

Commentary on: Lewis LA et al. Processes involved in the development of latent fingerprints using the cyanoacrylate fuming method. *J Forensic Sci* 2001;46(2):241–246.

Latent fingerprint detection is not the most common subject for the *J Forensic Sci*, so each published article is of great interest to the experts, especially if it discusses the very fundamentals of latent detection theory and practice.

The above-cited article contains a number of inaccuracies and disputable allegations. Following are a few examples.

“Since the late 1970s, cyanoacrylate esters have been used as an effective means of developing latent fingerprints.” At the late 70s Superglue was still an exotic method of latent fingerprint detection, known to a very small part of the forensic community.

“Prints developed by vacuum deposition tend to be translucent, requiring a secondary treatment such as fluorescent-dye staining for print visualization.” First, latents detected in vacuum are really more thin and delicate than those detected in a regular fuming cabinet, but they are not translucent. Second, they do not necessarily require a secondary treatment for visualization. And finally, the latents detected in a traditional fuming cabinet in many cases need additional treatment to be visualized.

“The fact that good quality latent prints were obtained at such low humidity levels was unexpected.” The authors are talking here about “freshly prepared” prints, placed on a very sensitive surface, such as “stainless steel planchettes and glass slides.” I would say that for the experts in fingerprint detection the result is not only predictable, but even routine.

In my opinion, the weakest point of the research by Lewis et al. is its methodology.

The “quality” of a latent fingerprint is a function of many variables, subjective and objective as well (1,2).

Subjective variables are related to the donor: his skin structure, nutrition habits, diseases, age, professional occupation, and emotional status at the moment of print application.

Objective variables include:

1. Transposal factors related to the surfaces (rough or smooth application surface; clean or contaminated donor fingers; force of pressure; velocity of lifting a finger from a surface; etc.).
2. Environmental factors related to the environmental conditions (temperature, humidity, exposure to dust, wind, sun, snow, and water).

So, one can imagine that when experimenting with latents, the only way to come to more or less conclusive results is to minimize, from the very beginning, the number of variables.

It seems to me that the authors did not take this fact into account. The consequences were critical for the research. The significance of the results, from my point of view, is questionable.

In addition, I have to mention that the article is written in a confused style. One had to reread the paper in order to link between methods and results, and to understand the core of the discussion.

In conclusion, I would like to emphasize the great importance of the fundamental researches in the field of fingerprints—physics and detection methods—and to encourage the authors to continue their work.

References

1. Thomas GL. The physics of fingerprints and their detection. *J Phys E: Scientific Instruments* 1978;11:722–31.
2. Lee HC, Gaensslen RE, editors. *Advances in fingerprint technology*. New York: Elsevier, 1994;67–71.

Boris Geller
Scientific Officer
Division of Identification Forensic Science
Israel Police National HQ
Jerusalem, Israel