Locating judicial uses of genetic testing in paternity cases[1]

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Since the late eighties technological advances in genetics have been associated with new forms of interaction between the social worlds of law and science[2]. One of the outstanding features of the recent history of family law is the growing use of forensic technology, such as DNA typing in the course of paternity suits. This paper is about the use by courts of blood tests and DNA profiling to determine the biological paternity of a child[3] by examining the sort of social relationships, cultural repertoires, narratives, interests and values that are reproduced and evoked in this particular context. My fieldwork consisted of direct observation of courts trials concerning judicial investigation of paternity in one Portuguese court of law during a two-year period, the use of content analysis of more than 1400 cases of paternity suits and of interviewing judges.

Accepting the currents of thought followed by cultural anthropology for quite a long time, that the reproduction of human beings is also the reproduction of social relationships (Strathern, 1995), this study, being rooted in a tradition of feminist legal studies, explores the social relationships which are reproduced by the courts of law and

[1] Author's note: an earlier version of this article was presented on a seminar organized by the Department of Sociology of the University of York, on in February 2005. Many thanks to the members of the audience for their input.

[2] The use of DNA profiling as evidence began in USA in the late 1980s, with the 1987 rape case *State of Florida v. Tommy Lee Andrews.*

[3] This article results from two projects of which the author is the principal researcher being undertaken at the University of Minho (Braga, Portugal) and funded by the Foundation for Science and Technology (Portuguese Ministry of Science and Technology) respectively entitled 'Law, science and institutional

evoked in the context of paternity investigation - such as representations of paternity, maternity, family – that highlight the ideologically dominant gender relations, interpreted as means of reinforcing the socially subordinate position of women. It will be argued that this apparently neutral technique – DNA profiling by which the court can establish, with a high degree of certainty, whether a man has a biological connection to a child – is used in a way which reinforces conventional gender relations.

In the words of Gillian Douglas (1991), legal regulation of reproduction mainly reproduces patriarchal structures in society. This seems to be emphasised by the phenomenon of children born outside marriage articulated together with the uncertainty of biological paternity. As she points out,

'On a more basic level, while women have almost total power over reproduction, because they bear the child, they have been unable to make use of this power. No man can be certain if a child is his, sort of having genetic testing to find out. But all women, until the past decade, have known that the child they carry is 'theirs'. Patriarchal structures in society might be said to be based on the desire of men to seek to control this power that women have, to try to ensure that a child belongs to the right man.' (Douglas, 1991: xix).

The uncertainty of biological paternity, often reinforced by assumptions about women's predilection for deception in reproductive matters (Diduck and Kaganas, 1999: 130) has always posed complicated problems for legal systems in Western Europe that based ownership and inheritance of property on descent through the male line. Carol Smart puts it in these terms: '[Historically], paternity has been a continuing 'problem' for the patriarchal family in Western Europe (…) and this is manifest in the

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control of women's sexual and procreative behaviour' (2000-2002) and 'Judges and new technologies: interactions, mediations and ambivalences' (2003-2006).

tortuous complexing nature of the legal system designed to protect the descent of property and privilege' (Smart, 1987: 99).

In the western world the legal response to the phenomenon of the uncertainty of biological paternity as been the 'presumption of legitimacy', or the 'presumption of paternity' which ties men legally to any children born to their wives (Diduck and Kaganas, 1999). In other words, even if there isn't a biological tie between the child and the mother's husband, he is the legal father and in most countries people have to bring private civil proceedings in order to remove that presumption of paternity. But the problem remains regarding children born outside marriage. If the unmarried father voluntarily registers the child's birth with the mother he will automatically be recognised as being the legal father. The problem is when the birth certificate doesn't indicate the identity of the father of the child.

Although family law and civil proceedings concerning investigation of paternity may vary in the diverse national legal systems[4], almost all societies now support efforts to establish parentage. Although the degree of support varies from country to country, today there is a general consensus that parentage should be established and increasingly the legal systems in the occidental world have taken on board contemporary privileging of biological relationships over marriage (Smart, 1995).

Even before the considerable advances made by forensic biology in the realm of investigation of biological paternity, courts could determine the paternity of any child in the course of existing civil proceedings regarding the child – those affiliation proceedings required that a woman's testimony regarding her child's paternity be

[4] Several European countries, such as Scandinavian countries, Germany and Portugal have compulsory inquiries of paternity when the birth certificate of a child under two years old does not show the identity of the father. Other countries just give the court the power to investigate paternity in the course of existing civil proceedings regarding the child. That is the case in UK, where section 27 of the Child Support Act allows the Secretary of State or the person with custody to apply for a declaration of parentage of the child.

corroborated (by documents such as love letters and testimonial evidence). Even so, almost all of the affiliation laws in western European countries protected the 'legitimate family' and there were very limited conditions for admissibility of a paternity investigation and it was almost impossible to recognize paternity in the case of a married man. In effect, law almost appeared to have been designed to give the putative father a 'sporting chance to get away with it' (Barton and Douglas, 1995: 200). But things have changed and one of the outstanding features of the recent history of judicial investigation of paternity is the growing use of genetic profiling. In fact, during the last four decades Family Law has undergone profound modifications all over Europe, which on one hand ended the disparity between children born in and outside wedlock and on the other hand established the admission of results of scientific exams of biological investigation of paternity as evidence.

