individualisation is the using of forensic methods to identify the origin of something
- Two investigators said it is the characteristics that belong to something itself
- Five investigators said individualisation means that everything is unique to itself

Sample “C” described individualisation as something to do with forensic in order to individualise uniqueness.

The sample’s responses on the definition of individualization are in line with literature (Van Rooyen, 2001:58; Doyle, 2003:2; Lee & Harris, 2000:12; Ogle, 2004:6; Fisher, 2004:5; Lee & Harris, 2000:184; Callanan, 1994:1 and Van Heerden, 1985:12). The researcher’s viewpoint is that there is an understanding between the participants and literature of what individualisation is.

The question was not put to sample “B” because they are garage owners and do not have legal and policing background.

3.12 THE DIFFERENCE BETWEEN INDIVIDUALISATION AND IDENTIFICATION

According to du Preez (1996:6), individualisation goes beyond identification. The reason behind that is that individualisation will say this exhibit comes from this particular source and this source only, among various sources. In other words, the trace can attribute to one individual after a series of identifications (Fisher, 2004:5). Marais (1992:19) is of the same view, that identification has value in criminalities, because it means an expert would identify an object, for example, like a glass, without relating it to the surface of origin, while individuality means a piece of glass is positively compared with the surface of origin.

The question, "What is the difference between identification and individualisation?" was put to samples "A" and "C". Sample "A" responded as follows:

- Ten investigators said identification means that an object falls into a particular group, while individualisation means an object belongs to itself
- Fifteen investigators said that identification means something is similar to a specific group, while individualisation means an object similar to itself

Sample "C" regarded individualisation and identification as being close to each other and very difficult to differentiate, but there is a difference.

The participants in sample "A" and "C" agreed with the literature du Preez (1996:6); Fisher (2004:5) and Marais(1992:19) about the difference between identification and individualisation.

The question was not put to sample "B" because they are garage owners and do not have legal and policing background.

3.13 PURPOSE OF IDENTIFICATION

Adams et al. (2004:10) and Gardner (2005:351) state that the role of identification is to assist the investigator to identify the crime and how it was perpetrated, and who the perpetrator is. It was supported by the judgment in *R v Doyle* (1967) VR 6981. The court ruled that identification can be used by the police in investigation of crime, to detect and identify perpetrators.

In *S v Du Toit* 1987 3-4 B, the court found that identification serves dual purposes, as stated below:

- It is important that identification is followed by individualisation and that these processes complement each other
- It is important for evidential purpose for the court to convict or acquit correct accused

Hoffmann and Zeffertt (1988:481), say that the purpose of identification is to fairly and accurately test the ability of the witness to identify the accused suspect and to eliminate suggestion as a determining factor. The process begins the moment the witness tries to identify the suspect. Evidence is then collected and analysed, in order to link the perpetrators with the committed crime or either found guilty or acquitted in court (Van Heerden, 1986:194).

Van Heerden (1982:22) says that the main purpose of identification is to test, justly and accurately, the ability of witnesses to recognise the offender and to eliminate any possibility of suggestion as a deciding factor in identification. The viewpoint of Hoffmann and Zeffertt (1988:481) is supported by the opinion of Van Heerden (1982:22).

The question, "What is the purpose of identification?" was put to samples "A" and "C". Sample "A" responded as follows:

- Eight investigators said it is to give the witness the opportunity to identify the suspects

- Three investigators said it is to prove that the person who committed the crime is known
- Three investigators said it is to make sure that the courts do not convict innocent people
- Two investigators said that it is to make sure that the suspect has been seen by the witness during the commission of crime
- Nine investigators said it is to link a suspect with a crime

Sample “C” said that the purpose of identification is to identify suspects or perpetrators who committed a crime, by witnesses.

The samples gave almost similar answers to the literature; for example, linking the suspect with a crime, which will then lead to the court to convict the rightful suspect.

Eight investigators were in line with the viewpoint of Hoffmann and Zeffertt (1988:481), arguing that it is to give the witness the opportunity to identify the suspect. The sample of investigators and the prosecutor had an understanding of the purpose of identification.

The question was not put to sample “B” because they are garage owners and do not have legal and policing background.

3.14 THE INSTALLATION OF CCTV

According to Matchett (2003:210), procedure in conducting CCTV starts with the planning stage; all of the preliminary questions regarding the eventual system design will be done in the planning stage. This stage requires the most interaction between the designer and the end-users, and is designed to meet the end-users’ needs. If this phase is done completely and thoroughly, the end-user will have no misconception regarding what the system will and will not do. Planning the system can be much easier if the designer first creates a few survey formats to get all of the answers needed to properly design the system. There needs to be someone

watching the video monitors at all times. For the purpose of this research, the end-users are the garage owners, investigators of crime, and the courts of law.

In *Tap Wine Trading CC and another v Cape Classic Wines (Western Cape) CC and another* (1998) JOL 3039 (C), the court ruled that participant electronic surveillance is admissible in civil litigation, but only where the state is not the litigant. CCTV needs to be installed in such a way that the footage retrieved from it will always be of great value. The CCTV installed at the garages is stationary, as it is fixed to an object. It cannot be moved unless it is disconnected (Siljander, 2003:67).

Kruegle (1995:58) is of the opinion that there needs to be good procedure in conducting CCTV, in order to produce an effective security system. The security professional must be knowledgeable in the area of lighting. Energy efficiency is a prime consideration in any CCTV security system, and directly affects the quality and quantity of intelligence displayed on the CCTV security monitor. Since the necessary type and amount of lighting is important, the amount of lighting must be known. If the lighting already exists on the premises, the professional must determine, quantitatively, whether the type of lighting is satisfactory. The results of the site survey will determine whether more lighting must be added.

