

Articoli/Articles

THE ROLE OF DNA AS SCIENTIFIC EVIDENCE

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SUMMARY

Criminal trial has recently been focusing on scientific evidence, in particular DNA evidence ensures reliable results. Peculiarities of this evidence cause a discussion in the search for a balance between individual guarantees and efficiency of criminal justice. This is regulated by Italian Law 85/2009, following the Treaty of Prüm. There are four main critical aspects related to this legislation. 1) Coercive nature of the DNA sample, that in certain conditions is taken without consent. 2) Individuals whose DNA samples are taken from: suspect, victim, but also third parties or even a larger number of people like in the case of “mass screening”. 3) Privacy: entire families are exposed to unexpected discoveries and to their diffusion by media. 4) Reopening of the trial after definitive judgment: DNA can be used as “new evidence” to justify reopening of the case after conviction, but this can never happen in Italy after an acquittal.

A. *Scientific evidence and DNA*

Introduction

We define as “scientific” evidence that which, starting from a demonstrated fact, uses a “scientific law” to verify the existence of a further fact to be proved¹.

Key words: DNA - Criminal - Proceedings

The criminal trial has recently been characterized by valorization of “scientific evidence”. The loss of centrality of witness statements in favor of the employment of technological innovations and new evidential tools has followed rapid scientific evolution which gives increasingly significant contributions to investigation.

In particular, DNA evidence ensures particularly reliable results; indeed, during criminal proceeding it happens more and more often that the “genetic profile” obtainable from the finding of biological material of unknown origin, recovered at the scene of the crime, on things pertinent to the crime or on the person that is the victim of the crime, must be compared with that obtainable from a finding or a sample of biological material certainly belonging to the suspect or to another person whose identity is known, for the purpose of verifying whether or not the two profiles coincide, and therefore whether the biological materials compared originate from the same person.

The subject is disciplined in Italy by Law 85 of 2009², with which Italy adhered to the Treaty of Prüm on cross-border cooperation in the fight against terrorism, cross-border organized crime and illegal migration, adopted on 27 May 2005 by Belgium, Germany, Spain, France, Luxemburg, The Netherlands and Austria and in force since 1 November 2006.

The treaty aims at circulation of useful information for carrying out investigations and allows authorities in other states to access data on DNA filed in Italy, just as Italy can access data collected by the other countries adhering to the treaty.

In this way, it is easier to identify people who have committed crimes and to identify missing people; the fact is that it has been ascertained that “DNA cannot change in any individual despite the passing of time: in addition, the markers that are used for typing the genetic profile possess a very high capacity for differentiation of individuals”³.

With the approval of the law of adhesion to the Treaty of Prüm, Italy too created a “Central Laboratory for the DNA database” and the

“National DNA database”⁴, containing an indexed collection of genetic profiles (DNA) taken from:

1. persons to whom the measure of remand in prison or that of house arrest has been applied;
2. persons caught red-handed, or arrested on suspicion of a crime;
3. persons detained or interned as a result of a final judgment for a crime committed intentionally;
4. persons in relation to whom an alternative measure to detention is applied following a final judgment for a crime committed intentionally;
5. persons to whom, either temporarily or permanently, a prison security measure is applied⁵;
6. biological samples collected during criminal proceedings;
7. missing persons or their relatives, from unidentified corpses and cadaverous remains⁶.

Article 9 of Law 85 of 2009, at paragraph 2, identifies the cases in which the taking of sample is not allowed: it is only allowed in relation to people under investigation, and people accused or sentenced for voluntary crimes, for whom at least optional arrest is allowed if they are caught red-handed. In addition, there is a list of offences for which taking samples is not allowed.

Coerciveness of DNA sampling

One of the most critical points concerns the coercive nature of the sampling of DNA⁷ which, in particular conditions, is also carried out without “consent” by the party involved.

The most detailed regulation obviously concerns sampling from people whose personal freedom is in any way restricted, who are submitted to coercive sampling of mucus from the mouth.

During the criminal proceeding, there are 3 cases in which it is allowable to characterise genetic profiles that a judge, a public prosecutor and the investigative police can afterwards compare with those filed in the national DNA database.