These modifications of affiliation laws (which didn't represent such a big change for countries such as Denmark, Norway and Sweden that already had a considerable tradition of fighting against the discriminatory status of illegitimate children and against the discriminatory status of unmarried parents) are a reflection of a set of conditions that occurred in nearly all European countries, namely the considerable advances seen during the 70s in biological sciences and particularly in the realm of investigation of biological paternity, which culminated with the advances in genetic profiling in the late eighties namely by Alec Jeffrey's method of genetic fingerprints, in 1985. The progress of biological sciences enabled paternity or non-paternity to be proved and, on a par with these scientific advances, there were important ideological changes, translated into a greater concern for biological truth in establishing paternity, together with the defence of the rights of the children born outside institutional marriage. At the same time there was increasing intervention of the State in

areas such as protection of the child and control and promotion of the need for sharing parental authority (Meulders in Eekelaar, 1993). Especially relevant was the European concern over the rights of children born outside marriage, which is expressed by the 1975 European Convention on the Judicial Statute of Children born Outside of Wedlock that specified the need for the member states of the European Council to adopt common judicial measures on this matter. In fact, nowadays, regarding affiliation laws Western European legal systems have some common legal dispositions which have taken on board contemporary privileging of biological familial relationships over marriage which have been accompanied by the fact that DNA profiling is indeed becoming increasingly important as part of the judicial investigation of paternity. The rhetoric which has involved the ideology of a 'more technological justice', invoking a fast dissemination of the uses of forensic technologies such as DNA typing in the context of judicial activities argues that the current use of those artefacts will provide some obvious advantages for all (legal actors and court customers), such an increasing effectiveness and promptness of the administration of justice.

Some authors point out social, economic and medical reasons for the States to develop their efforts to establish parentage,

'Research has shown that knowledge of its origins (i.e. who its parents and other relatives are) is essential to the healthy development of the child. In some cases not knowing this can cause severe psychological problems and at worst cause mental illness (…) There are also medical reasons for establishing parentage, the main one being to enable the child to know if it might have any hereditary diseases (…) In most countries, however, the main reason for seeking to establish parentage is economic. The parents are supposed to pay for the living costs of their child. And even in countries where

society takes a large economic responsibility for the child, fathers and mothers are usually requested to contribute financially in one way or another' (Eriksson and Saldeen, 1993: 77-78)

As can be seen form this quotation, the main reason for trying to establish paternity by court proceedings may be of economic nature, which sustains the conventional construction of gendered identities and subjectivities (Carlen and Worrall, 1987). An empirical example, which I collected through ethnographic techniques at a court of law, is illustrative of Portuguese State efforts to defend the child's best interests – his/her right to identity (to know her/his genetic origins) - but also the right to accede to what the legal framework considers to be the proper financial and moral support being provided by the father. The following example refers to a dialogue between a State Prosecutor and the presumed biological father named by the child's mother. The Prosecutor wants to know whether the alleged father is willing to affiliate the child and at the same time he warns him about the father's duty to support his son/daughter.

Public prosecutor: You've never given anything to support the child…however this child may be yours. How would you feel if this child starved to death and you later would know he was really your own child?!!!

Presumed father: I'll do whatever tests to find out whether I am the father. If I am, I'll give something, not much because I only get about 80,000 escudos (400 euros) and I'm still paying back the loan on the car.

Public prosecutor: What is the car's number plate?

Presumed father: ****

Later, after the inquiries, the Public Prosecutor explained to me that he had asked the alleged father about the car's plate just in case paternity was legally proved

and he wouldn't willingly pay the costs of the law suits and so the court could seize his car more easily.

The myth of the breadwinning male is very clear here: while the mother is asked about her sexual life in order to indicate the identity of the father of her child, the putative father is asked about his willingness to provide financial support.

The incorporation of science in the field of Family Law

The intensification of the interaction between the justice system and the new technologies of identification such as DNA typing, often described either as a 'scientificization of law' or as a 'judicialization of science' (Jasanoff, 1997) has produced several impacts in diverse areas of society. In fact, at the same time that new scientific fields emerged or saw constraints put upon them in order to respond to the needs of the courts, new legal issues have arisen, along with a growing body of law emphasizing the importance of scientific evidence within the legal process. It also transformed the way legal actors understand science, and raised some crucial issues regarding conceptions of rights and their reformulation in the areas of genetics and information. In the academic field, especially since the mid-nineties, the social studies of science began to focus on the presence of genetics in court, namely by developing a constructivist critical analysis, which questioned the cultural authority of both law and science, henceforward seen as historically situated social activities. The social and academic debate on those topics, however, was limited to the so-called adversarial judicial systems.

In countries such as the United Kingdom or the USA, the litigation process is almost entirely governed, in principle, by 'adversarial' procedures – that is, each party

has the opportunity to present to the court the material on which it relies in support of its case, in the form of evidence and argument and to test as thoroughly as it can the evidence and arguments presented by the other party (Oddie, 1991). In this context, definitions of science and non-science, of expertise and non-expertise are strategically related in ways designed to achieve specific outcomes in a particular appeal (Edmond and Mercer, 1997: 371). Forensic scientists, legal scholars and social scientists have pointed out that common law systems often give rise to an artificial polarization of the scientific issues in disputes, encouraging expert witnesses to 'take sides'[5]. But the adversarial proceedings have also contributed to construct and reinforce the scientific credibility of various emerging technologies. As Sheila Jasanoff argued (Jasanoff, 1997), in the case of DNA typing, the adversarial process was both crucial and successful in exposing the unacknowledged and untested assumptions related to this technology, but also crucial to the process of assessing its scientific and judicial credibility[6]. However, as some critics state, the adversarial process can itself produce an artificial polarization of the scientific issues in disputes which have to be resolved in court because that type of legal system encourages expert witnesses to 'take sides' (Oddie, 1991).

In Portugal, as in most 'European continental judicial systems', the rules of admissibility of scientific evidence and of expert witnesses are related to a distinctive framework associated to same particularities of the inquisitorial legal systems. In fact, the judge has quite active power in trial settings – he has a central, predominant role in

[5] For a short and incisive examination of the differences between adversarial and inquisitorial legal procedures, Christopher Oddie, *Science and the Administration of Justice,* London, Report of a committee set up by Justice (British Section of the International Commission of Jurists) and the Council for Science and Society, 1991.