Laura (2001:6) defines the installation steps for CCTV as follows:

- Identify the need for CCTV use
- Involve stakeholders, including law enforcement, government officials, and the public
- Set criteria for camera placement, use, operators, and success
- Anticipate goals and benefits
- Determine equipment requirements (type of CCTV)
- Assess costs and secure funding
- Finalise operational details (e.g., tape maintenance, storage)
- Create an implementation plan
- Develop training programme – address use, operations, etc.
- Ensure positive community and media relations

The question, “What is the procedure to install CCTV?” was put to all three samples (“A”; “B” and “C”). Sample “A” responded as follows:

- Twenty investigators responded by saying that the procedure to install CCTV is to stick to the law, which includes the statutes, chain of evidence and procedure of CCTV
- Three investigators said that CCTV cameras must be installed in such a way that they are able to capture all the people coming into and leaving the premises
- Two investigators said they are not familiar with the installation of CCTV

Sample “B” said that the premises owners must be aware of the CCTV on their premises, and make sure that the CCTV is fitted in correct positions to capture people leaving and entering the premises.

Sample “C” said that the installation of CCTV must be according to law, and the chain of evidence needs to be maintained at all costs.

Sample “A” concurred with sample “C”, in that the installation of CCTV must not be outside of the application of law. Sample “B” and the literature have the same viewpoint about the installation of CCTV, indicating that installation has to meet the end-users’ needs and the premises owners must be aware of the installation (Matchett, 2003:210). The researcher is of the view that what is said by sample “A” and sample “C” is not different from sample “B” and literature, as the installation has to meet the end-users needs according to the application of law.

3.15 THE VALUE OF CCTV TO THE PRIVATE SECTOR

The annual financial loss to business, industry and Government because of dishonest employees cannot be estimated with complete accuracy, but it is known that the loss exceeds that from major crimes such as burglary and robbery and from theft such as shoplifting (Laura, 2001:6). Measures have been implemented to protect business against external theft – theft committed by outsiders, such as burglary and robbery, but there is a tendency to neglect internal security measures to

prevent employee theft until staggering losses are suffered. The business owners react in a desperate effort to salvage a business in peril of bankruptcy. An estimate suggests that as much as 20% to 30% of all business bankruptcies are the result of internal theft (Siljander, 2003:54).

According to Safir (2003:129), in 1991 there was 9% to 20% drop in crime after cameras were installed in Birmingham, after business community pushed for the installation of video surveillance cameras. The Cape Town Metro Police (2007) Strategic and Operational Plan 2008/2009 suggests that CCTV has had a marginal effect on crime, since the City started to utilise CCTV crime dropped by 41% right in the CBD, the banks and retail stores benefited from this exercise.

According to Matchett (2003:160), even though the business community can push for installation of CCTV in their businesses, employees' rights must be taken into consideration. Hidden cameras have been a sensitive issue in the history of their use, and the acceptance of their use depends on many factors. Camera location, type of facility, type of recording and camera purpose can all weigh heavily on whether a particular camera is acceptable. In 1997, the National Labour Relations Board in the UK ruled that employers must bargain with unions over installation and placement of hidden cameras within the employer's workplace (Matchett, 2003:160).

The question, "What value has CCTV for managerial use in the private sector?" The question was put to sample "B" only, and they responded as follows:

- The five garage owners valued the installation of CCTV at their business premises as a help in crime reduction, for example, garage robberies went down by ten cases, for the period of this research and this assisted them to manage their businesses easily. Before the installation of the CCTV there were 26 robberies per annum reported for the period 2007/2008, but now only 16 robberies are reported per annum for 2008/2009 at the area where this research is conducted.

3.16 BENEFITS OF CCTV

The introduction of CCTV is widely seen as an important weapon in deferring and detecting crime, and in reducing the fear of crime within the town and city centres (Laura, 2001:5). According to Petersen (2001:14), surveillance is changing the way people view themselves and neighbours; it is even changing the ways in which people interact with one another and protect themselves.

Gill (2003:141) says that the installation of CCTV cameras on commercial premises and high streets assists in detecting crime, such as personal attacks, theft and drug dealing. It also provides benefits in related areas such as public safety, alarm verification and number plate recognition. According to the South African Business against Crime (2009) Strategic policy on crime 2008/2009, there are measurement systems to evaluate CCTV effectiveness in reducing crime, and 66% of the business community have utilised CCTV for more than five years. The indication was that there has been a marked improvement in police operations, and 57% of crime reduction, in the CBD. Carlen and Morgan (1999:87) describe CCTV as a wonderful technological supplement to the police. CCTV spots crime identifies law breakers, and helps convict the guilty. CCTV is a real asset to communities, a great deterrent to crime, and a huge reassurance to the public.

Hector (2005:78) lists the benefits of CCTV as follows:

- The use of CCTV has a clear benefit in respect of identification and arrest of suspects
- The video footage taken by CCTV cameras is of assistance in the gathering of evidence
- Video evidence can be most useful in the speedy resolution of cases, as suspects generally plead guilty when confronted with such evidence
- CCTV makes possible more effective utilisation of police officers to patrol other areas, thus allowing for saving on resources
- The use of CCTV may further serve as a deterrent to potential perpetrators.
- One of the primary benefits of CCTV use is that it is a source of comfort to law-abiding citizens

According to the Johannesburg Metro Police (2009) Strategic and Operational Plan 2007/2008, crime has been reduced by 27% since the installation of CCTV in the city centre for the period 2006/2007.

The question, "According to your opinion what are the benefits of CCTV?" The question was put to all three samples ("A", "B" and "C"). Sample "A" responded as follows:

- Four investigators said CCTV is more beneficial in saving manpower and physical resources
- Seven investigators responded by saying CCTV helps to reduce crime, particularly in the CBD
- Eight investigators said CCTV helps detectives to identify suspects
- Five investigators said CCTV helps the business community to prevent their employees stealing from them
- One investigator said CCTV assists to secure conviction

Sample "B" said that CCTV benefited all three samples in terms of loss of money, sentencing of involved suspects, and crime reduction for example (theft, robbery and others crimes) since the installation of CCTV at their premises.

Sample "C" said that CCTV can always benefit the criminal justice system by securing convictions, quick finalisation of cases in court, and the reduction of crime in areas where CCTV is installed.

