

The second part of Locard's Exchange Principle

By Ryan Blumenthal

We all know of Locard's Exchange Principle – “Every Contact Leaves a Trace.”

Paul L. Kirk expressed Locard's Exchange Principle as follows:

“Wherever he steps, whatever he touches, whatever he leaves, even unconsciously, will serve as a silent witness against him. Not only his fingerprints or his footprints, but his hair, the fibres from his clothes, the glass he breaks, the tool mark he leaves, the paint he scratches, the blood or semen he deposits or collects. All of these and more, bear mute witness against him. This is evidence that does not forget. It is not confused by the excitement of the moment. It is not absent because human witnesses are. It is factual evidence. Physical evidence cannot be wrong, it cannot perjure itself, it cannot be wholly absent. Only human failure to find it, study and understand it, can diminish its value.”

(Chisum and Turvey, 2011; Thorwald, 1966; Petherick, 2009; BALLÁNE FÜSZTER, 2016; Paul L Kirk, 1953; Paul L Kirk 1963).

However, very few of us know the second part of Locard's exchange principle: **The degree of contact depends on the intensity, duration and nature of the contact.**

The **intensity, duration, and nature of the materials** of the contact will determine the extent of the transfer. These are important considerations to be kept in mind.

The intensity refers to the degree of strength, force or energy. The duration refers to the time during which contact continues. The nature of the material refers to substance of which a thing is made or composed.

Contact may be hard - *as a rock*, or subtle - *as a feather*. The more experienced and advanced you become in forensics, the greater your chances of detecting subtle contacts. So instead of expecting a *full fingerprint*, think in terms of a partial print.

So too with DNA

Forensic investigations are at a stage where it is possible that a DNA profile can be generated from a few cells that are transferred from merely touching a person. Known as **“Touch DNA”**, it is DNA obtained from biological material transferred from a donor to an object or a person during physical contact. No need for the transfer of bodily fluid such as semen or blood. This kind of evidence is beginning to play an essential role in forensic laboratory work and is considered an important new tool for investigators. The problem with using “Touch DNA” to prove guilt is that a person's DNA does not stay in one place – *skin cells move*. ...

“Touch DNA” is DNA obtained from biological material transferred from a donor to an object or a person during physical contact. This kind of evidence could play an essential role in forensic laboratory work and is considered an important tool for investigators. Imagine finding a dead person and using **sticky tape** on the whole body, mapping everything that transferred onto the victim. **Zone by zone**. Where the assailant grabbed the victim's wrists, the neck, etc. (Sessa, 2019).

Knowing this, it becomes obvious - **We must perform DNA profiling on ALL homicide victims!** We also must perform DNA profiling on all ‘hit-and-run’ motor vehicle accident cases.



Dr. Edmond Locard
(1877–1966)

Locard was a pioneer in forensic science who became known as the Sherlock Holmes of Lyon, France. Stated in another way:

“With contact between two items, there will be an exchange.”

He was the driving force behind the development of modern scientific and technical police. Edmond Locard was a criminalist in the classic sense, a forensic generalist, and he educated and changed the world with his multidisciplinary and scientific approach to systematic evidence analysis. Fingerprints (dactylography) was also contributed to by Locard.

This is the only way to catch a killer...

Once, I was consulted on a ‘hit-and-run’ motor vehicle case from the USA. The victim was a South African female who was killed in a pedestrian accident while in the USA. The driver fled the scene. After the incident, the driver drove his car to another state and went to a panel beater and said that a coconut had fallen onto his windscreen. Luckily the panel beater suspected something was afoot. He alerted the police. DNA from the windscreen connected with DNA from the victim.

The purpose of this communication is to **start the conversation**. **We need to make it mandatory that DNA be sampled on ALL homicide victims.** Whether there are open wounds or not, DNA should be harvested from ALL homicide victims.

For you never know where this trace evidence may lead...

References:

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Ryan Blumenthal, MBChB (Pret), MMed (Med Forens) Pret, FC For Path (SA) Dip For Med (SA) PhD (Wits) Senior specialist forensic pathologist and associate professor at the University of Pretoria's Department of Forensic Medicine.

His chief field of interest is the pathology of trauma of lightning (keraunopathology). Lightning medicine forms part of wilderness medicine. Wilderness medicine is about providing emergency care in remote settings. Wilderness medicine is important when considering climate change and the impact global weather systems have on humans, especially in resource-limited and resource-depleted communities.

He has published widely in the fields of electrocution, suicide and other areas involving the pathology of trauma. His chief mission in life is to help advance Forensic Pathology Services both nationally and internationally. Blumenthal has published 36 articles in peer-reviewed Journals. He has contributed Chapters to six international textbooks. He has written four books for the public. He is currently an NRF-C2 rated scientist.

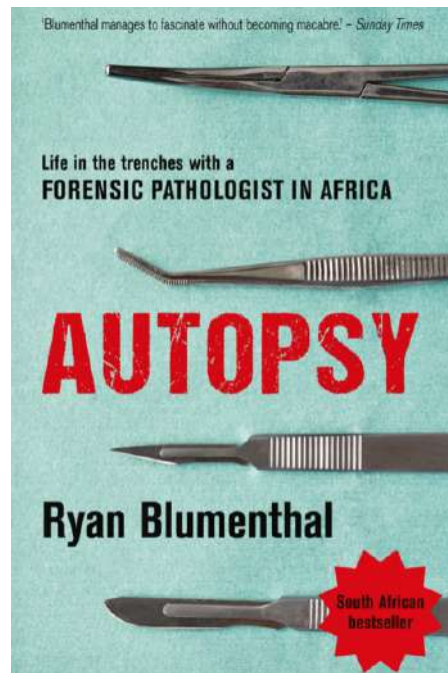
Resources:

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His book: 'Autopsy – Life in the Trenched with a Forensic Pathologist in Africa'
Jonathan Ball Books 2020.



His book '**Autopsy - Life in the trenches with a forensic pathologist from Africa**' (Jonathan Ball Publishers) launched August 2020 became a non-fiction best-seller in South Africa. It is currently in its seventh print and is being translated into Russian.



His eight-part documentary "**Lightning Pathologist**" (Channel 180 DSTV) aired 9 November 2020 to 20 November 2020, and was viewed by over 2.2 million people.