[6] One classic study on the intersections between science and the law is the well-known work by Sheila Jasanoff, *Science at the Bar: Law, Science and Technology in America,* Cambridge, Harvard University Press, 1997.

the examination process and in imposing the rules of evidence and of court procedures. There is not such a thing as the *Daubert* criteria[7] in order to assist trial judges to make decisions pertaining to expert opinion evidence. The parties can make suggestions or even present their own experts reports, but it is the judge who decides which evidence will be admissible in court and who appoints the expert witnesses. The judge is considered to be the 'expert of the experts'. Portuguese judges evaluate expert evidence, deciding if it is both 'relevant' to the case and 'reliable'. But what does to be 'reliable' mean to these legal actors? Being generally accepted in the expert community? Being produced by official laboratories? Do they consider that some areas of knowledge are more 'reliable' than others? In the inquisitorial system of justice, the judge has ample freedom and scope to appreciate and evaluate the weight of the evidence. There is also what can be called 'freedom of proof' meaning that any type of evidence can be accepted by a judge (save illegal proof), although the judge will usually not consider 'unsafe evidence' because of risk of appeal (Margot, 1998).

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[7] In 1993, the U.S. Supreme Court delivered its opinion in the case *Daubert v. Merrell Dow Pharmaceuticals,* 509 U.S. 579, holding that the trial court should be a 'gatekeeper' and then assess whether 'scientific' testimony or evidence is both relevant and reliable. The Supreme Court clarified the standards judges should use in deciding whether to admit expert evidence in federal cases. Those standards directed judges to evaluate the method and reasoning underlying the expert evidence and to admit only evidence that was reliable and relevant. The *Daubert* decision provided a list of factors that judges might take into account when evaluating the reliability, or scientific validity of evidence: whether it can be (and has been) tested; whether it has been subjected to peer review and publication; its known or potential rate of error; the existence and maintenance of standards controlling the particular technique's operation; whether it is generally accepted in the scientific community. But the Supreme Court also added that judges are not obligated to consider what have come to be called the '*Daubert* factors' in every case, and that other factors may be included in their evaluation. The report by Lloyd Dixon and Brian Gill Dixon *Changes in the Standards for Admitting Expert Evidence in Federal Civil Cases Since the Daubert Decision*, Rand Documents, 2001, examines the effects of this ruling on the behavior of federal judges, plaintiffs and defendants found that the judges began to be more rigorous about assessing relevance and expert qualifications which increased the proportion of evidence that judges excluded and the parties challenged expert evidence more frequently. One other interesting aspect is that, although some legal observers initially expected the *Daubert* decision to increase the admissibility of 'novel science' that was not yet widely accepted, the report's authors did not find this to be the case. On the contrary, they found that judges began to find evidence unreliable even though it was generally accepted in the past.

Usually, Portuguese judges' decisions on the admissibility and reliability of expert evidence is coterminous with a specific ecology of practices which defines the *legitimate producers* of forensic biology and forensic medicine: a National Forensic Medicine Institute – with testing carried out at its three laboratories - and a Scientific Police Laboratory, both institutions being supervised by the Ministry of Justice. Until now, it has been relatively uncommon that Portuguese judges request scientific reports from private institutions. They do so when public forensic laboratories aren't able to respond to the courts' requests due to the scarcity or inexistence of human resources. This often happens in the case of paternity claims.

Another important feature concerning the presence of genetic reports in courts refers to the fact that some building blocks of rights as we know them in the liberal tradition, such as concepts of personhood, identity, privacy, physical integrity and parenthood, seem to have been affected by the presence of forensic science in the courtroom, at the same time that new rights emerged.

Drawing on interviews of judges, I tried to identify the means used by a specific group of social actors to appropriate science within the particular context of the judicial investigation of paternity. My aim was the study of a particular configuration of knowledge, in which experts in the field of law try to appropriate and understand scientific resources which are to be mobilized for the production of evidence accountable to both scientific and legal standards. The peculiarity of this situation lies in the way 'lay' understandings of science as judges uphold them are incorporated into the expert discourse of law. The interviews enabled me to look at some aspects of this process, in particular the uses of DNA profiling as part of the production of evidence for the investigation of paternity claims.

Through these interviews, I tried to address some fundamental research questions, such as: What does this group of actors understand as 'science' and 'scientific evidence' admissible in court? Which factors lead one individual/institution to be accepted as an 'expert' or as a 'scientist' and others not? To what extent do legal actors rely on experts' reports? Are there any particular difficulties regarding the judges' understand of scientific reports? How do they manage to overcome these difficulties? Do judges impose their own interpretations, for example, when experts seem not to agree or if the scientific reports do not clearly present a straight answer to the questions being asked by the court or by the different parties involved? Does it happen very often that experts don't agree? Do the parties usually challenge the results of scientific reports?

The interviews revealed a considerable degree of homogeneity among the discourses of the judges. What is remarkable about the relationship this group establishes with science is an attitude of reverence towards the latter's procedures and results – in fact, there is a close match between the results of scientific reports and the outcomes of lawsuits. Bearing in mind that the interviews were carried out in several courts of law and that the information obtained was recurrent, I believe that the results I got are not far from what could be described as the vision of science held by Portuguese judges in general.

According to all interviewees, of all the reports admissible in court produced by experts – from DNA identification reports, autopsies, evaluations of physical lesions, psychiatric and gynaecological examinations (those usually performed at the forensic laboratories supervised by the Portuguese Ministry of Justice) to economic and accounting reports – the ones that enjoy greatest credibility are those produced in State laboratories. Generally speaking, the practices that occur within the context of a laboratory are understood as uncommon actions, removed from the contingencies of everyday life and of the 'external' world and thus highly reliable. Furthermore, as

pieces of evidence they are extremely welcome in court, because they are seen as a tool that allows the discipline of law in its struggle for standards of objectivity, neutrality and exactness that would otherwise – through the use of testimonial evidence or the judge's 'intuition' or 'common sense', as well as 'good courtroom practice' – be unattainable.