The responses from all three samples "A", "B", and "C" have the same understanding of the benefits of CCTV. There is no difference in all three samples' answers of what the benefits of CCTV are. The samples' understandings of the benefits of CCTV are no difference to the authors.

3.17 SHORTFALLS OF CCTV

The Johannesburg Metro Police (JMPD) Strategic and Operational Plan 2008/2009 made mention of the reduction of crime as a result of CCTV installation, whereas Hocr (2005:80) says there are no true crime reductions as a result of CCTV and any reduction in crime achieved in one area is negated by the increase in crime in another.

According to Matchett (2003:31), after the CCTV system has been installed for several years, cameras, cables, connectors and control equipment have an increased possibility of failure. Carlen and Morgan (1999:88-89) outline the shortcomings of CCTV as follows:

- In some areas it has led to a reduction in crime and which fuelled the displacement of crime
- CCTV control rooms have shown that the gaze of cameras doesn't fall equally on all users in the street in busy centres or towns
- Operators single out those who they believe are most likely to look like criminals

Hocr (2005:80) gives the shortcomings of CCTV as follows:

- One of the shortcomings identified with regard to CCTV use is that crime is simply displaced to surrounding areas which are less protected
- There can be no complaint if CCTV prevents serious crime from being committed. However, violent crimes are very difficult offences for cameras to prevent or deter, given the fact that they frequently occur spontaneously
- It seems as if CCTV operators may over-scrutinise certain groups, and that the choice of subjects for surveillance may largely be determined by stereotypical assumptions
- It has been argued that CCTV in city centres may give rise to a reduction in tolerance, as a result the opportunity of crime rises

The question, "what are the shortfalls of CCTV?" was put to all three samples ("A", "B" and "C"). Sample "A" responded as follows:

- Five investigators said that CCTV is installed incorrectly most of the time, and the faces of the people are not clear
- Seven investigators said CCTV consumes much money for installation and maintaining; only certain people can afford it
- Four investigators said CCTV is not yet acceptable in court as evidence alone; it must corroborate with existing evidence
- Five investigators said CCTV can be manipulated by users; photos they don't require can be removed
- Two investigators said CCTV does not necessarily reduce crime; it mostly displaces crime
- Three investigators said they do not know of any shortcomings of CCTV

Sample "C" said that CCTV can damage or have a negative effect on a case if not handled or, rather, installed in a correct way and can be manipulated. CCTV is not yet acceptable in court as evidence alone and is classified as video evidence.

Sample "B" said that CCTV needs a budget for maintenance; not all business owners can afford to have it.

The sample's responses were compared with those of the literature, and there were no differences. The prominent point outlined by the literature and the large number of nine samples of investigators, was that CCTV displaces crime. Sample "B" concurs with the sample of four investigators about the affordability of CCTV being a challenge to business owners. The researcher's opinion is that CCTV displaces crime as outlined by a large number of participants in sample "A" including literature.

3.18 SUMMARY

CCTV may have a tremendous influence on the outcome of a criminal investigation specifically the investigation of robbery cases at filling stations where CCTV cameras are installed. Investigators must remain alert to recover any type of evidence that might lead to identification of a suspect or link a suspect to a specific crime or on exhibit. CCTV is of enormous value as a technique in the investigation of crime.

Robberies committed at the filling stations where CCTV installed are more likely to be resolved. Investigators must know the benefit and short comings of CCTV. CCTV is an important technique in forensic investigation.

CHAPTER 4

FINDINGS AND RECOMMENDATIONS

4.1 INTRODUCTION

The aim of the research was to establish if CCTV footage could be a surveillance technique in the investigation of robbery cases at filling stations- has been achieved. The researcher attempted to research this conclusion by collecting and analysing data from literature, interviews and by analyzing finalised cases of robberies at filling stations. Research purpose, reading material, enhancing of the validity and whether CCTV footage as a surveillance could be utilised as investigation technique, the evaluating and criticising of interview preparations and empowerment of those who have been part of the research, were all achieved

The benefit of the study primarily resides in the fact that it has demonstrated that CCTV could be utilised as surveillance technique to investigate crime, such as robbery. Moreover, it can provide investigator with the determination of the type of crime committed, to identify witnesses and including perpetrators or suspects in a criminal act. Footages can be obtained from the scene of crime and be utilised by investigators to concentrate more effectively on the aspects of identifying crime committed, identifying and tracing of suspects and gathering of evidence for court purposes, specifically in robbery but also in all other criminal cases

The application of the researcher's findings and recommendations by investigators, as well as internal and external sources will now follow.

4.2 FINDINGS

Findings are based on information that was obtained from the samples of participants, case studies and the viewpoints of national and international sources.

Research question 1

What are admission requirements for CCTV footage as evidence?

In this research it was established that:

- Admission requirement for CCTV footage as evidence is for CCTV footage to be admissible in court; it must have been legally, procedurally and correctly managed. Third party surveillance is admissible in court, even if the police did not use section 2(2) of the interception and monitoring prohibition Act 127 of 1992, CCTV admission requirement must be legally in nature
- The participants are not familiar with the admissible requirements for CCTV footage as evidence, a large number of thirteen investigators did not have any knowledge about the admission requirements of CCTV footage as evidence in court
- Evidence is all means by which the truth is scrutinized of an alleged fact; evidence plays an important role in the investigation of crime and the prosecution thereof. The majority of cases lost in court due to the fact that evidence was not collected, preserved and prepared in a correct way
- The participants are familiar with the concept “evidence” and understand and know the importance of evidence, from investigation up to the presentation in court. Only two were not well informed of what evidence is
- The different forms of evidence are as follows:
 - Oral testimony of witness.
 - Real evidence
 - Documentary evidence
 - Video and Audio recordings
 - Computer generated evidence
 - Photograph and films
- The participants have a good understanding of the different forms of evidence
- The admissibility of evidence means that evidence must be competent and relevant material

- The participant understand what is admissibility of evidence
- Legal requirement for CCTV as evidence, there is no formal written guidelines or policies that govern the use of CCTV
- Fifteen investigators mention monitoring and interception ACT 70 of 2002 as the only legislative that can be used, the other five participants said that there is no sufficient law governing the usage of CCTV footage as evidence
- CCTV may be briefly discussed as a television system wherein signals are not publicly distributed and images are not broadcast
- Eleven participants have different opinion from the others about the CCTV by only mentioning that it is an investigation aid. Seven investigators do not know what CCTV is
- Chain of evidence is to trace the possession of evidence from the moment the investigator gain control until it is presented in court
- The participants understand the chain of evidence
- A suspect is regarded as a person of being involved in a commission of a crime
- The participants know what a suspect is. Nine of the participants were very specific in their description of a suspect, and therefore differ from other participants who have a common agreement of what a suspect is
- Docket analysis showed that CCTV footage was used as surveillance technique, in the investigation of robbery cases committed at the filling stations in some of the reported cases

Research question 2

How could CCTV footage be used as surveillance technique in the investigation of robberies?

