Originally published in Spanish in *Anuari de Filologia. Estudis de Lingüística* (Anu.Filol.Est.Lingüíst.) 1/2017, pp. 97 -124, ISSN: 2014-1408. DOI: https://doi.org/10.1344/AFEL2017.7.6 Please use that reference to cite this article.

SCIENCE AT THE BAR: LANGUAGE, SCIENTIFIC-TECHNICAL KNOWLEDGE, AND JURISDICTIONAL FUNCTION[1]

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ABSTRACT

The growing technicalisation of society is also evident in the forensic field, with a proliferation of scientific references, together with the increasing presence of new and sophisticated technical methods of providing evidence. The current judicial system's aptitude to deal with the new scenario has been challenged by this phenomenon.

This paper undertakes the analysis of the problem, and of the inadequacy of the solutions that have been proposed, especially those that expressly or covertly attempt to replace the judge with an expert in certain cases. The author considers the need to frame the issue within the context of communication using pragmatics in order to clarify the problem, overcome the technocratic vision and recover the genuine sense of the judicial function.

The conclusion maintains that scientific knowledge in legal proceedings is solely an instrument that helps the judge to assess certain types of facts. Consequently, such knowledge must be provided to the judge in a clear and intelligible manner, and the judge does not need to be an expert in the sciences related to the legal problems he or she has to resolve. The rules of burden of proof should be enough to solve the cases in which there are conflicting expert opinions.

KEY WORDS: language and law, science and justice, expert witness, dissenting reports.

1. APPROACH

Very valuable contributions to the legal world have been made lately by various branches of linguistics that have led to a revival of the interest in language[2]. This can

[1] The title of this article is partly borrowed from Sheila Jassanof's well-known book. *Science at the bar: Law, Science, and Technology in America*. Harvard University Press, 1995, republished in 2009.
This article is part of the project FFI2015-70332-P, directed by Prof. Estrella Montolío Durán and funded by the Spanish Ministry of Economy and Competitiveness (Ministerio de Economía y Competitividad - defunct 2016), as well as by FEDER funding.

[2] Translation note: The first paragraph has been omitted because it contains an explanation of the title in Spanish, related to the space distribution in the Spanish courtrooms which would be

be seen, for example, in the movement to modernize legal language, promoted by the Ministry of Justice at the beginning of this century (Montolío, 2012); the incorporation of teachings related to this subject into the programs of the Judicial School and various law schools; the emergence of the figure of the linguistic advisor and of style guides in large law firms; as well as considerable interest in any initiative aimed at perfecting language and communication in the legal field, which has been noticeable in the rulings of the Supreme Court and the Constitutional Court.

In order to address these difficulties, it may help to begin by briefly mentioning a legal proceeding that took place in 1993 in the United States and which has become an essential reference in this area. *Daubert et al. v. Merrell Dow Pharmaceuticals*, a lawsuit that was brought before the California District Court and ended up in the Supreme Court. The case was brought by a group of women who had taken the only drug approved to treat nausea during pregnancy and sued the pharmaceutical company after giving birth to children with birth defects. Given the existence of conflicting expert opinions on the causal relationship between the drug, which had been taken by millions of pregnant women without any adverse effects, and the birth defects suffered by the plaintiffs' children, the question of the extent to which judges can assess the credibility and reliability of a report issued by an expert was raised.[3]

A summary of both positions that came to light as a result of this process can be found in two articles published years later in a medical journal. The first of which criticized the fact that judges could assess expert reports without being experts, and in response to this, the second article provides a different view on how judges should deal with the reports. These two articles, which are written by physicians and therefore express points of view external to the law, are of interest because they highlight the complexity of the problem and the need to make further progress in the search for solutions. Sartore and van Doren (2006) find it unreasonable to require a court to pass judgment on the validity and adequacy of the reasoning or methodology used. On the contrary, Brent (2006) argues that what is unreasonable is to prevent the judge from assessing the acceptance within the scientific community of both the methodology used and its relevance to the facts to be evaluated by the expert.[4]

As can be observed, the discussion takes place on an epistemological level, a

incomprehensible in English.