This vision of the specific physical space – the laboratory – and of the scientists who work in it as self-regulated, separated from the 'common world', became clear as I questioned the judges on whether they worried about the possibility of laboratories coming up with false results or whether, in the context of a criminal investigation, there might be problems with the collection of samples which could distort the results. Every judge, without exception, answered that he/she did not think about that. The possibility of laboratory error seemed quite remote and even odd for two main reasons: firstly, because the results of scientific tests admitted in court are carried out by personnel considered extremely competent because they work for the National Forensic Medicine Institute. If the tests were carried out in private laboratories – considered less trustworthy, since they are not backed by official organizations – there could be doubts about the results. Secondly, the work done in a laboratory is seen as an extremely precise activity, its results being based on the use of highly accurate physical instruments, like microscopes, and of materials like test tubes, objects that are allegedly free from possible distortions due to subjectivity or personal opinion. The scientist is thus seen as a subject – a human being with all his or her weaknesses and biases - who is likely to make mistakes unless (s)he is backed by laboratory instruments which endow him/her with almost supernatural powers: the mediation of the scientific tool is thus a crucial element in achieving 'factual truth'.

All in all, the judges' trust in the technical capacities of the scientists who work in laboratories supervised by the Ministry of Justice seems to be absolutely unshakeable. As far as DNA profiling is concerned, all the judges stated that they truly believed in that scientific tool, based on the assumption that 'DNA is unique and non-repetitive in each individual' and that 'genetics is an extremely advanced and exact science'.

Genetics is seen by the interviewees as an extremely complex science, its understanding surrounded by a number of myths, such as the notion that, somehow, the scientific analysis of the genes will be able unravel our most deeply hidden secrets (like inwards tendencies, potential behaviour and pathologies), and the belief that the field of genetics is somehow characterized by a high degree of mathematical exactness which endows its statements, in turn, with a high degree of certainty.

In contrast to this trust in genetic testing and profiling, judges seem to have doubts about the capacity of other disciplines or fields of expertise, like, for instance, psychiatry, to 'find out the truth'. Interviewees stated that, in the latter field, the expert's subjectivity was likely to affect his/her analysis. In their opinion, mistakes may happen, due to the fact that the psychiatrist does not have material tools that would allow him/her absolute exactness (as would happen, for example, if they had something like a microscope). The psychiatrist has to rely on the ability to observe with the 'naked eye', which means that the observed can 'put on a performance' so as to distort the results of the examination. The judges pointed out, however, that psychiatric reports do have considerable weight in judicial ruling, because, as many interviewees stated, 'after all, they are medical doctors, so their conclusions are based on scientific knowledge'.

The biggest obstacle to the full use of DNA paternity typing by courts is the frequent refusal of the presumed father to be subject to it, as it implies drawing blood for analysis. It is the judge's belief that they can indeed refuse the blood tests, because

that medical action can be seen as a violation of their constitutional right to physical integrity. Confronted with the question of whether the courts then ask the laboratories to collect other type of biological material for DNA analysis – saliva, pieces of fingernails, or hair (that action possibly being perceived as less 'intrusive' than the taking of blood) – only one judge answered affirmatively. This public prosecutor is an exception among the judges, and is even well known among his colleagues for his unorthodox positions. Some of the judges confessed they did not know of this technical possibility, whereas some others stated that these were probably very expensive exams (although they did not know how much they cost). The interviewees displayed a limited knowledge of the scientific techniques usable for legal purposes and, more importantly, a great reluctance to alter routine practices.

The following dialogue illustrates the judge's perceptions of the uses of DNA profiling in the context of the judicial investigation of paternity:

'So, do you usually direct DNA testing for testing for the purpose of paternity investigation?'

'Of course, always! Thank God we now have those tests in order to make a fair decision. In the past it was a problem, we had to rely only on testimonies… and you know, people lie a lot. The child's mother telling me she only had sex with the alleged father, the alleged father telling me he had never met that woman but that he knew for sure that she was promiscuous… well, it was rather difficult to decide. Now everything is much easier – if the forensic report states that there is a probability of 99,9% that that man is the father, of course he is!'

‘What happens if the mother tells the court that she isn’t sure who the father is? For instance, it can happen that she had sex with several individuals during the time of conception...’

‘Well, it depends… If she points out no more than two men, I agree to request DNA testing for both of them… but if she tells me that she slept with the entire village, it’s not possible … I request DNA testing in normal situations.’

‘What do you consider to be normal, then?’

‘The judge has his own good sense… he analyses the social context and its values and he makes decisions. I would say that it is a normal situation when the mother doesn’t have sex with more than two men at the same period of time.’

The prevailing discourse on the part of the judges is to affirm that they demand scientific tests in almost all the cases, but when we look at the lawsuits we can see that there is a clear selection of the cases which are considered to be worthy of ordering DNA profiling – which reveals pre-conceived assumptions about the good or bad sexual behaviour of the child’s mother.

Though the reverent attitude of the legal world towards scientific evidence based on DNA typing is clear, it is also clear that legal actors try to balance testimonial evidence (seen as a rather fallible kind of evidence) and scientific evidence in their practice, as a means to uphold the boundaries between the methods and the practices specific to the worlds of law and of science. In this process of construction and flexible and casual negotiation of boundaries, the judges’ reverent attitude towards science is maintained, but the legal setting for the presentation and evaluation of scientific evidence allows the continuity of the rituals and the rhetoric traditionally present in trials. That is, although the judges believe that scientific evidence – more specifically,

genetic profiles – is the deciding factor in the lawsuit of investigation of paternity, they consider it necessary to keep on calling for witnesses in order to preserve the specificity of the legal apparatus.