In the research it was established that:

- There is no real difference between criminal and forensic investigation. Criminal investigation is the gathering of information and forensic investigation is the application of scientific methods and techniques, forensic investigation is aimed at investigating court proceedings, criminal as well as civil
- The participants have a good understanding of what is meant by “criminal and forensic investigation” and their objectives; participant can also distinguish between criminal and forensic investigation
- Surveillance is regarded as the covert observation or secretive watching of persons, vehicles, places and objects
- The participants are familiar with what surveillance is, only two were not well informed of surveillance
- The purpose of surveillance is the identifying and arresting of possible criminals and intercept criminal in the act of crime helps with the recovery of stolen property and presentation of evidence relating to alleged crimes, the mission of law enforcement is demanding. It includes the maintenance of peace in the community
- The participants have a good understanding of the purpose of surveillance.
- The different types of surveillance are :
 - fixed or stationary surveillance
 - mobile or moving surveillance
 - undercover surveillance
- The participants are familiar with the different types of surveillance, only two did not know the different types of surveillance
- Identification is the process of identifying any object as establishing the fact that it belong to a large-scale group or class
- The participants have knowledge of what identification is

- All participants are clear on what individualisation means
- All the participants know the difference between identification and individualization
- Purpose of identification is to fairly and accurately to test the ability of witness
- The participants have good knowledge of what the purpose of identification is
- The installation of CCTV must be according to the application of law
- The participants do have understanding of the installation of CCTV
- The value of CCTV is the reduction of crime
- The participants have knowledge of the value of CCTV
- The benefit of CCTV is reduction of crime, prevent loss of money from business fraternity and saving of resources
- The participants are knowledgeable about the benefit of CCTV
- The shortfall of CCTV is that it displaces crime, and not all business owners can afford it
- The participants do not know what the shortfalls for CCTV, but only two participants not familiar with CCTV shortfalls
- Objectives of investigation are:
 - Locating and identifying suspects
 - Crime detection
 - Arresting perpetrators
 - Recovering properties
 - Preparing for trial
 - Convicting the defendant
- Participants understand the objectives of investigation

4.3 RECOMMENDATIONS

The following recommendations are made on the basis of the facts discovered during the course of the research:

Research question 1

- Findings have shown that investigators are not fully aware of the admission requirement for CCTV footage as evidence. It is suggested that they take more notice of what evidence is and the admissibility of CCTV footage as evidence, and especially the requirements of CCTV as evidence
- Investigators are not knowledgeable of the chain of evidence in regard to CCTV footage
- The suggestion is that investigators need to visit more crime scenes at filling stations fitted with CCTV cameras when robbery is committed to learn more practically the chain of evidence in regard to CCTV footage and principles of chain of evidence be included in the detective learning programme as a module
- It is recommended that investigators become more knowledgeable in understanding the importance of the admissible requirements of CCTV footages as evidence, and they should use guidelines effectively. Training and training material in the South African Police Service(SAPS) should include the principles of the law of evidence in the investigation of crime, to explain the principles of the admissibility of evidence

Research question 2

- The garage owners not aware of any contribution they can make in the chain of evidence It is recommended that awareness campaigns and workshops be conducted with garage owners
- There are specific concepts which need to be known by all investigators such as:
 - Forensic investigation

- Investigation of crime
 - Objectives of investigation
 - Surveillance
 - Different types of surveillance
- It is recommended that all the above concepts be included in the detective training manual as modules
 - There is a lack of training in the use of CCTV footage as surveillance technique in the investigation of robberies. It is recommended that investigators receive some essential training prior to the utilisation of CCTV as surveillance technique. Training materials that includes the topic “CCTV footage as surveillance technique”
 - It is recommended that investigators develop the necessary skills and knowledge in the use of CCTV footage as surveillance technique. It is suggested that there must be a course presented to the investigators on CCTV footage as surveillance technique. It is recommended that awareness campaigns be conducted with the garage owners: focused on the usage of CCTV

4.4. CONCLUSION

The design and methodology of the research project have addressed the research questions, and show that there is a definite process which should be followed to use of CCTV as surveillance technique in the investigation of crime. The research demonstrates that support in skills development by means of training in surveillance is much needed. Furthermore, it is extremely important that all members of the criminal justice system involved with the investigation of crime receive proper training.