First of all, the genetic profile can be obtained with “coercive” sampling from the suspect or from a third party, of hair, hairs or mucus from the mouth, by the judge or the public prosecutor: this is sampling of which the criminal procedure code specifies the requisites, the prohibitions and the limits⁸.

In this regard, Art. 24 of Law 85/2009⁹ introduced into the Code of Criminal Procedure art. 224bis, which states:

In proceedings for an intentional crime, committed or attempted, for which the law prescribes life imprisonment or imprisonment up to a maximum of three years and in other cases expressly provided by law, if for execution of the test it is necessary to perform acts which may affect personal freedom, such as removal of hair, hairs or oral mucosa from living persons for the purpose of determining the DNA profile or medical tests, and there is the consent of the person to be examined by the expert, the judge, ex officio, with a reasoned order establishes compulsory execution, if it is absolutely essential for proving the crime.

Article 25 of Law 85/2009 also introduced art. 359 bis, which states:

Subject to the provisions of art. 349, paragraph 2 bis, when the operations referred to in Article 224 bis must be carried out and there isn't the consent of the person concerned, the prosecutor must submit a request for it to the judge for preliminary investigations that authorizes by order when the conditions provided therein exist.

In urgent cases, when there is reason to believe that delay is likely to cause serious or irreparable damage to the investigation, the prosecutor orders the performance of the operations with a motivated decree [...] taking care to order compulsory accompaniment, if the person to be subjected to the operations does not present themselves without giving a legitimate impediment, i.e. compulsory execution of operations, if the person refuses to be subjected to them. Within forty-eight hours the prosecutor asks the

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judge for preliminary investigations for validation of the decree and any compulsory accompanying measures. The judge shall issue the order as soon as possible and no later than forty-eight hours, immediately giving notice to the public prosecutor and the defending counsel¹⁰.

Secondly, the genetic profile can also be obtained with sampling, “by consent” of hair, hairs or mucus from the mouth, by the judge or the public prosecutor or the investigative police: in this case, the criminal procedure code (the reference is to Articles 224, 354, 359 and 360) does not contemplate any requisites, prohibitions or limits; further, sampling can be ordered in a procedure for any crime and destruction of biological sample is not contemplated.

Lastly, the genetic profile can be obtained with “coercive” sampling (of hair, hairs or mucus from the mouth), by the investigative police, solely for the purpose of “identification” of the suspect: in this case too, the criminal procedure code does not contemplate any requisites, prohibitions or limits; further, sampling can be ordered in a procedure for any crime and destruction of the biological sample is not contemplated.

Under Article 349, paragraph 2 *bis* of the Criminal Procedure Code¹¹, the judicial police may proceed to identification of the person under investigation, also undertaking collection of biological material, hair or saliva; it can be ordered prior consent, or coercively, but in respect of the personal dignity of the subject, and following prior written consent of the prosecutor, or delivered orally by him and confirmed in writing. In this regard, it was noted that, despite the silence of the law, it must be held that the prosecutor’s authorization must be motivated, as well as requiring the retention of “reasoned decision” in the matter of restrictions on personal freedoms under Article 13, paragraph 2 of the Constitution¹².

Paragraph 4 of art. 9 of Law 85/2009 law establishes that operations are to be performed by specifically trained personnel of the police forces or by auxiliary health personnel of the investigative police, with full respect for the dignity, the decorum and the privacy

of anyone submitted to this procedure; furthermore, a written record is made of the sampling operations.

If the sampling has been carried out violating these regulations, mandatory deletion of the DNA profile and destruction of the relevant biological sample is foreseen.

The sample taken is immediately sent by the personnel conducting the procedure to the central Laboratory, for characterisation of the relevant profile and subsequent transmission to the national DNA database.

If there is acquittal by a final judgment because the action does not exist, because the defendant has not committed it, because the action is not a crime, or because it is not considered by the law as a crime, the law requires deletion of the DNA profiles acquired under Article 9 and destruction of the relevant biological samples: in all other cases, including the possibility of “archiving” of the procedure or “prescription” of the crime, they remain in the database.