Before deciding on a sentence, judges frequently request reports based on social investigation of the character, personality and social and domestic background of the accused (in criminal cases) and of the minor's mother in paternity claims (a social investigation of the alleged father is not requested, though). Bearing that in mind, we also asked the judges about their perception of social workers' skills and functions. In particular, we tried to find out whether judges perceived social workers as ‘experts’ or as ‘scientists’.

All interviewees answered that they thought of social workers not as scientists or ‘true experts’, but neither were they described as ‘laypeople’, as can be seen in this statement from an interview,

> ‘They are on the border between science and common sense. You see, they have an academic degree, but they don’t use any rigorous methodology to reach their results. You can’t find any mathematical or statistical models in their reports. Their statements are based on their own opinions based on what they can observe and hear from the neighbours of the people involved. Everything is quite subjective...’

> ‘And so, do social reports help you in making decisions?’ I asked. ‘It is another piece of evidence. Of course I believe more in statements by social technicians than in witnesses, who tend to lie a lot! But, of course, I don’t think that social investigations are as trustworthy as genetic tests, for instance!’

This extract of one interview points towards factors that lead some individuals/institutions to be considered as 'experts' or 'scientists' and other not. One of those factors is related to the kinds of instruments used by the individuals to analyze empirical reality and to produce results. As I pointed out earlier, the use of physical instruments that are perceived as 'exclusively used by scientists' – such as microscopes or test tubes – is highly valued. However, the use of individual's own senses (like the 'naked eye') is evaluated as basically similar to common sense, and then devalued. How then, can the difference between the judges' evaluation, and the psychiatrists' and social technicians' reports be explained? The classification of the psychiatrists as 'scientists, after all' despite the fact that subjectivity can distort their analyses and the denial of that status to social technicians reaffirms social hierarchies and power structures existing in society[8]. Gender distinctions also pervade that difference of evaluation of psychiatrists and the social technicians, since common sense perceives the former as being usually male (and therefore, capable of being rational and objective) and the latter as female (and, therefore, more liable to irrationality and subjectivity).

Biologising paternity, moralizing maternity

The use of science in the public sphere – in the case at hand the courts of law -, namely the identification through DNA profiling in criminal investigations and in paternity or maternity claims, has led to intense legal debate on the issue of citizens' rights concerning the performance of scientific testing on human beings. Several questions have triggered debate in some countries. In Portugal, public debate has been

[8] For the problems created by psychiatric witnessing when differences of opinions between experts are so common 'that the public (or the courts) begin to wonder whether there is indeed any shared body of knowledge' , see, for example, Simon Cole, 'Witnessing Identification: Latent Fingerprinting Evidence and Expert Knowledge', *Social Studies of Science*, Vol. 28/5-6 (October-December 1998).

circumscribed[9] basically limiting itself to the legal field and, in part, to the scientific field. Some discussion is being promoted of general ethical and legal problems associated with the obligation to comply with and the refusal to submit to testing or profiling. These questions are being turned into fundamental issues for the construction of the future of citizenship, of the State and society's acceptance of responsibility for the paths taken by scientific research in areas that can endanger the fundamental rights of the citizens.

One of the issues most discussed by legal scholars concerning the use of scientific testing on people in legal investigations has to do with the legal construction of the human body and the division established between 'strictly personal' parts and products of the body – like blood – and 'non-strictly personal' parts of the body – hair, fingernails and saliva.

An interesting aspect of the judges' discourses on the uses of scientific evidence in paternity suits is the current idea that the biggest obstacle to the full use of DNA paternity typing by courts is the frequent refusal of the presumed father to be subject to it, as it implies drawing blood for analysis. It is the judges' belief that they can indeed refuse the blood tests, because that medical action can be seen as a violation of their constitutional right to physical integrity. Confronted with the question of whether the courts then ask the laboratories to collect other type of biological material for DNA analysis – saliva, pieces of fingernails, or hair (that action possibly being perceived as less 'intrusive' than collecting blood samples) – only one judge answered affirmatively, but he was an exception among the judges, and is even well-known among his

[9] Some remarks about the ethical and legal problems associated with institutional uses of genetic databases and of scientific testing on human and the lack of civil debate in Portugal are made by Susana Costa *et al.* 'Política molecular, crime e cidadania genética em Portugal', *Revista Crítica de Ciências Sociais*, 2000, nº 57/58.

colleagues for his unorthodox positions. Some of the judges confessed they did not know of this technical possibility, whereas some others stated that these were probably very expensive exams (although they did not know how much they cost). The interviewees displayed a limited knowledge of the scientific techniques available for legal purposes and, more importantly, a great reluctance to alter routine practices.

However, the refusal of the father to have the DNA test does not seem to be as frequent as the interviewed judges claimed, which shows the fragility of the argument that it isn't always worth ordering the tests. In a sample of 94 cases of paternity investigations in which the court ordered the blood tests, I only found three cases in which the father didn't show up.

Attendance at blood tests

Attendance at tests	Number of cases	%
Both present	83	88,3
Father didn't show up	3	3,2
Mother didn't show up	1	1,1
Nobody	7	7,4
Total	94	100

Source: Records of paternity cases (1974-2000)

In almost all legal systems the law allows that if any person fails to comply with an order to provide blood samples for testing, the court may draw whatever inferences it deems appropriate. This includes drawing an inference as to the very fact which was an issue, namely the child's actual paternity. I must point out that in Portugal there are only a few cases in which that happens.

