Dutch scientists crack fingerprint dating riddle

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Image credit: Wikimedia.

Criminals' days may be numbered after Dutch forensic experts discovered how to accurately date fingerprints, a breakthrough that could one day let police date crime scene prints from years ago.

"It's not quite the Holy Grail of fingerprinting, but it's a very important discovery," Marcel de Puit, fingerprint researcher at the Dutch Forensic Institute (NFI), told AFP on Wednesday, hailing what he said was a world's first.

"Police regularly ask us if we can date crime scene fingerprints," he said, for instance a neighbour's prints found at the scene of a burglary.

Were they left the last time the neighbour came round for coffee or from the night of the crime?

"Being able to date the prints means you can determine when a potential suspect was at the crime scene or which fingerprints are relevant for the investigation," De Puit said.

Fingerprints leave nearly-unique marks on a surface that can be copied and compared to a database to identify a suspect, a police technique that rose to prominence in the early 1900s.

The prints themselves are made up of sweat and grease, including a complex mix of cholesterol, amino acids and proteins.

"The chemicals in these fingerprints can be analysed," said De Puit. "Some disappear over time and it's the relative proportions of these chemicals that allow us to date a fingerprint."

Previous attempts to crack the formula for dating fingerprints failed because they focused on the amounts of chemicals, rather than their relative proportions, De Puit said.

Taking into account the temperature of the original prints' surroundings, which affects the speed of deterioration, forensic experts can now date fingerprints to within "one or two days", up to 15 days.

The new technique needs to be extensively tested on real crimes scenes, leading to the creation of a database, before it can be used in prosecutions, hopefully "within a year", De Puit said.

As the database expands, so should the technique's reliability, allowing police to date fingerprints from several years before.

In the meantime, De Puit and his team are working on another revolutionary analysis technique: analysing fingerprint chemicals to determine a suspect's drug or food consumption.