Preservation of biological samples and privacy

One of the main problems concerns “protection of privacy”. The fact is there is no doubt that the creation of a database creates a problem for protection of “privacy” as regards both storage of the data and its presentation at the criminal trial.

First of all, Article 12, paragraph 1 of Law 85/2009 establishes that “DNA profiles and the relevant samples do not contain information allowing direct identification of the person they refer to”.

Furthermore, filing must only have a goal of personal identification: indeed, paragraph 3 of Art. 11 of Law 85/2009 stipulates that “the analysis systems are exclusively applied to DNA sequences that do not allow identification of the pathologies by which the party may be affected”.

Finally, the maximum term of storage, following which “deletion” takes place, is 40 years “from the last circumstance that determined its insertion” for DNA profiles and 20 years “from the last circumstance that determined their collection” for biological samples.

These long periods were established on purpose to guarantee the effectiveness of the use of the “databases”, especially in identification of people that commit several crimes, of the same or a different kind.

B. Three specific topics

Investigative practice of so-called mass screening

Genetic data sampling practice, with so-called mass screening, has progressively improved. According to this practice, sampling is carried out on someone who appears to be extraneous to a crime: it is a strategy that can have exploratory purposes or aims at eliminating suspects and is often adopted when investigations have come to a “dead end”, or when there is not even a suspect. In these cases, however, the risk is that investigations will proceed through “random” searches, carried out on a wide and undefined range of people¹³.

The trend of carrying out more or less wide population “sampling” is observed in many different countries¹⁴. In this regard, there could be a real risk of a sort of “investigative laziness”, by using scientific/technical tools in place of traditional investigative methodologies¹⁵. In relation to this theme many issues rise up.

The most delicate profiles concern protection of involved people and their individual freedom.

A relevant issue concerning mass screening is Privacy. Mass screening can provide information regarding families, confidential matters and, for instance, blood relation previously ignored. Result can be highly disruptive also considering fast media diffusion of investigative outcomes¹⁶. These researches can lead to the discovery of the perpetrator of a crime where correspondences are found, even partial ones, between the DNA found at the crime scene and that of the people submitted to sampling. It is in these terms that mass screening proves to be useful for investigation purposes. Nevertheless, the operation must necessarily be linked to the smallest possible sacrifice of personal freedom caused by the collection of hair or hairs¹⁷.

Actually, there are doubts both about the legitimacy of so-called mass screening and the usability of data referring to a relative not submitted to DNA sampling.

A critical point concerns consents by tested people¹⁸. In some countries (e.g. Great Britain and USA) the use of mass screening is widespread but only with the cooperation of persons not related to investigations, who are asked for consensual transfer of biological samples: this type of collecting activity cannot be object of a coercive measure by the judicial authority and a person not involved in the investigations can legitimately refuse¹⁹.

The problem in this case concerns one's right of refusing a test and mostly the consequences of this refusal. According to the different national systems, indeed, the refusal can origin a suspicion that can negatively affect the interested person if diffused by media; or it can bring to open investigations towards the subject that refused the test, although the refusal isn't criminally liable²⁰.

Moreover, a peculiar aspect concerns providing preventive information to the donor. The donor should be preventively warned about the possible involvement of his or her relatives or other people belonging to his or her biological group: the fact is that the donor, thanks to his or her genetic profile, could involve in the preliminary investigations a person genetically linked, without this person being aware of it or being able to refuse.

In certain cases, in Italy too, there has been an investigative experience on a "consensual" basis: specifically, in the case of murders in small places the technique of genetic mass screening has been used with the help of the inhabitants of the area, spontaneously obtaining a series of biological samples including that, later proving decisive, of a relative of the murderer.

In these cases, every tested individual makes it possible to orient investigations towards a specific family or biological nucleus, whose genetic characteristics he or she shares with. In this way, the familiar

genetic situation is utilized for investigative goals. Nevertheless, this can violate privacy right, as it has also been observed by the European Court of Human Rights²¹.