While the presumed fathers' refusal to undergo blood tests for DNA identification is benevolently accepted by the judges we interviewed ('He [the putative father] has that right, you know? He may have an absolute terror of needles or for religious reasons he may oppose the taking of blood samples'), the same does not happen where criminal investigations are concerned. In a crime situation, the

interviewees state that although the constitutional principle being discussed can still be raised, they know of no suspects that refused to undergo the medical examination. Apparently, the refusal to collaborate in an investigation of paternity is 'less serious' than in that of a crime, despite the fact that the defence of rights other than those of the defendant guaranteed by law is at stake in both cases: in an investigation of paternity, the right to the child's personal identity and to his/her own genetic information; in a crime, the victims' rights.

The clash of fundamental rights raised by the issue of subjecting people to medical examinations, mirrors, through the practice of courts of law, the powers and hierarchies previously existing in society. That is very clear when we get to the gender distinctions that are upheld in the case of investigations of paternity. The Portuguese State aims at investigating a child's paternity in two ways: by asking the mother of the child about her sexual partners in the period of conception and by performing genetic examinations on the child, the mother and the presumed father.

The questions asked to the mother (even is she does not wish to say who the child's father is) about her sexual life may be seen as a threat to her constitutional right to privacy. However, in the interviewees' opinion, in this situation of conflict between the rights of the child and those of the mother, the child's rights must prevail. The legitimacy of this authoritarian relationship between the State and the women involved is ideologically justified with the argument that the child's essential rights – namely his/her constitutional right to personal identity and to access his/her own genetic information – are being defended. These are understood as closely related to an over-evaluation of the function of the genes in the construction of the personal and social identity of the individual, insofar as the determination of biological ascendancy (for

psychological, medical and financial reasons) of a child whose paternity is not legally determined is seen as a means to safeguard some of his/her constitutional rights.

Now, insofar as the presumed father's refusal to undergo a blood test is concerned, the judges believe that the individual's right to physical integrity should prevail over the child's rights. When, during the interviews, we confronted the judges with this discrepancy between the judicial defence of the mothers' rights and those of the alleged fathers, almost all of them showed some discomfort with the issue being raised.

The interrogation of the mother in court, in order to gather the evidence deemed necessary for a safe identification of the biological father can be seen as a threat to the right of privacy. As feminist literature has shown, one of the prevailing means of domination of women is through talk in the courtroom (Conley, 1998; Matoesian, 1992). The mother is prompted by an agent of the court to answer certain questions about her sexual life such as: number of sexual partners prior to her relationship with the person indicated as being the child's father; type of sexual intercourse had with the alleged father; place and date of those instances of sexual intercourse with the alleged father; reasons for carrying on with this sexual relationship; use of birth control methods and the alleged father's reaction to the news of a pregnancy.

English legal literature and jurisprudence tends to reveal a rather different perspective – whether the court will order blood tests is not certain as the law reflects two different trends: one trend is to suggest that such tests do not promote the welfare of the child if they are ordered in the face of opposition from the mother, because they would disrupt a (supposed) settled family relationship. The opposite view is that it is in the child's best interests to know the truth about her or his (genetic) origins.

The curious thing about the former trend is the fallacious argument concerning the defence of the mother's rights – one common argument to avoid genetic testing is that it could be inappropriate to give parental responsibilities and rights to a father when the child has resulted from a casual liaison, but it is acceptable that the mother's parental responsibilities and rights are recognised even if the child resulted from a casual liaison. It is also argued that conferring parental responsibilities and rights on unmarried fathers would cause offence to mothers who are struggling to bring up their children without support from the fathers.

I have confronted the interviewed judges with that particularity of the English law – that of the paternity investigation as a possible offence and threat to the mother's rights – and some of them were absolutely astonished. In Portugal the perspective is different: on one hand, the Portuguese judicial system considers the child's rights must prevail above all and so he/she has the right to know who his/her father is.

On the other hand, the judges believe that every woman naturally wants to have a father for her child. This statement by one judge during an interview is quite significant:

'What kind of woman doesn't want a father for her child? If she doesn't indicate who the father is it is maybe because it was an incestuous relationship or maybe the child's father is her boss and she is afraid of losing her job? Of course there are many women that don't have a clue who the father is (ironic smile) For example, just imagine a prostitute who has sexual intercourse with 300/400 clients but she indicated one man as being the putative father. Biological testing proves that he is the biological father. This means that somehow it is unfair for him… Our law has advanced in order to establish the truth, to defend the child, but also to punish someone because of having had casual sexual intercourse.'

Thus, we can state that the use of science in the courts is mediated by patriarchal ideology, one that reaffirms the power of men over women. This is also visible in the fact that in the cases of investigation of paternity where there is suspicion of prostitution on the part of the child's mother the court does not order a laboratory test, even if the mother indicates a presumed father. The obstacles to DNA paternity typing in the cases of prostitute mothers show a situation of inequality in access to justice, sanctioned by the use of science in the courts.

In this case study there were 101 women that declared that they were prostitutes. No genetic exam was done in those cases, it only being requested in one single case, although most mothers identified one or more possible fathers.

Prostitute Mothers – Identification of an alleged father

Mother's identification	Number of cases	%
One individual	74	73,3
Two individuals	2	2,0
Three or more individuals	3	3,0
No identification	20	19,7
Mother not asked	2	2,0
Total	101	100

Source: Records of paternity cases (1974-2000)

The division between 'good' and 'bad' women is thus based on the notion of appropriate feminine behaviours, defined according to social expectations, culturally constructed according to the codes of the dominant social groups. The exclusivity of relationships is defended, particularly concerning the woman's behaviour, who should express her sexuality only in the context of a steady familiar relationship.

Social control is exercised over feminine sexuality and women's subordination, in this case of prostitutes, by the construction of a subterfuge, apparent resistance to the execution of genetic tests, when the mother of the child reveals 'bad moral and sexual

behaviour', excluding her, in this way, from having the possibility of 'scientific' evidence in affiliation lawsuits.

The differential nature of the admissibility and of the use of evidence, namely 'scientific' proof, subtlety reinforces the reproduction of women in a sexualised, subjugated and disqualified way.