[3] The final, somewhat solomonic decision is not relevant here because it is primarily concerned with the interpretation of the Federal Rules of Evidence and the fact that the case was heard by a jury. Cf. *Daubert v. Merrell Dow Pharmaceuticals, Inc.* 509 U.S. 579 (1993) Available at https://supreme.justia.com/cases/federal/us/509/579/case.html. See also Imwinkelried (1993).

[4] The doctrine initiated in Daubert was developed by the Supreme Court of the United States in two subsequent rulings, *General Electric Co. v. Joiner*, 1997 and *Kumho Tire Co. v. Carmichael*, 1999, progressively expanding the Court's powers to control the admissibility of expert evidence. Cf. Berger (2001: 11 ff. and 32), who foresaw the continuation of the discussions, especially in the matter of damage caused by toxic substances, as indeed happened later on. In the same line, cf. Cranor (2016: 52) and Ward (2015: 26-36).

tension between legal knowledge and scientific-technical knowledge, without adequately taking into consideration the particularities of the context in which this tension takes place, a very specific judicial, procedural context. With such a limited approach, the solutions are inevitably limited: either it is to be assumed that the judge's functions include that of being an "expert of experts";[5] or the need for judges to also be experts in the nonjudicial sciences related to the matter that must be judged; alternatively, direct advocacy for the substitution of the judge by an expert in cases involving particular technical complexity.

Logically, none of these answers is satisfactory. Not surprisingly, in the intense debate regarding science and law that followed the "Daubert verdict", the scientific world warned that not everything that is presented as science is science, and that it is just as harmful for judges to start doing science as it is for junk[6] or pseudo-science to impose on the courts. Scientists' own reference to junk science is reminiscent of the well-known phrase concerning laws and sausages, for no one better than those who do science knows how it is "produced".[7] However, it is not a question of cultivating a generalized and absurd distrust of science because, as I have said, it is the scientists themselves from whom the warning comes. It is the realization that even the most rigorous science is subject to revision, there are failures, schools, hypotheses, interests, etc. And it would be naive to ignore these factors when analysing the interaction between law and scientific-technical knowledge (Franconi 2015: 214 and Conti 2008: 29).

2. LAW IN A TECHNISCISED WORLD

When speaking about language and law, we usually allude to the problems generated by jurists using technical terms, complex constructions and, in general, that unmistakable style that can usually be found in the legal field. Little has been said, however, about the grave difficulty jurists face with the widespread use of technical and extra-legal terms and concepts, the correct interpretation of which can

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[5] The Latin expression, peritus peritorum, of uncertain origin, confers even more plausibility to this acknowledged fallacy See also Bonavia, Maria Teresa, on this. "Giudici ordinari, scienze e tecniche: la consulenza tecnica d'ufficio" in Vipiana, Piera Maria; Timo, Matteo e Bisio, Davide, *Diritto Scienze e Tecnologie*. Alessandria, 2016. pp. 85-87. Available at: http://polis.unipmn.it/pubbl/RePEc/uca/ucapdv/polis0237.pdf [consulted 1st Dec. 2016].

[6] The term "junk science" is credited to Huber Peter W. *Galileo's Revenge: Junk Science in the Courtroom.* New York, 1991, a book republished many times and profusely cited on this subject. Among many others, see the review by John F. Baughman in Michigan Law Review, Vol. 90, No. 6, 1992 Survey of Books Relating to the Law (May, 1992), pp. 1614-1623 http://www.jstor.org/stable/1289436. and Merz Jon F. "In Support of Huber" *RISK: Health, Safety & Environment.* 1992, Vol. 3, Nº 3, Article 4 http://scholars.unh.edu/cgi/viewcontent.cgi?article=1092&context=risk.

[7] The phrase in question is "Laws are like sausages; it is better not to see them being made". A phrase commonly attributed to Otto von Bismarck, but the author, or at least first known user, is apparently John Godfrey Saxe, cf. University Chronicle. University of Michigan (27 March 1869) cf. https://en.wikiquote.org/wiki/John_Godfrey_Saxeque.

be decisive in the success of a given matter, or for the proper functioning of contractual relations.

