



### A103 Forensic Science and the Concept of Relevancy

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After attending this presentation, attendees should understand the concept of relevancy in forensic science and crime scene investigation. The aim is to spark off an interest in thinking about this fundamental notion in forensic science in attendees and arouse their interest for the study of basic principles of forensic science. These objectives embrace the following positive outcome: a better understanding should help the process of forensic science in its investigative dimension and should improve elementary actions and thought processes applied on investigative scenes

This presentation will impact the forensic science community by discussing a combination of factors to improve the detection of relevant traces, that should help design training and education schemes.

Over 50 years ago, Kirk (1963) highlighted a serious deficiency in theory and basic principles. This was a realistic and serious analysis of the Forensic Science situation, and it is still relevant today. Despite the small number of studies that have discussed principles attributed to Kirk

and Locard, even fewer (none in the authors' view) have been dedicated to the concept of relevancy of collected traces.

Although obvious, the criminalist's vocation is to find, collect, and analyze relevant traces. From crime scenes to laboratories, working with relevant physical traces is a leitmotiv, and belongs to the thought process governed by the above two mentioned forensic principles. Focusing on the relevancy concept in Forensic Science, it goes far beyond a simple question of definition and Inman and Rudin (2000) did formalize the current conundrum that criminalists have to deal with: the most difficult challenge is "the recognition of relevant physical evidence," whereas it may be questionable whether the capacity to recognize objects as evidence would not have limits. Those limits pertain to the framework of interventions of criminalists: crime scenes are consecutive but not alike, being peculiar to every criminal activity, where resources are always limited (whether material, time, etc.). This forces criminalists/investigators to adapt to places and cases in order to find what is relevant. But how does it work? Actually, what is a relevant trace? Do all crime scene investigators perceive relevancy in the same way? And what will influence their perception?

These questions raise issues that go back to the very foundations of the (forensic) investigative process. This means discussing the elementary and indispensable piece of the forensic puzzle, the trace, and investigating what parameters could act on the criminalist's thought process in its detection and recognition, taking into account the crime scene environment. Arising from a research dedicated to the relevancy concept in forensic science, this presentation will focus on the links between trace, clue, evidence, relevancy, and crime scene investigators. Semiotics, and a brief state of the art, will help define the relevancy concept and introduce the fundamental, sometimes fuzzy and tenuous distinction between trace and evidence. This will stress the point that sets apart trace from evidence notions.

According to semiotic views, the relevancy concept could be defined as a trace-object perception on investigative scenes conditioned by context and by what the criminalist decides to recognize and use as features from (relevant) trace, i.e potential for transfer and for discrimination (identification). The trace is understood as a "vestige or marks remaining and indicating the former presence, existence or action of something," without any given meaning at this point, except that it is perceived as a potential source of information to explain issues in the investigated case. The trace becomes a clue when the criminalist recognizes the information content. It allows the examiner to make inferences with different alternative causes that give different values and meaning to the sign-trace. It is relevant when it gives information to the case while taking into account the context. It becomes evidence that is understood as information coming from the trace-object that "raises or lowers the probability of a proposition," i.e., gives confidence to decision making in deciding probable cause.

These meanings insist on the need to use proper terminology specific to particular steps of the forensic reasoning and positioning within judicial proceedings. Such an attempt in this differentiation is expected to help in the understanding of the thought processes applied in forensic science and to crime scenes.

This research aims to define a basic question which is difficult to measure. Exploring the meaning of forensic notions, while using a semiotic approach, can be a useful tool to help understand a concept which plays a fundamental role in Forensic Science and is born out once you leave the crime scene.

#### **Relevancy Concept, Trace, Evidence**