LIST OF REFERENCES

- Annual Report of the SAPS Mpumalanga 2008/2009 see South African Police Service
- Adams, T.F., Caddell, A.G. & Krutsinger, J.L. 2004. *Crime scene investigation*. 2nd edition. Upper Saddle River, NJ: Prentice Hall.
- Babbie, E.R. 1998. *The practice of social research*. 8th edition. Belmont, Calif.: Wadsworth.
- Babbie, E.R. & Mouton, J. 2001. *The practice of social research*. South African edition. Cape Town: Oxford University Press.
- Bailey, C.A. 1996. *A guide to field research*. Thousand Oaks, Calif.: Pine Forge Press.
- Bailey, K.D. 1987. *Methods of social research*. 3rd edition. London: Collier Macmillan.
- Becker, R.F. 2000. *Criminal investigation*. 3rd edition. Gaithersburg, Md: Aspen.
- Bennett, W.W. & Hess, K.M. 2004. *Criminal investigation*. 7th edition. Belmont, Calif.: Thomson/Wadsworth.
- Bennett, W.W. & Hess, K.M. 2001. *Criminal investigation*. 6th edition. Belmont, Calif.: Thomson Learning.
- Berg, B.L. & Horgan, J.J. 1998. *Criminal investigation*. 3rd edition. New York: Glencoe/McGraw-Hill.
- Blaickie, N. 2003. *Analysing quantitative data*. London: SAGE.
- Bless C. & Higson-Smith, C. 1995. *Fundamentals of social research methods*. 2nd edition. Cape Town: Juta.
- Bouma, G.D. 1993. *The research process*. Oxford: Oxford University Press.
- Brayer, R. 2000. *Detecting forgery in fraud investigations: the insider's guide*. [Alexandria, Va]: ASIS International.
- Brown, M.F. 2001. *Criminal investigation: law and practice*. 2nd edition. Woburn: Butterworth Heinemann.
- Buckwalter, A. 1983. *Surveillance and undercover investigation*. London: Butterworth.
- Burchell, J. 2006. *Principles of Criminal law*. Third edition. Juta and Company Ltd. Paarl.
- Callanan, T. 1994. *Misdaadondersoekbeginsels*. Paarl: Staatsdrukker.
- Cannon, R. & Neligan, N. 2002. *Evidence law*. Dublin: Thomson Round Hall.

- Cape Town Metropolitan Police Department. 2009. *Annual Police Plan 2008/2009*.
Cape Town: The Department.
- Carlen, P. & Morgan, R. 1999. *Crime unlimited? questions for the 21st century*.
Houndmills, Basingstoke, Hants.: Macmillan.
- Chisum, W.J. & Turvey, B.E. 2000. Evidence dynamics: Locard's exchange principle
& crime reconstruction. *Journal of behavioural profiling*, 1(1):1-15, Jan.
- Concise Oxford dictionary*. 10th revised edition. 2002. Oxford: Oxford University
Press.s.v. "identification".
- Creswell, J.W. 1998. *Research design: Qualitative and quantitative approaches*.
California: SAGE.
- Cross, R. & Wilkins, N. 1975. *An outline of the law of evidence*. 4th edition. London:
Butterworths.
- De Bruyn, P.P., Erasmus, M., Jason, C.A., Mentz, P.J. & Steyn, S.L. 2002. *School
as organisations*: Pretoria: Van Schaik.
- De Villiers, D.S. 2008. *Criminal justice and forensic investigations*. Johannesburg:
University of Johannesburg.
- De Vos, A.S., Strydom, H., Fouche, C.B. & Delport, C.S.L. 2002. *Research at grass
roots: for the social sciences and human service professions*. 2nd
edition. Pretoria: Van Schaik.
- Dempsey, J.S. 2003. *Introduction to investigations*. Belmont, Calif:
Wadsworth/Thomson Learning.
- Denscombe, M. 2002. *The good research guide for small-scale social research
projects*. New York: Open University Press.
- Dowling, J.L. 1997. *Criminal investigation*. Houston, Tex.: Sam Houston State
University.
- Doyle, J.S. 2003. *Fundamentals of firearm investigation*. Guildford: Houghton Mifflin.
- Du Preez, G. 1996. *Misdadondersoek, Forensiese Kriminallistiek*. Durban:
Butterworth.
- Du Preez, G. 1996. Criminal investigation. in Van der Westhuizen, J. (ed). 1996.
Forensic Criminalistics: Johannesburg :Heinmann
- Emson, R.N. 2006. *Evidence*. 3rd edition. Basingstoke: Palgrave McMillan.
- Erzinclioglu, Z. 2004. *Forensics: true crime scene investigations*: London:
Carlton Books.

- Evans, M.M. & Stagner, P.A. 2003. Maintaining the chain of custody: evidence handling in forensic cases. *AORN Journal*, 78(4):563-567, October.
- Fisher, B.A.J. 2004. *Techniques of crime scene investigation*. 7th edition. Boca Raton, Fla.: CRC Press.
- Fisher, B.A.J. 2000. *Techniques of crime scene investigation*. 6th edition. Boca Raton, Fla.: CRC Press.
- Fox, W. & Meyer, L. 1996. *Public administration dictionary*. Kenwyn: Juta.
- Gardner, R.M. 2005. *Practical crime scene processing and investigation*. Boca Raton, Fla: CRC Press.
- Gilbert, J.M. 2004. *Criminal investigation*. 6th edition. Upper Saddle River, NJ: Pearson Education.
- Gill, M. (ed.) 2003. *CCTV*. Leicester: Perpetuity Press.
- Gras, M.L. 2004. The legal regulation of CCTV in Europe. *Surveillance & society*, 2(2/3):216-229.
- Gray, D.E. 2004. *Doing research in the real world*. London: SAGE.
- Grinnell, R.M. 1993. *Social work research and evaluation*. 4th edition. Itasca, Ill.: F.E. Peacock.
- Haggerty, K.D. & Ericson, R.V. 2005. *The new politics of surveillance and visibility*. Toronto: University of Toronto Press.
- Hector, S. 2005. *Regulation of the use of CCTV as a crime prevention technique*. Society of Law Teachers of Southern Africa conference, 17-20 January, 2005. Pietermaritzburg: University of KwaZulu-Natal.
- Hoffmann, L.H & D.T Zeffertt'sc1988 *The South African law of evidence*. 4th edition. Durban: Butterworths.
- Honess, T. & Charman, E. 1992. *Closed circuit television in public places: its acceptability and perceived effectiveness*. London: Home Office Police Department. (Police Research Group: Crime prevention unit series: Paper no. 35).
- Horswell, J. 2004. *The practice of crime scene investigation*. Washington, DC: CRC Press.
- Huysamen, G.K. 1993. *Metodogie vir die sosiale en gedragwetenskappe*. Halfweghuis: Southern.
- Johannesburg Metropolitan Police Department. 2009. *Strategic and operational plan. 2007/2008*. Johannesburg: The Department.

