DNA PHENOTYPING: INTELLIGENCE AND THE JUDICIAL PROCESS

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Ribaux, Roux and Crispino (2016) explain the diverse range of activities within forensic science and the strong focus and oversight on those scientific capabilities directly relating to legal decision-making. The 2016 report of the President's Council of Advisors on Science and Technology quite deliberately focused on a subset of forensic science, namely feature-comparison disciplines. The 2009 National Academy of Science report adopted a broader approach as to the support of forensic science to 'intelligence, investigations, and operations aimed at the prevention, interdiction, disruption, attribution, and prosecution'.

DNA capabilities focused on phenotype and ancestry prediction use a scientific method, even arguably a comparative method in as much as it relies heavily on large datasets of known phenotypes and ancestries. However, the method exists within a forensic intelligence and investigative paradigm.

There are major differences in approach between DNA profiling and phenotype prediction in the way they interact with the justice system. Phenotyping can simultaneously assist at the front-end of an investigation as well as providing additional intelligence in cold cases. In almost all instances, however, its only direct contribution to legal decision-making is to support a finding in the absence of the suspect, such as probable cause for an arrest warrant.

Ribaux and Wright (2014) note the high contribution made by forensic science to the generation of intelligence. As phenotype prediction almost exclusively contributes in this way, it is timely to consider whether the framework applied to feature-comparison disciplines, and particularly to DNA profiling, should apply to this specialty field. Or does phenotyping and ancestry prediction exist somewhat anomalously within a strict, court-centric forensic science system?