In this respect, there has been a lot of discussion around the possibility of advocating for the “right to silence”, the “right to avoid self-incrimination”, and the “right of protecting family feeling”. As a rule these rights are recognized to witnesses, limiting their obligations to answering and reporting the truth, in order to allow people to protect themselves, or their relatives, against possible indication of guilt. According to a protectionist perspective, in the sphere of interpretation, attempts are sometimes made (unsuccessfully) to extend these guarantees to the situation in which a person is incriminated following the collection of biological material²².

There is also discussion on the legitimacy of biological sampling carried out “fraudulently”: that is to say, with subterfuges contrived by investigators (for instance, offering a person some water), or using biological material previously taken (for instance, for diagnostic purposes), or simulating checks of another type (for instance, through breathalyser, to detect alcohol level). These hypotheses have to be considered in each single case to appraise their conformity with arts. 188 and 189 of the Italian Criminal Procedure Code: the latter requires respect for the person’s freedom of self-determination and moral freedom, as well as for the modalities established by the judge after consulting the parties. Besides, the aforesaid systems bypass the previously described (first part of this essay) rules, foreseen by art. 224 *bis* of the Criminal Procedure Code, concerning coercive sampling in alternative to consent²³.

Formation of the judge’s internal conviction

The second point to be considered concerns the formation of the judge’s internal conviction. The result of the DNA analysis strongly characterizes the initial phase of the procedure, in particular the very first investigations, at the crime scene. But it is not sure that the

“weight” of this evidence will remain unchanged during the trial. Specifically, it has to come to terms with the presumption of innocence/absence of guilt (art. 6 ECHR/art. 27 Italian Constitution) and above all with the criterion whereby the accused person to be condemned has to be proven guilty “beyond all reasonable doubt” (art. 533 of the Criminal Procedure Code)²⁴. The results of the DNA test can in many respects represent a sort of “experience maxim” able to guide the formation of the “free conviction of the judge” in the sense that starting from a “certain” fact they make it possible to obtain “uncertain” elements as a consequence²⁵. Nevertheless, during the evaluation by the judge different profiles can weaken the “weight” of this evidence and negatively affect the reliability of genetic tests²⁶. Furthermore, it can be difficult to specifically identify the moment in which traces were left at the crime scene (because of the impossibility of dating the collected DNA). And it can also happen that protocols related to collecting, keeping and analysing samples aren’t strictly observed. These aspects of weakness, in presence of such an evidence, pointing in opposite direction (like witness statements), can lead to an outcome of the trial that surprisingly clashes with the first evidential results (this happened, for instance, in well-known cases like the “Perugia” and “Garlasco” ones)²⁷.

In conclusion, scientific evidence is often a fundamental point in the first part of the procedure, but is then belied at the end of the trial. This means that it is dominant above all in special accelerated proceedings, like the summary proceeding fast-track trial (*giudizio abbreviato*). An example is the already mentioned “Perugia case”(also called “Meredith” case), in which scientific evidence “nailed” the only suspected who chose this form of trial²⁸.

The possibility of reopening a trial that has been definitively concluded, in consideration of “new” scientific evidence

The last point to consider concerns the possible reopening of a trial on the basis of “new” scientific evidence. Because of rapid evolution

of the scientific research, sometimes, after the definitive conclusion of a trial, new scientific investigative techniques are discovered challenging results of judicial trials that are concluded. In our legal system, a definitively closed trial can be reopened through a so-called “revision”(revisione). But it is an exceptional remedy and can only be used to overturn a conviction, and only in some very specific cases. In the latter profile what is relevant is art. 630 of the Criminal Procedure Code, which, among cases for which revision is possible, includes those in which “new evidence” emerges.

The peculiar point is clarifying what is intended by “new proof” and if it is also possible to consider such a proof already acquired during the trial, which however in the meantime has been the object of a scientific evolution.

In other words, the doubt concerns the possibility of reopening the trial on the basis of evidence of a scientific character that is not “new” in a strict sense (having already been used in the trial that has ended), but can be revisited exploiting a new method that allows examinations that were not possible at the time of the previous judgment.

