

The signatures of innocence and guilt

A grieving daughter's tenacity means that even cracks between washed floorboards may reveal the truth about a crime, writes **Kanina Foss**



Vanessa Lynch, executive director of the DNA Project, pictured in the Western Cape Forensic Lab with lab commander Senior Superintendent Mafiki Maluleke and Captain Sumaya Salie. The occasion was the donation by the DNA Project of DNA equipment, including a GeneAmp, ThermoShakers, laptops, cameras and crime scene software.

THE BURGLARS who murdered Vanessa Lynch's father probably left behind everything the police needed to find them. The evidence was there – on the clothes of the victim, and the rim of the bottle found in the garden where the killers had been drinking.

But the police threw away the bottle, the hospital threw away the clothes, the security company trampled all over the crime scene and well-meaning friends, who didn't want the family to see the blood, washed it away with a hosepipe.

They obliterated each killer's unique biological signature – his DNA.

South Africa has one of the highest rates of violent crime in the world and one of the lowest conviction rates. The one thing all humans have in common – the fact that we are unique – could be the way to change this.

Imagine the following had happened at the Lynch crime scene instead: investigators carefully lifted DNA samples and used them to create unique DNA profiles for each suspect. The profiles were entered into a database and checked against the profiles of millions of people – some convicted offenders – already on the database.

Either a match was found on the database, and the relevant people were arrested immediately, or the profiles were kept on the database and matched against suspects brought into custody 10 days or ten years after the crime was committed.

The profile of someone arrested for drunken driving 10 years after the murder could have been checked against unsolved crimes, and found to be a match.

Sounds like *CSI*? Lynch wants to make it a reality.

Not for her father – she knows it's too late for that – but for the countless other victims of crime in South Africa, and their families.

After her father's death, she founded an NGO called The DNA Project in 2005, to advocate for the use of DNA

profiling in crime resolution.

The use of DNA evidence has already resulted in the resolution of many cases in South Africa. In 2004, a taxi driver handed in one-week-old twin boys and said they had been left in his taxi. Seven women came forward, claiming to be the mother.

A Johannesburg children's court ruled that DNA tests should be conducted on the twins, dubbed the "taxi twins", and the mother was identified. It later transpired the taxi driver was the father.

DNA evidence can prove both innocence and guilt. The Innocence Project in the US has resulted in the exoneration of 232 people who had already been convicted, 17 of whom had been sentenced to death. The average sentence served was 12 years.

In 2001, 9-month-old baby Tshepang was raped. Six men were arrested after being accused by the community. But a perfect specimen of seminal DNA, retrieved by the police, proved all six were innocent. A former boyfriend of the baby's mother was later identified as the perpetrator.

If this man's profile had existed on a DNA database, the match would have been made immediately, saving the six from ongoing persecution by a community that needed someone to blame, and speeding up the justice process.

In Iceland, every member of the population is on the database. DNA Project director Dr Carolyn Hancock said it would be ideal if the same happened in South Africa.

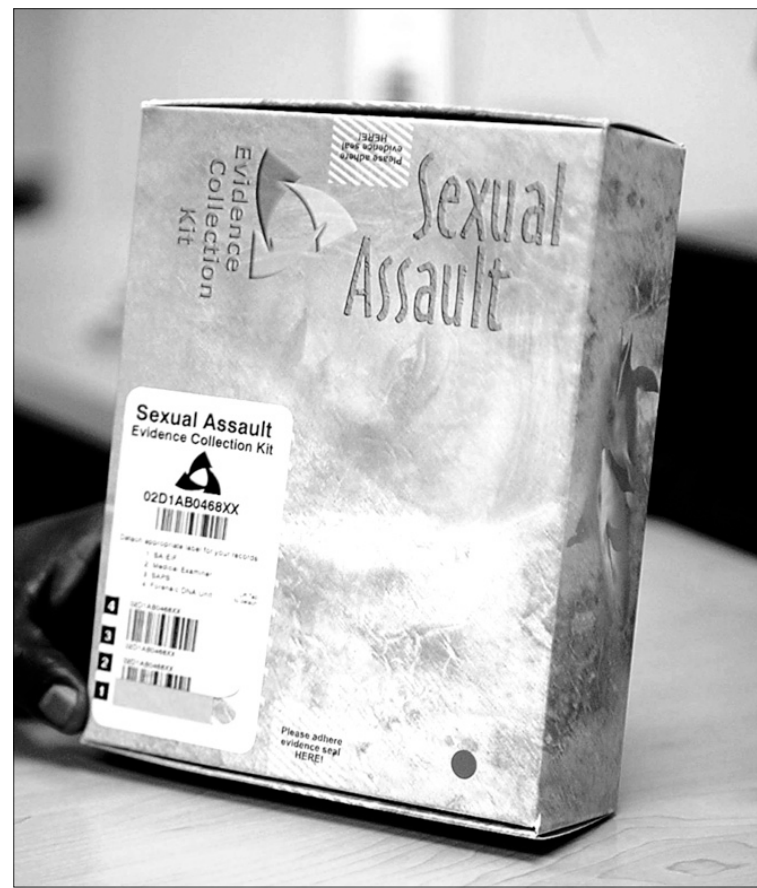
"Personally, I think it would be great if the whole South African population was on the database. The problem is capacity – what we really need to do is get the criminals on the database, that's the best place to start."