- Jones, P., Hillier, D. & Turner, D. 1997. Exploring the role of CCTV surveillance systems in town centre management. *Management research news*, 20(10):35-42.
- Joubert, C. (ed.) 2001. *Applied law for police officials*. 2nd edition. Lansdowne: Juta Law.
- Joubert, C. (ed.) 2010. *Applied law for police officials*. 3rd edition. Lansdowne: Juta Law.
- Kerlinger, F.N. 1986. *Foundations of behavioral research*. New York: CBS.
- Knobe, D., & Bohrnstedt, G.W. 1991. *Basic social statistics*. Itasca, Ill.: F.E. Peacock.
- Kruegle, H. 1995. *CCTV surveillance: video practices and technology*. Newton, Mass.: Butterworth Heinemann.
- Laura, J.N. 2001. *Law enforcement management administrative statistics*. Paper delivered at the executive brief of the International Association of Chiefs of Police (Washington).
- Layman, M.D. 2002. *Criminal investigation*. 3rd edition. Upper Saddle River, NJ: Prentice Hall.
- Lee, H.C. & Harris, A.H. 2000. *Physical evidence in forensic science*. Tucson, Ariz.: Lawyers and Judges Pub.Co.
- Leedy, P.D. & Ormrod, J.E. 2005. *Practical research: planning and design*. 8th edition. Upper Saddle River, NJ: Pearson Education.
- Leedy, P.D. & Ormrod, J.E. 2001. *Practical research: planning and design*. 7th edition. Upper Saddle River, NJ: Prentice Hall.
- Marais, C.W. 1998. *Physical evidence in crime investigation*. Wierda Park: Henmar.
- Marais, C.W. 1992. *Physical evidence in crime investigation*. Wierda Park: Henmar.
- Marais, C.W. & Van Rooyen, J.J.N. 1990. *Crime investigation*. 4th edition. Silverton: Promedia.
- Mason, J. 2002. *Qualitative researching*. 2nd edition. London: Sage.
- Mason, J. 1996. *Qualitative researching*. London: Sage.
- Matchett, A.R. 2003. *CCTV for security professionals*. London: Butterworth-Heinemann.
- Maxfield, M.G. & Babbie, E.R. 1995. *Research methods for criminal justice and criminology*. Belmont, Calif: Wadsworth.
- McCahill, M. 2002. *The surveillance web*. Toronto: Willan.

- Melville, S. & Goddard, W.D. 1996. *Research methodology*. Lansdowne: Juta.
- Monitoring and Interception Act see South Africa. 2002. Regulation of Interception ...
- Morrisette, P. 1999. Phenomenological data analysis: a proposed model for counsellors. *Guidance and counseling*, 15:2-8.
- Mouton, J. 1996. *Understanding social research*. Pretoria: Van Schaik.
- Mouton, J. 2001. *How to succeed in your master's and doctoral studies: a South African guide and resource book*. Pretoria: Van Schaik.
- Murphy, T. 2007. Teeth, but a questionable appetite: the information commissioner's code of practice and the regulation of CCTV surveillance. *International review of law, computers and technology*, 21(2):129-143, July.
- Murphy, T. 1999. The admissibility of CCTV evidence in criminal proceedings. *International review of law computers and technology*, 13(3):383-404.
- National Instruction 2/2002 see South African Police Service.
- National Instruction 3/2003 see South African Police Service.
- Naude, D. 1996. Forensic Odontology. in Van der Westhuizen, J. (ed). 1996. *Forensic Criminalistics*: Johannesburg :Heinmann
- Neuman, W.L. 2006. *Social research methods: qualitative and quantitative approaches*. 4th edition. Boston: Allyn and Bacon.
- Newburn, T., Williams, T. & Wright, A. (eds.) 2007. *Handbook of criminal investigation*. Portland, Or.:Willan.
- Norris, C. & Armstrong, G. 1999. *The maximum surveillance society: the rise of CCTV*. Oxford: Berg.
- Nouw, S., De Vries, B.R. & Prins, C. 2005. *Reasonable expectations of privacy? Eleven country reports on camera surveillance and workplace privacy*. The Hague: TMC.Asser Press.
- Ogle, R.R. 2004. *Crime scene investigation and reconstruction: with guidelines for crime scene search and physical evidence collection*. Upper Saddle River, NJ: Pearson Education.
- O'Hara, C.E. & O'Hara, G.L. 2003. *Fundamentals of criminal investigation*. 7th edition. Springfield, Ill.: Charles C. Thomas.
- O'Hara, C.E. & O'Hara, G.L. 1988. *Fundamentals of criminal investigation*. 5th revised edition. Springfield, Ill.: Charles C. Thomas.
- Olivier, N.J.C. 1997. *Die beginsels van proaktiewepolisering met spesifieke*

- Verwysingna die Suid-Afrikaanse Polisie*. Unpublished Doctor Litterarum et Philosophiae, University of South Africa (Unisa), Pretoria
- Olivier, N. 2003. The role of the investigator in victim support: a case study of South African investigators. In: *Proceedings of the 11th International Symposium on Victimology*. Stellenbosch: University of Stellenbosch.
- Oxford Dictionary of current English*. 1998. Dublin: Educational Company. s.v. "evidence". Oxford University Press.
- Oxford Dictionary of current English*. 2nd edition. 2005. s.v "value" Oxford: Oxford University Press.
- Palm, Y. 2000. *Basic aspects of document-related investigations*. Pretoria: Government Printer.
- Palmiotto, M.J. 2004. *Criminal investigation*. 3rd edition. Chicago: Nelson Hall.
- Petersen, J.K. 2001. *Understanding surveillance technologies: spy devices, their origins & applications*. Boca Raton, Fla: CRC Press.
- Prinsloo, J. 1996. The scene of the crime as a source of information. In Van der Westhuizen, J. (ed). 1996. *Forensic Criminalistics*: Johannesburg: Heinemann
- Reid, W. & Smith, A.D. 1989. *Research in social work*. 2nd edition. New York: Butterworth.
- Robson, C. 2002. *Small-scale evaluation: principles and practice*. London: Sage.
- Rubin, A. & Babbie, E. 1997. *Research methodology for social work*. Pacific Grove, Calif.: Wadsworth.
- Safir, H. 2003. *Security: policing your homeland, your city, yourself*. New York: Thomas Dunne Books.
- Schmidt, C.W.H. & Zeffertt, D.T. 1997. *Evidence*. Durban: Butterworth-Heinemann.
- Schmidt, P. & Rademeyer, H. 2000. *Bewysreg*. Durban: Butterworth.
- Schwikkard, P.J., Skeen, A. St. Q. & Van der Merwe, S.E. 1997. *Principles of evidence*. Lansdowne: Juta.
- Schwikkard, P.J. & Van der Merwe, S.E. 2002. *Principles of evidence*. Lansdowne: Juta.
- Seidman, I. 1998. *Interviewing as qualitative research*, 2nd edition. New York: Teachers College Press.
- Sennewald, C.A. & Tsukayama, J.K. 2001. *The process of investigation*. 2nd edition. Woburn: Butterworth-Heinemann.