On this subject, the European Court provides an orientation that is inclined to allow this kind of revision of decisions²⁹. After the first resistances, Italian jurisprudence too has become more flexible in allowing the reopening of a case, though with some specifications: the “new” method has to be *a)* accredited and made fully reliable by the scientific community; *b)* suited to reaching different results from those attained in the trial that has ended³⁰. Specifically it is deemed necessary that on the basis of new methodologies and new principles it is possible to attain “knowledge of new facts and not merely of different evaluations”³¹. This has been affirmed, particularly, on the subject of DNA analysis of hair formations, seen as “new evidence” with respect to the hair examination carried out in the previous judgment.

The problem is different when there is the prospect of reopening a trial after an acquittal: in this case, because of the need for certainty

of rights and to guarantee stability of acquittal, in our legal system reopening of a case is excluded; and it is so even when there is a confession or “overwhelming” scientific evidence. The problem has been faced above all in those countries that, unlike Italy, in general contemplates some possibility of reopening a trial *in malam partem*. In Germany, where a trial can also be reopened after an acquittal (for instance in a case of confession), there has been long discussion on the introduction of a cause of revision of a sentence valorising the results of “DNA test”. A bill has been presented but has been never approved; and the topic comes back into limelight when there are striking cases in which it might be possible to overturn an acquittal. The fear is that the uncertainties linked to this situation and the difficulty of defining the necessary criteria and specific hypotheses for revision would make acquittals too unstable³².

Conclusion

The above considered three specific tools show that the powerful entry of scientific evidence into criminal trial is a phenomenon that still needs to be metabolized. The first enthusiasms alternate with awareness of the snares of an unconditional faith towards the DNA instrument. It is an instrument that can challenge traditional trial dynamics and, as it has just been said, “granitic” categories like that which informs certainty of judgement. In conclusion, DNA evidence is as important as it is dangerous: it allures and flatters the first investigations, but then has to reckon, like all other proofs, with the method of the debate between the parties and the principles of the criminal trial, with the “resistance” of definitive decisions (especially acquittals), but above all with fundamental diffidence. It is diffidence that, to be overcome, needs time and consolidation of certainties. For if it is true that scientific evidence and, in particular, genetic DNA profiles can play a remarkable role in the criminal trial, “to shorten” the times of the “pathway to truth” and to reduce the area of the “rea-

sonable doubt”, it is also true that not even the results of scientific evidence “take ascertainment to the peaks of absolute certainty”³³.

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8. On the subject see CURTOTTI D., *Rilievi e accertamenti tecnici*. Padova, CEDAM, 2013; see also CURTOTTI D., SARAVO L. (edited by), *Manuale delle investigazioni sulla scena del crimine*. Torino, Giappichelli, 2013; CASASOLE F., *Le indagini scientifiche nel processo penale*. Roma, Dike Giuridica, 2013.
9. Paragraph 4 of Art. 24 provides that “In no circumstances can operations be ordered that contrast with express prohibitions laid down by law or ones which may endanger the life, physical integrity or health of the person or of the unborn child, or that, according to medical science, can cause suffering that is not negligible”; paragraph 5 also establishes that “Investigative operations are to be carried out in respect of the dignity and modesty of those who are subjected to them. In any case, to achieve the same results, less invasive techniques must be chosen”. Finally, paragraphs 6 and 7, prescribe – respectively – that “The use of physical coercion is permitted only for the time strictly necessary to the execution of sampling and detection” and that “The act is null if the person subject to the taking of samples or the tests is not assisted by the appointed defense counsel”.
10. See also art. 72c of the implementing rules of coordination and transitional provisions of the Criminal Procedure Code, introduced by art. 29 of Law 85/2009, according to which: “Upon completion of the examination of biological samples, in accordance with Article 224 *bis* of the Code, the judge orders immediate destruction of the sample, unless considered essential. Destruction is carried out by the expert who carried out the analysis thereof, who shall draw up minutes to attach to the file. After the definition of the procedure with a filing decree or after the event of conviction no longer subject to appeal, the Clerk of the Court shall, in any case and without delay, undertake destruction of biological samples taken in accordance with Articles 224 *bis* and 359 *bis* of the Criminal Procedure Code”.
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