The woman with the highest likelihood of getting DNA test ordered by the court is the one who was a virgin at the time she had sexual intercourse with the child's alleged father; who never had more than one sexual partner; who has a socially acceptable job and who does not repeatedly go out to public places at night (Machado, 1996). And as will be illustrated further on, the blood tests in the investigation of biologic paternity are only done in those instances when the mother is thought to have 'good moral and sexual behaviour'. On first analysis, the researcher may conclude that this is culture-specific, associated with strong persistence of conventional behaviour patterns, which in Portuguese society relegated women to the domestic sphere. However, similar patterns of the monitoring of women's behaviour, namely with regard to the type of company kept, the places frequented and the types of clothes worn, were identified in countries such as the USA and the United Kingdom, in the context of legal proceedings in cases of rape and sexual harassment (Matoesian, 1992; Smart, 1995; Chambers and Millar, 1987).

Indeed, from looking at specific behaviours of women that have nothing to do with sexual behaviour itself, such as, for instance, the kind of public places they usually go to during their free time and the time when they go judges tend to make inferences about the moral and sexual pattern of the child's mother, whose biological paternity is being investigated in court. As some feminists have argued, femininity is not

constructed on a neutral ground ‘femininity is routinely constituted within a number of discourses which circumscribe not only a woman's behaviour but also the images which she has of herself and her relationships with other people. Women's experiences of 'being female' are mediated by their bodies, their minds and their social interaction. The discourses within which these experiences are structured are constituted by sets of relationships which cluster around notions of domesticity, sexuality and pathology.’ (Carlen and Worrall, 1987: 2). In fact judges really build up a clear distinction between acceptable and non-acceptable behaviours in public places as an indication of the mother’s morals. Behaviour in public places is evaluated taking into consideration the type of place and the time these places are frequented. There are forbidden places and forbidden times of the day. Going out at night to a café or a disco, in other words, going to places and at times traditionally destined for males and sexually-available women may be considered unfavourable signs regarding the sexual morals of the child’s mother.

Let’s consider the following: a 23 year-old textile industry worker who, when asked in court about the paternity of her daughter, answered that she had got pregnant by a married man, a department manager in the factory where she worked. The putative father had always claimed he had never had sex with her. Paternity wasn’t proved in court and DNA tests were not demanded at any time. The decision was grounded this way:

‘When she began having sex with Osvaldo she wasn’t a virgin anymore. Furthermore, Paulina was said to interact with the opposite sex very easily. Those relationships were casual, not serious and not consistent.

Without any more evidence, nobody would believe that Paulina hadn’t possibly had intercourse with other men during the conception period, as before meeting Osvaldo

she used to be seen with sexually promiscuous women and she often went to discos with other men. Paulina went on going to discos with several men during her pregnancy and after the child was born.

During the legal investigation of paternity, the sexual and procreative life of the child's mother is not considered private and intimate, but somehow a State matter because of 'the child's best interests'.

Thus, evidence not really connected with the legal cause is considered pertinent in court, namely evidence related to the mother's sexual life, even though the judges I spoke with repeatedly told me that they didn't care 'a bit' about the mother's sexual behaviour before and after her pregnancy, as can be noticed in the following dialogue:

Judge: So, the child's father has been in jail for three years. During this period haven't you been with another man?

The child's mother: No, Your Honour. I used to visit him every weekend and on public holidays. After that I immediately went back home. I didn't even go out for a walk anymore. My life became only home, work and going to prison for a visit.

Judge: So haven't you ever had any other boyfriends?

The child's mother: Since I've known him, no.

Judge: And before that, did you have any boyfriends? I know that the past really doesn't matter and this is off the record, but in this way we can make it easier to understand…

The child's mother: I had two boyfriends before him.

Judge: And did you have sex with them?

The child's mother: Yes, with one of them. He was my boyfriend, you know…

Judge: Yes, of course. It doesn't matter. Do you realise that you've wasted six years of your life with that man, the presumed father of your child?

The child's mother (resigned): I know, Your Honour. I lost my mind completely. I was in love.

(Abridged from the field work diary, December 2000)

In our view the judges' acceptance of the results provided by forensic biology reveals a particular logic, characterised mainly by the fact that the 'moral and sexual behaviour' of the child's mother still carries considerable weight in the decision concerning the legal paternity of the child, which reinforces the predominant idea of institutional control of the sexual and procreative behaviour of women.

In most lawsuits, even though a direct link between the laboratory results and the judicial decisions is maintained, the judges usually assess the facts based on the existence of the 'traditional' evidence of the exclusiveness of sexual intercourse of the child's mother during the so-called conception period. Let consider the following example:

In 1994 in paternity suit in which the genetic tests showed 'paternity practically proven' the court decided that there was enough evidence to establish paternity. But in the decision, one fact was evident: the implicit belief that the positive test result showed that the child's mother had only had sexual intercourse with the alleged father during the legal period of conception:

'The reason for filing a paternity suit is the genetic fact of procreation, which is based on the generating act of pregnancy and consolidates biological affiliation. The biological affiliation will have to be established on the evidence of the exclusiveness of sexual intercourse with the future father during the legal period of conception (...) And, as stated in the records pertaining to this sentence [report of DNA profiling], the child's mother, during the legal period of conception, only had sexual intercourse with the defendant'.

The recent transformations seen in this field of judicial practice have the centrality of science as a guideline. The laboratory tests concerning biological paternity have been perceived in the juridical field as the tools that made the introduction of further objectivity and exactness in affiliation law possible. The symbolic subordination of law to science is clearly shown in the impact the scientific exams have in judicial results when a child's legal paternity is established. This symbolic fusion of elements of both science and law has been producing normative judgements legitimated by scientific judgements. The results of scientific tests are seen by the judges as mirrors of the child's mother's sexual and moral behaviour.