- Sheptycki, J. 2000. Surveillance, closed circuit television and social control. *Policing and Society*, 9:430-436.
- Siljander, R.P. 2003. *Fundamentals of civil and private investigation*. Springfield, Ill.: Charles C. Thomas.
- Smith, J.C. 1995. *Criminal evidence*. London: Sweet & Maxwell.
- Snyman, C.K. 2008. *Criminal law*. Fifth edition. Lexis Nexis. Durban
- South Africa. 2009. Business Against crime, strategic policy on crime 2008/2009.
- South Africa. 2002. Regulation of Interception of Communications and Provision of Communications-related Information Act 70 of 2002. Pretoria: Government Printer.
- South Africa. 1996. The Constitution of the Republic of South Africa Act 108 of 1996. Pretoria: Government Printer.
- South Africa. 1995. South African Police Act 58 of 1995. Pretoria: Government Printer.
- South Africa. 1977. Criminal Procedure Act 51 of 1977. Pretoria: Government Printer.
- South African Police Service. 2009. *Annual Report of the SAPS Mpumalanga for 2008/2009*. Pretoria: Commissioner of the SAPS.
- South African Police Service. 2007. *Annual report of the SAPS Mpumalanga for 2006/2007*. Pretoria: Commissioner of the SAPS.
- South African Police Service. 3/ 2003. *National Instruction: surveillance*. Pretoria: Commissioner of the SAPS.
- South African Police Service. 2007. *National instruction: tracing of suspects*. Pretoria: Commissioner of the SAPS.
- South African Police Service. 2003. *Training manual: crime intelligence: surveillance*. Pretoria: Commissioner of the SAPS.
- South African Police Service. 2009. *Training manual: Detectives*. Pretoria: Commissioner of the SAPS.
- South African Police Service. 2/2002. *National Instruction. Handling of informers*. Pretoria: Commissioner of the SAPS.
- South African Police Service. 2000. *Crime intelligence policy directives and procedures manual: Information*. Pretoria: Commissioner of the SAPS.
- South African Police Service. 1997. *Detective learning programme module: tracing techniques*. Pretoria: Commissioner of the SAPS.

- Swanson, C.R., Chamelin, N.C. & Territo, L. 2003. *Criminal investigation*. 8th edition. New York: McGraw-Hill.
- Taylor, R.B. 1994. *Research methods in criminal justice*. New York: McGraw-Hill.
- Terre Blanche, M. & Durrheim, K. (eds.) 2004. *Research in practice: applied methods for the social sciences*. Cape Town: UCT Press.
- Tulloch, S. (ed.) 1993. *Readers Digest-Oxford complete wordfinder*. London: Readers Digest.
- Tyska, L.A. & Fennelly, L.J. 1999. *Investigations: 150 things you should know*. Boston: Butterworth Heinemann.
- University of South Africa. 2002. *Code of ethics for research at Unisa*. Pretoria: Unisa.
- Van As, M. & Van Schalkwyk, M. 2001. *Research and information*. Pretoria: Van Schaik.
- Van Heerden, T.J. 1986. *Inleiding tot die polisie-kunde*. Pretoria: Universiteit van Suid-Afrika.
- Van Heerden, T.J. 1985. *Kriminalistiek*. Pretoria: Universiteit van Suid-Afrika.
- Van Heerden, T.J. c1982. *Criminalistics*. Pretoria: University of South Africa.
- Van Niekerk, A. 2000. *The crime scene*. Pretoria: Government Printer.
- Van Rooyen, H.J.N. 2008. *The practitioner's guide to forensic investigation in South Africa*. Pretoria: Henmar.
- Van Rooyen, H.J.N. 2001. *Practical guide for private investigators*. Wierda Park: Henmar.
- Welman, J.C. & Kruger, S.J. 2001. *Research methodology for the business and administrative sciences*. South African edition. Halfway House: International Thomson Publishing.
- Welsh, C. & Farrington, P. 2004. *Surveillance for crime prevention in public spaces*. Cambridge: University of Cambridge.
- Zeffertt, D.T., Paizes, A.P. & Skeen, A. St. Q. 2003. *The South African law of evidence*. Durban: LexisNexis Butterworths.

CASES CONSULTED

Hollingham v Head (1858) 4 CB (NS) 388, 27, LJP 241, 242, 140, ER 1135

Lornadawn Investments (Pty) Ltd. v Minister van Landbou 1977 SA 618 (T) 622
(H)

Narlis v South African Bank of Athens 1973 2 SA 573 (A)

R v Matthews 1960 (1) SA 752 (A) AB

R v Birmingham 1992 Crim. L.R. 117

S v Boesman 1990 SACR 389 (E)

R v Doyle 1967 VR 6981

S v Du Toit 1987 3-24 (B)

S v Sibanyoni 1997 (1) SACR 626 (W)

S v Baleka 1986 (4) SA 192 (1)

S v Du Toit and others 2005 (2) SACR 367 (1)

S v Kidson 1999 (1) SACR 338 (W)

S v Mpumlo 1986 (3) SA 485 (E)

S v Ramgobin 1986 (4) SA 117 (17)

S v Tsapo 1970 (2) SA 256 (T)

Seccombe v Attorney General 1919 TPD 270

*Tap Wine Trading CC and another v Cape Classic wines (Western Cape) CC and
another* (1998) JOL 3039 (C)

Wise v The Queen (1992) 8 CRR (2d) 53

ATTACHMENT: A

INTERVIEW SCHEDULE

Topic: Closed Circuit Television as a surveillance technique: a case of filling stations in Middelburg, Mpumalanga, South Africa.