The relation between science, technology and law is nothing new, such factors have always existed, at least it seems to be so as far as we can tell, for judges have simultaneously used scientific notions to interpret and reconstruct events (Luca, Navarro, Cameriere, 2013). Furthermore, as human endeavours with social repercussions, science and technology have always been included in some way or another among the matters regulated by the law. Science has also been present in the procedural field since ancient times in different aspects: either in providing counsel to the judge, or as evidence, initially mistaken for testimonial evidence, then progressively differentiated and given its own identity as expert evidence. Science and technology, and specialised expertise in general, have always had their place in the courtroom.

One peculiarity with regard to the current situation is that technology has attained a permanent presence in all aspects of life, including legal matters and thus, what was initially just a collection of knowledge that provided the law with assistance in regulating or interpreting reality, is now part of the regulations themselves and has become a subject of litigation (Luca, Navarro, Cameriere, 2013).

In fact, scientific-technological advances in recent years has made it increasingly common for there to be regulations whose content is largely technological[8], and that the courts' activity is often conducted on matters in which the very subject of the proceedings is directly related to science or technology. This is the case, for example, in the field of industrial property, and it also ends up being related to the implementation of scientific procedures in the forensic field (Luca, Navarro, Cameriere 2013). On the other hand, such promising advances in neuroscience, new theories on knowledge and decision making are leading to the establishment of multidisciplinary groups in which jurists play a key role. As a result, there has been widespread importation of terminology related to these sciences to the legal and forensic fields.

The admiration and hope placed on scientific and technological advances often go hand in hand with the claim that natural sciences and technology set the course for social progress. However, as has been pointed out by several authors, such an approach bares various errors regarding the relation between science and law and their respective fields of knowledge[9]. Neither science nor technology provides the criteria for determining what is fair, how society should be organised, how people should relate to each other, or what human dignity is.. On the other

[8] In the field of justice, it is worth mentioning the Law 18/2011, of the 5th of July, which regulates the use of information and communication technology in the Administration of Justice, or articles 588 ter k and 588 ter l, of the Criminal Procedure Act, added in the recent reform of 2015. There are many more examples, especially in areas such as industry, communications, transport, e-commerce, etc.

[9] An in-depth analysis of this in the field of neuroscience can be found in Pardo and Patterson (2013: chap. I, pp. VI), where the *mereological fallacy* is discussed. See also the excellent review of this publication by Lundblad (2013).

hand, when natural sciences are considered the only true source of knowledge and progress, the very scientific nature of other disciplines, specifically law, is called into question. Jurists would become mere commentators of what the legislator would write at the dictation of science (Ward: 2015: 26-36).[10] Moreover, advances in knowledge and new technologies, while solving problems, also creates new ones which require the intervention of jurists in order to be solved, using, of course, the science of law.

The influence of this approach, which has been dubbed the *technocratic paradigm*,[11] has led jurists, overwhelmed by the ever-increasing presence of scientific-technical concepts and terms, to try to get rid of the problem by precipitately leaving it in the hands of experts, without fully reflecting on the need for this handover and the repercussions that it may have. Much of this is to be found behind the proliferation in Europe of State or European agencies which, under the pretext of the complexity of a given field, are beginning to encroach –always in a respectful manner– the jurisdiction of the courts.

The phenomenon that has been described up to this point, the omnipresence of science and technology and the disruption and perplexity that it generates for judicial officers, bears a particular impact on jurisdictional functions, that is, on the function of judgment, of applying the law to the specific case. Given the complexity of the content of the rules or the technical nature of the controversies that the judge must resolve, there is a risk that it may be considered better for the judge to also has technical knowledge or that the assistance of experts be configured diferently, either by institutionalizing their role with greater weight, or by including them in the judicial body.

When conflicting expert opinions arise in trial, it is not unusual for the judge to be tempted to resolve the matter by means of an expert of their own choice when allowed by the rules. Which really means transferring to a third subject what corresponds exclusively to the judge: to assess the expert evidence, together with the other evidence and just like the other evidence. Thus, it may be considered better for those cases in which the core of the matter is *very technical* to be resolved by a specialist or by a specialized judge with technical training. In my opinion, this is a very detrimental step towards the consolidation of the *technocratic paradigm* in the legal world. One example of this is what has happened in the new European Unified Patent Court, in which, the figure of a judge with technical training is considered together with that of a judge with legal training. Although other factors that could have also contributed to this composition may be considered.[12] I believe that, without forcing reality, it can be considered a notable exponent of the phenomenon to which we are referring.

