

SCIENCE AND CONSCIENCE: REGULATION OR GUIDELINES FOR FORENSIC HAEMOGENETICS?

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INTRODUCTION

Since the earliest endeavors by man, there has been confrontation between the advances of science and the views and opinions of society. History is replete with examples of conflict between science (or scientists) and society, e.g., Socrates and the Athenian government, Galileo and the Church, and the use of atomic energy and the implications of world destruction. Usually technical questions are resolved, after some debate and discussion, when a general consensus is reached by the relevant scientific community. However, social opinions remain unresolved for longer periods of time and can vary substantially among peoples. These apparent conflicts are not necessarily bad, but they do pose questions for one to consider.

It is in this atmosphere that one should consider the use of DNA typing technologies for exculpating or inculpating individuals associated with crime scene evidence samples or for resolving paternity matters. On one hand, DNA technology is going to be employed to resolve criminal and parentage matters; it would be a shame if innocent people could not avail themselves of such a powerful tool and if society could not use the DNA typing methods to assist in identifying perpetrators of heinous acts. On the other hand, society needs to be concerned about potential abuses of the use of DNA typing tools and results that may infringe on the rights of individuals. Some of the problems between these points of view can be resolved by better educating the lay public. Some of the issues are generally not part of science, but are judicial, legal, religious, ethical, and/or philosophical. However, scientists also have a responsibility to promote the necessary discussions and to reflect on the pertinent social implications.

The forensic analytical investigation is carried out in a scientific frame (e.g., with the use of validated protocols and/or standard operating protocols, and under QC/QA guidelines) which is contained within the legal systems of society. The interaction between the analytical aspects and the legal system of society. As a general framework for discussion in this paper for the use of DNA analysis within the criminal justice system(s) in Europe, one can refer to the Recommendation No R(92) of the Council of Europe, Committee of Minister.

We believe that the elements that should be considered by domestic legal systems are:

i) Means: human and technical considerations for standardization of DNA analysis methods and National and/or International levels.

ii) Evidence and samples should be collected and handled according to domestic laws maintaining scientific and legal guarantees.

iii) People involved: suspect in a criminal investigation and the information related to group people.

As an example, one may have to consider obtaining a reference sample from a suspect where consent may be an issue. In some legal systems the rights of the individual might be compromised, if acquiring a sample may deny liberty of movement, physical security, no self-incrimination, and presumption of innocence. There is some debate in some jurisdictions whether or not samples from suspects can be taken by use of force, or by consent, or by invoking probable cause, or being able to obtain samples at all. Some have circumvented these issues by obtaining samples in an indirect manner from hairs, a toothbrush, biological materials left in a prison cell, or indirectly from relatives. Others have suggested obtaining DNA from clinical samples, if they exist, that originated from the suspect.

There will be limits to resolving issues such as obtaining reference samples that may fall under ethical rules, not just under legal rules. Ruiz Vellido, Judge of the Spanish Supreme Court, stated that *"Truth is not an absolute principle that has to be investigated at any price"*. Moreover, Roxin affirmed that *"an exhaustive and unlimited clarification of what has happened could pose a danger for many social and personal values. For these reasons the investigation of the truth is not an absolute value, rather the investigation is within the hierarchy of ethical and judicial values of the State"*.

Genetic databanks - Three types of genetic databases that may be considered for forensic identification are:

i) General - involving the whole population with no distinction for obtaining samples.

ii) Risky professions - which may include such occupations as airplane pilots and military personnel.

iii) Criminal - which may include convicted offenders, suspects, victims, profiles from unsolved cases, and profile to resolve missing children cases.

Issues regarding which of these groups, such as general databases or suspects who have not been convicted, can be typed and their profiles stored may have to be considered.

DNA profile databases is the collection of people in the databank, which in actuality is a sum of individuals, and the individual rights of these people versus the right of society will have to be weighed. Generally, there are little problems to be encountered when using DNA profile data from the types of genetic markers used in forensic that might infringe upon and

individuals rights (Recommendation 3 of the Council of Europe). However, there should be safeguards that the information (or DNA samples) maintained in the databases is not used in a manner other than the legitimate aims or scope of the databanks.

Scientific reflections - Scientists, at times, tend to have difficulty accepting the fact that some lawyers may attempt to confuse issues or present false arguments. However, as stated well by James R. Wooley "*Defendants have an absolute right to attempt to obscure or hide the truth about DNA testing in criminal cases*". While the courtroom may be where some of the immediate contact issues are made, society may have additional concerns (whether or not the concern are legitimate). These may include:

- i) physical harm
- ii) genetic manipulation
- iii) potential associations with disease
- iv) standards versus standardization
- v) regulation and safeguards of abuses
- vi) what types of people (convicted felons, suspects, etc.) should be in a databank.

It is apparent that domestic laws and commissions will have to define what is the legal framework for DNA typing. All decisions may have to be tempered based on ethical standards as well. Perhaps scientists could make an effort to educate the lay person regarding science, as well as educate themselves on the concerns of considering the use of DNA typing for human identification. Despite these attempts there will always be debates and resolutions that will affect the progress of science, the rights of the individual, and the rights of society.

REFERENCES

McEwen JE, Reilly PR (1994) A review of State legislation on DNA forensic databank. *Am J Hum Genet* 54: 941-958

Council of Europe. Committee of Minister. Recommendation No. R(92)1. - On the use of analysis of DNA within the framework of the criminal justice systems.