There is a DNA database in South Africa, but it contains so few profiles (about 120 000) that there is a less than 1 percent chance of finding a match. (The DNA database in the UK, which has over four million profiles and is still expanding, provides a 68 percent chance of a match within one year.)

The problem is an absence of legislation dealing specifically with DNA profiling. The existing database is governed by default by the Criminal Procedure Act, which was promulgated in 1977, before DNA profiling even came into existence.

This act has been interpreted to mean the following: DNA can only be taken from a suspect at the time of arrest, and only in the form of a blood sample retrieved by a medical practitioner. If the suspect is not convicted, the profile must be destroyed.

It is illegal to take DNA from an already convicted offender.



A sexual assault kit used for DNA testing in rape cases.

PICTURES: BONGGWE MCHUNU

"If you go into prison and try to take a blood sample, it's considered to be assault," said Lynch.

But a small percentage of the population is responsible for all the crimes in South Africa, so convicted offenders are the people who really need to be on the database.

The main sources of DNA recovered from crime scenes are blood, saliva and semen, but trace amounts can also be acquired from touched objects, such as the handle of a weapon or the steering wheel of a stolen car.

"When people are committing crime they are usually under stress and they sweat. They often touch a wall and through that (investigators) can pick up DNA," said Lynch.

South Africa also has a DNA dog, called Butch, which has been trained to sniff out bodily fluids not visible to the naked eye, like blood in between the cracks of floorboards that have been washed.

Butch will go and sit at the place

where he smells the bodily fluids.

We have increasingly sophisticated tools for recovering DNA from crime scenes but, without a known suspect, there is no way of linking the DNA to the perpetrator. We need to expand our database.

Enter the Criminal Law (Forensic Procedures) Amendment Bill.

South Africa is on the verge of introducing legislation that will enable police officers to take a DNA sample from arrested suspects in the form of saliva from a cheek swab or blood from a finger prick. All profiles will be retained on the national DNA criminal intelligence database, regardless of whether the suspect is convicted.

Police will also be able to add convicted offenders retrospectively. The DNA Project hopes this will further increase the chances of a match and also deter those who know they're on the database from future criminal activities.

In one Canadian province author-

ities offered to provide convicts with early parole if they gave DNA for inclusion on a national database, and the majority refused. According to Lynch, this shows those convicts either intended to go back to crime, or had been involved in other crimes, for which they had not yet been caught.

The new bill went to Parliament in January, and the portfolio committee was told to give it urgent priority but, after three months, Parliament went into recess due to the elections and the chairperson of the committee announced they hadn't had enough time to finalise the bill.

According to Lynch, the bill is likely to be passed, but because of the upcoming change of government, the process might take longer. Either the same portfolio committee will be reinstated after the national elections, or a new committee will be put in place and it will have to start from scratch.

DNA profiling might not work where identical twins are involved. This month, German police had to release twin brothers arrested for stealing R78 million worth of jewellery.

They knew that at least one of the brothers had taken part in the robbery, but because their DNA was identical, they couldn't prove which one.

There are concerns about the invasion of privacy, and a reluctance to have information about our DNA stored in the hands of the state.

But the DNA used to create profiles for forensic investigation is non-functional DNA – it doesn't reveal anything about the person.

Only 5 percent of our DNA is responsible for everything about us – our physical characteristics, personality and mental capabilities.

Scientists haven't found any purpose for the remaining 95 percent. An ID number gives away more information.

According to the DNA Project, the use of non-functional DNA, combined with the fact that it will be a legal requirement to destroy the actual samples – blood, saliva, semen – once the profiles have been stored in the database, means there's little to worry about.

Sceptics say there is still the chance that the creation of any kind of DNA profile is a step in the direction of more ominous forms of control. Think *Gattaca*, the 1997 sci-fi movie starring Ewan McGregor as a genetically inferior man in a society where the state defines what citizens can and can't do based on the quality of their DNA.

Lynch's answer is: "At some point you have to establish a point of trust, and move forward."

She thinks DNA profiling provides

a balance between our right to freedom from violent crime, and our right to privacy.

There are also the concerns that DNA might be planted at a crime scene, or contaminated after recovery – you can contaminate a sample with your DNA by coughing on it.

According to Hancock, investigators would pick up that there was more than one source of DNA, and that contamination was a possibility. Furthermore, DNA is never the only form of evidence in a case.

"There will have to be some other form of evidence. DNA evidence will prove that the person was there. That might be a huge piece of evidence, but it won't be the only evidence," said Hancock.

In 2002, double murder accused Colyn Ackerman, 25, was acquitted because the defence brought in experts who tried to discredit the procedures of the forensic laboratory in Pretoria where DNA testing had been done. Blood from one of the victims had been found on a knife allegedly owned by Ackerman.

In the end, the case was dismissed because the state witness who needed to testify about the safe handling of evidence was overseas on a study trip. Ackerman walked free.

In the UK, where a massive education drive took place about DNA testing, it's more difficult to question the procedures surrounding DNA evidence, and 85 percent plead guilty when they know there's DNA evidence against them.

The DNA Project says South Africa's new legislation will help bring us in line with the UK, and other countries.

Capacity remains a big issue, but the hope is that far more capacity will be freed by the increased efficiency that will be brought about by the new bill.

In the UK, a DNA expansion programme led to an additional two million profiles being loaded onto the national database over four years, resulting in a considerably increased hit rate. Similar expansion in South Africa could drastically change the face of crime prevention and resolution in the country.

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