



### D39 The Relevance of Scientific Evidences in Criminal Investigations of Mafia's Crime: The Experience of "Capaci's Bloodshed" and the Murder of the Judge Giovanni Falcone

Massimo Grillo, MD\*, Filippo M. Cascino, MD\*, Antonina Argo, Livio Milone, PhD, and Paolo Procaccianti, PhD, Department of Biopathology, Medical and Forensic Biotechnologies, Via del Vespro, n. 129, Palermo, 90100, ITALY

After attending this presentation, attendees will learn the importance of using a strictly objective scientific method to collect evidence to solve complex judiciary cases concerning Mafia's crime.

This presentation will impact the forensic science community by presenting scientific data and images about the brutal murder of the Judge Giovanni Falcone during the so called "Capaci's Bloodshed."

For over thirty years, the Institute of Legal Medicine of Palermo has worked with the judiciary bench in order to obtain close to certain judgments about the causes of death and the instruments that have caused it, even and especially in range of many different crimes that the mafia committed. In regard of scientific and didactic function of forensic medicine, the Institute of Legal Medicine of Palermo finds it essential to highlight the importance of scientific evidence in any investigation relating to heinous Mafia's crimes. The goal of this research was to gather scientific data, not only forensic, but also those related to other sciences (ballistics, forensic genetics, judicial inspection), from forensics police and any other specialists in the most important killings by mafia during the past few decades.

On May 23, 1992 at 5:58 p.m., while the judge was returning from Palermo's airport, driving one of three armored cars that made up his

escort, he was killed by a violent explosion of TNT along with his wife Francesca Morvillo and three other men in his escort. Only after a thorough judicial investigation which included rebuilding the exact dynamics of events, the investigators were able to trace the names of the murderers who carried out the explosion. In particular, through careful analysis and thorough inspections of the sites, it was established that the car driven by Judge Falcone was placed in the middle in vertical line between the two escort cars; the group's first car with three bodyguards, a brown "Fiat Croma" was fully engulfed in the explosion, and remains were thrown over the opposite traffic lane. The second car, the white "Fiat Croma" driven by the Judge crashed against the concrete wall; Giovanni Falcone and his wife Francesca Morvillo were thrown violently against the windshield and both died during transport to hospital due to serious internal hemorrhaging, while the driver, who took the back seat, survived with no injuries. The bodyguards in the third car, a blue "Fiat Croma," escaped miraculously, as the people that at the time of the attack were passed with their cars in the highway.

Only after time, surveys suggest that the explosion was caused by a charge of five pounds of dynamite placed in a tunnel under the highway and that it was triggered remotely by Giovanni Brusca, an assassin commissioned by Mafia boss Toto Riina. Brusca was located on the top of the hill facing the highway. This location was discovered through a botanical survey carried out on some broken branches and through forensic tests carried out on cigarette butts found in large quantities there.

This work would show how often the resolution of complex legal and forensic issues is only possible thanks to scientific evidence that is relevant and conform to the rules of its scientific field of reference, accompanied by appropriate guidance to clarify the reading and interpretation of scientific data (e.g., specificity and sensitivity of a given test). In the research of the evidence, therefore, it can not be left aside a strict objective method so that, therefore, only a multidisciplinary approach (legal, forensic, and scientific), with the final purpose to collect scientific evidence, delivers the resolution of complex cases. **Scientific Evidence, Mafia's Crime, Giovanni Falcone's Homicide**