

...AND NOTHING BUT THE TRUTH

**The
“perfect murder”
is an
imperfect
idea.**

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The notion that one can “get away” with a major crime – murder is the favorite example – is disappearing with every day that the world of forensic analysis gets better. The downfall of most criminals usually falls within a couple of parameters. Either the offender is arrogant and narcissistic to the point that he/she brags about his/her crime to other people, or he/she simply believes that he/she has done such a great job of destroying evidence that he/she will not be caught.

Back in the 1800s, this guy named Locard (you’ve heard of him, you just don’t remember) came up with a simple principle: Human beings who move from one environment to another always take something with them – and leave something behind. This means that my dog’s hairs are likely clinging to my shoes, socks and pants (he sheds a lot, but he’s worth it) when I leave for work. Those hairs are sure to be found in my car and at my workplace. They might even show up at the post office if I have occasion to stop there on the way home. Indeed, a fiber from the living room carpet of one of my students – deposited there

when he/she came to my classroom – might be carried from the classroom on the sole of my shoe to that post office or be found on the driver’s side floor of my car.

Locard and others have asserted that there is no such thing as a crime with no evidence; there are only investigators who don’t find it. Think of where we have come from Locard, who lived in the same era when another Frenchman discovered the uniqueness of fingerprints and their value in criminal investigations (what is it with these Frenchmen?). We have made exponential advances in forensic investigation. We’ve taken the work of Locard and other early pioneers and created separate fields of study, disciplines so focused and exacting that there are specialists we can call on to examine leaves, maggot pupae, fibers, or wood samples to help us determine crucial things like time of death or the strength of a suspect’s alibi.

In 1994, a construction crew in Germany uncovered the skeletal remains of 32 victims in a mass grave. Who were these people and how did they die? Historical research showed

two different occasions in which 32 victims were killed at the same time. One occurred in the spring of 1945 and the other in June of 1953. Someone familiar with forensic botany had the idea to swab the nasal passages of the skulls. Lo and behold, they found pollen from two different flowering trees. Forensic botanists who identified the pollen told investigators that these two trees flower and release pollen only in the summer months and that determined that the victims were Soviet soldiers killed by Russian secret police for refusing to break up an anticommunist revolt.

Who knew that pollen could last over four decades and still yield useful results? The experts, that’s who. Investigation sometimes takes someone to say, “Hey, let’s try this” to make a breakthrough discovery. As much as science plays a part, you need dedicated and often imaginative people in the mix to ask the “why not?” questions.

In 1986, investigators in the UK asked that very question to Dr. Alec Jeffreys. Dr. Jeffreys, a geneticist who studied DNA, had somewhat accidentally noticed in 1984 how DNA tests



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could be translated into unique “fingerprints” and actually show familial relationships with great accuracy. The investigators were working two murders of 15-year-old girls, both found raped and strangled on their way home from school. Do you think, they asked, we could use such technology to compare semen samples from our crime scenes to suspect DNA? It should work, Jeffreys told them, and it did.

The first time the Miami-Dade Police Department started to use this breakthrough technology was around 1987. At that time, you needed a drop of blood at least the size of a dime in order to do a comparison. We didn't have our own DNA lab then, so we had to send it to a lab in upstate New York. With the backlog of cases being submitted from all over the country, we were lucky to get results back in a month. Now, of course, all we need is a single skin cell to get a DNA profile and the labs can tell us sex, sometimes even hair color and other genetic information. Today, investigators on a murder scene can call on the expertise of forensic archaeologists, botanists, entomologists, soil experts, and any other scientific discipline you can name to help them with information.

Investigators, I tell my students, don't need to be forensics experts; they just need to be *resourceful*. Teaching them all about forensics is fun and cool, but teaching them how to find information themselves is another realm altogether. I blew their teenage minds the other day when I showed them what can be found by doing Clerk of the Court searches on property records, local civil and criminal cases, and business relationships through the state's division of corporations.

“This is creepy,” one of them said.

“Isn't this...stalking?” another one asked.

You guys, I told them, post pictures and videos of yourselves all over social media and you're worried about your house showing up on public property records? That is remarkable.

The wonder of all this is our ability

to step back and see 2023 as a pivotal moment in the advance of technology. These teenagers have something at their fingertips that no other generation has ever been able to use so robustly: Artificial Intelligence (AI). The property records, company filings, Florida State Prison mugshots, and jail bookings which they found so cool and creepy are all ground zero when it comes to free resources. The doors have been thrown open with AI and everything we've been used to doing to gather sources and data has just roared off the launch pad into areas we cannot yet fathom.

Is it “creepy”? I think we're past that. Is it cool? Sometimes. Is it here to stay? I submit that it has been since 1968, when Stanley Kubrick's *2001: A Space Odyssey* told us of the potential of AI, with a supercomputer which disobeyed the astronauts and took over a space mission (now that was creepy).

Today's students – that is, tomorrow's investigators, teachers and lawyers – will look back on today's information technology the way we look back at how we investigated before DNA and Google Maps. We are watching the dime-sized drop of blood shrink to a single skin cell in the blink of an eye. In the process, we are hopefully learning that, like a physical environment, everywhere we “go” in the cyberworld leaves something of us behind. There is no such thing anymore as information which can't be located; there are only people who haven't learned how to find it.

Locard would be proud. **P&SN**

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