Interview schedule for police officials (sample "A").

Section A: Historic Information

1. Are you an investigation officer?
2. How long are you an investigator?
3. Do you make use of surveillance?
4. Did you undergo basic detective training?
5. Did you receive training in the use of surveillance in crime investigation?

Section B: What are the admission requirements for CCTV footage as evidence?

1. What is evidence?
2. What are the different types of evidence?
3. What is admissibility of evidence?
4. What are the admissibility requirements for CCTV as evidence?
5. What is forensic investigation?
6. What is criminal investigation?
7. What is the difference between forensic investigation and criminal investigation?
8. What are the objectives of investigation?
9. What is surveillance?
10. What is the purpose of surveillance?
11. What are the different types of surveillance?
12. What is a suspect?

Section C: How should CCTV footage be used as surveillance technique in the investigation of robberies?

1. What is closed circuit television?
2. How do you maintain the chain of evidence with closed circuit television footage?
3. What are the legal requirements for closed circuit television to be admissible in court?
4. What is identification?
5. What is individualisation?
6. What is the difference between identification and individualisation?
7. What is the purpose of identification?
8. What is the procedure to install CCTV?
9. What are the benefits of CCTV?
10. What are the shortfalls of CCTV?

ATTACHMENT: B

INTERVIEW SCHEDULE

Interview schedule for the prosecutor (sample "C").

Section A: Historic Information

1. Are you prosecutor?
2. How long are you a prosecutor?
3. Did you make use CCTV footage as evidence?

Section B: What are the admission requirements for CCTV footage as evidence?

1. What is evidence?
2. What are the different types of evidence?
3. What is admissibility of evidence?
4. What are the admissibility requirements for CCTV as evidence?
5. What is forensic investigation?
6. What is criminal investigation?
7. What is the difference between forensic investigation and criminal investigation?
8. What are the objectives of investigation?
9. What is surveillance?
10. What is the purpose of surveillance?
11. What are the different types of surveillance?
12. What is a suspect?

Section C: How should CCTV footage be used as surveillance technique in the investigation of robberies?

1. What is closed circuit television?
2. How do you maintain the chain of evidence with closed circuit television footage?
3. What are the legal requirements for closed circuit television to be admissible in court?

4. What is identification?
5. What is individualisation?
6. What is the difference between identification and individualisation?
7. What is the purpose of identification?
8. What is the procedure to install CCTV?
9. What are the benefits of CCTV?
10. What are the shortfalls of CCTV?

ATTACHMENT : C

INTERVIEW SCHEDULE

Interview schedules for garage owners (sample “B”).

1. What is the procedure to install CCTV?
2. What value has CCTV for managerial use in the private sector?
3. What are the benefits of using CCTV?
4. What are the shortfalls of using CCTV?

CLOSED CIRCUIT TELEVISION AS A SURVEILLANCE TECHNIQUE: A CASE STUDY OF FILLING STATIONS IN MIDDELBURG, MPUMALANGA, SOUTH AFRICA

This research sought to find answers of the following questions:

- What are the admission requirements for CCTV footage as evidence?
- How should CCTV footage be used as surveillance technique in the investigation of robberies?

Dockets were analysed to get answers for the following questions:

- Was CCTV used as surveillance technique?
- Was there any CCTV footage evidence admitted in court as evidence in the dockets?
- Was there any evidence that the chain of evidence in relation to CCTV footage kept in the dockets?

ANNEXURE : A

38/04/2005 10:46 0123933178

S

PAGE 02/02

South African Police Service



Seib-Afrikaanse Polisie

Private Bag

X94

Fax no

(012) 393 3178

Privaatsak

Faks no

YOUR REFERENCE / U VERWYSING

MY REFERENCE / MY VERWYSING

3/34/2

ENQUIRIES / NAVRAE

S/Supt J Schnetler / Supt GJ Joubert

TEL NO

(012)393 3177 / 3118

THE HEAD / DIE HOOF
STRATEGIC RESEARCH /
STRATEGIESE NAVORSING /
STRATEGIC MANAGEMENT /
STRATEGIESE BESTUUR
PRETORIA
0001

8 April 2005

DR N J C OLIVIER

UNISA

RE: REQUEST FOR PERMISSION TO CONDUCT RESEARCH : FORENSIC INVESTIGATION

1. Your e-Mails dated 4 March 2005 and 6 April 2005 refers.
2. The following students are hereby given permission to conduct research on their respective topics for obtaining the M Tech Forensic Investigation degree at Unisa:
 - 2.1 K I Monchonyane - Tool imprints as an individualization technique
 - 2.2 J N Naidoo - The value of spent cartridges in the individualization of firearms
 - 2.3 M O Ngwenya - Close circuit television as surveillance technique
 - 2.4 H T Lochner - Kartering van selfoontegnologie
 - 2.5 C M Nyuswa - Identification parade as a technique to identify in forensic investigation
 - 2.6 G W van Rooyen - The examination of computers in establishing a crime scene in acts of fraud.
3. These requests were referred to the Divisional Commissioner Detective Services and he requests that the researchers do not remove any documentation, files or dockets from SAPS premises where the research will be conducted, and no disruption of routine police activities should take place.
4. Standing Order 88 is applicable which state inter alia that the SAPS must receive copies of the final research documents.
5. Copies of this letter must be submitted to the relevant role players when the research will be conducted.

J Schnetler
SNR SUPT
HEAD: STRATEGIC RESEARCH
J SCHNETLER