Feminist legal theories have shown that lawsuits that evoke sexuality - such as rape, sexual assault, abortion, assisted reproduction techniques, and now I add to this list paternity investigation – highlight mechanisms by which the law provides specific meanings to women's bodies, reproducing cultural beliefs about female sexuality and these theories show that by constructing its own legal lexicon, the law has its own very powerful mode of disqualification and subordination of women.

Besides oral reports of the child's mother, of the presumed father and of other witnesses, other details may be used to make inferences about the sexual behaviour of the child's mother and to help when deciding whether to ask for DNA tests, namely the fact that 'looks' can be interpreted as having a particular meaning with regard to the woman's morals. My work demonstrated several ways in which, when paternity is being investigated, women are assessed and classified by means of 'sexual reputation' (from which morality is implied). We may stress that there are strategies used both by lawyers and Public Prosecutors to exclude as possible witnesses in trials women whose posture, way of dressing and make-up may cause the impression of being 'seductive' and 'shameless'. When being interviewed, State Prosecutors used to refer to the child's

mothers involved in legal investigation of paternity processes as being ‘good-looking’ or ‘not good-looking’. One of the Public Prosecutors told me that he generally does not take the child’s mother into the hearings because that ‘is not compulsory and it isn’t really worthwhile’, he added, however, that once he made an exception ‘because the child’s mother looked like an angel.’

This stresses the social importance given to the appearance of women, which is understood as a clear indication of her feminine essence. Michel Foucault’s proposal of the disciplinary ‘microphysics of power’ over sexuality admits that it is exercised through the social construction of the subjectivity of subjects. Based on Foucault’s theory, Rose Weitz emphasises the cultural importance given to the appearance of women, stressing the subtle and detailed ways in which it is exercised over the non-verbal expressions of femininity. ‘The disciplinary techniques through which the 'docile bodies' of women are constructed aim at a regulation that is perpetual and exhaustive – a regulation of the body' size and contours, its appetite, posture, gestures and general comportment in space, and the appearance of each of its visible parts.’(Weitz, 1998: 41). My fieldwork revealed many ways in which women who are involved in legal investigation of paternity proceedings are assessed and catalogued in terms of ‘sexual reputation’ (from which morality is inferred). Here we could refer to the position defended by the feminists Carlen and Worall, who in their work on the ways in which the judicial penal system deals with women, (Carlen e Worrall, 1987), hold the view that the legal construction of femininity is strongly based on ‘sexual behaviour’ which is to a large extent assessed by ‘appearance’ which can lead to inferences about her morality (Carlen e Worrall, 1987: 5).There have been many studies undertaken in the field of interactional sociology which show that underlying gender relations are a processes of continuous social learning, based on permanent monitoring of body

exposure and language, in the way clothes are worn and behaviour in tense or emotional moments, which are part of a system of oppositions (male/female).

The possibility of using science to determine paternity – along with highly technological medicine that introduced new actors into the process of procreation, such as gamete donor, the medical specialist and the so-called surrogate mother – could be seen as a possible challenge to some ancestral western concepts of paternity, maternity and family. The scientific determination of biological paternity in a judicial context has also created new actors on the scene – forensic biologists – who created this new fact: the 'certainty of paternity', from now on as being mainly a genetic tie.

That's the idea that truth is constructed – out of facts – and not discovered (which is the keynote of recent scholarship in the history of science).

New actors embody new knowledge that can take away old assumptions and put new assumptions in their place. Or perhaps not. The displacement of knowledge that Marilyn Stathern talks about isn't always radical. Old assumptions can be recreated, 'displaced', there to be recovered. To be more precise, I was concerned to know if the idea was sustainable, as some authors had predicted, that the growing use of scientific tests to determine biological paternity would gradually make easier the process of monitoring the sexual conduct of the child's mother associated with the old practice that required that a woman's testimony regarding her child's paternity should be corroborated.

Regardless of the evolution, in genetics the means of defending the moral and social logic of societies prevail (Ferreira 1999).

Notwithstanding the 'impartiality' and 'neutrality' ideology that shapes both the juridical system and scientific discourses and practices, a social control over the populations is pursued by the judicial practice of paternity investigation assisted by

Forensic Biology with the aim of adapting individual demeanour to standards of values and behaviour of the dominant social groups. Moreover, it is clear that in this particular case, the effect of behaviour regulation has different repercussions for men and for women, mainly affecting the mother of the child whose paternity is being investigated. In this article my aim was to examine how the apparently neutral application of genetic tests in judicial lawsuits of investigation of paternity has important effects, both ideological and of in the normalization of behaviour, namely reproducing social gender distinctions which were already present in society: on one hand the genetic experts' reports reinforced a notion of 'paternity' linked to a biological determinism already present in Portuguese law and judicial practice. On the other hand, by allowing 'safe' ascertaining of paternity, genetic tests gave the courts further power of control over any female sexual and procreative behaviour that breaks away from the conventional standards of a woman's fidelity to a sole sexual partner.

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ABSTRACT

This article examines the courts' use of DNA profiling in the course of paternity suits by locating the sort of social relationships, cultural repertoires, narratives, interests and values that are reproduced and evoked in this particular context. The main

conclusion is that the forensic uses of genetic testing in paternity cases constitutes a complex interrelation between patriarchy, judicial power and science, which reinforces conventional gender distinctions with the aim of adapting individual demeanour to standards of values and behaviour of the dominant social groups. The cultural construction of paternity is linked both to biology and economic support, while maternity is perceived as being moral and emotional.

Genetic tests to determine biological paternity are selectively used in cases where there is strong evidence of the child's mother's fidelity to the alleged father, which reinforces the social monitoring of women's sexual and procreative behaviour, along with the construction of unequal access to justice.

Key words: genetic tests, paternity, justice, gendered uses of science.

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