What this paper argues is that such an approach is the consequence of an

[10] It is one of the factors behind the attempt to remove anything that is not "strictly legal" from judicial adjudication in what amounts to a distortion of the very concept of law.

[11] Drengson (2011).

[12] A very clear and summarised explanation of this can be found in Desantes Real (2013: 51-70).

inadequate understanding of a judge's function and of essential aspects of the legal process that end up being concealed under the excessive prominence of scientific-technical issues. If the discussion is to be held at an epistemological level, it proves very difficult to move forward. However, form a linguistic perspective, specifically a pragmatic one, it is possible to clarify the relationship between judge and expert, and to understand the basis of the applicable procedural rules.

3. JUDGES AND EXPERTS: THE ESSENCE OF THE JUDGING FUNCTION

In order to understand what use pragmatics can have in helping to solve the problem, I believe it is useful to recall here what in essence the judge's function is. Because under the approaches that question the judge's capacity to meet the challenges of the technicalisation of society, there are three latent errors that need to be identified. All three derive from the erroneous understanding of the role of the judge, and lead to a problematic approach to the relationship between judge and expert. We are not referring to protocol issues, dignity, or merit of each one: what is at stake is the proper understanding of the jurisdictional function, its purpose, its methodology and its autonomy.

The first error arises through forgetting the limited nature of a judge's judgement, as the judge does not choose what is judged, nor the extent or the terms of the judgement, but rather all of it is given to him or her, as are the rules or principles according to which he or she must judge. The second error is also due to an oversight. In this case, it stems from overlooking the fact that the nature of the function of judging is not changed by the presence of non-legal elements in the proceedings. The last error, at the heart of the matter, stems from a fallacy: the attribution to the judge of a role that is not his or her own. Let us look at each of the above.

3.1. The judge's judgement is about a request

There is a tendency to idealise a judge's decision-making process, as if the judgement were about the whole of the reality of the case. But the truth is that courts are not asked to pass judgement on *what happened*, but on *what the parties say happened*. The court, whose function is to apply the law to the case at hand, is not required to verify what the events were, but whether they were as the plaintiff –or the prosecutor or the prosecution in a criminal case– says they were. Not because there is a procedural truth that differs from the actual truth, but because the trial is an affirmative or negative answer to a request: the request of the plaintiff or prosecutor against the defendant.

This is a crucial aspect to take in account because it is within the limited framework of the plaintiff or the accusation that the contribution of scientific-technical knowledge has its place. The context, the delimitation, conditions the

activity of the expert, who is not intended to establish a conclusion, a truth, or a scientific interpretation in a definitive, or more or less definitive manner, but rather to explain or accredit a controversial fact which is relevant for resolving the matter (Picó i Junoy 2007: 233).

What the parties bring to the trial are a selection of "fragments" of what occurred which they consider to be relevant to the success of the claim or to refute it. What the judge must do before sentencing is analyse whether these fragments have been accredited. The plaintiff or accuser will give their version and try to convince the court by calling witnesses, experts, documents, reports, etc. to corroborate their version. The defendant or accused, in turn, may add to or contradict the plaintiff's account, in which case they must also try to convince the court of what they say to the extent that it is incompatible or allows for a different outcome to be reached.

Logically, the delimitation of what the judge must judge is not left to the parties to decide. Procedural law includes mechanisms designed to try to prevent the jurisdictional function from being exercised on the basis of fictitious narratives. In the civil domain, whoever goes to court must justify their standing to act, and they also must identify the person against whom they are directing their claim. In every system in the criminal domain, there is a whole prior phase, the investigation, or preliminary criminal proceedings, that does aim to find out what happened and verify whether there is sufficient basis to formulate an accusation and go to trial before a judge or court, which in the Spanish case will always differ from the one conducted by the investigation.

The so-called *rules of burden of proof* derive from this limitation of reality subject to prosecution, which oblige each party to bear the consequences of the lack of proof of the facts that they have alleged in their favour. Such rules are established taking into account the different positions (active or passive) of those involved in the proceedings, and the type of proceedings (criminal, civil, administrative, labour) in which they take place. For example, in criminal proceedings, the presumption of innocence, which is a fundamental right, conditions the consequences of the lack of evidence. Or in certain areas of civil proceedings, such as family or consumer law, there are rules that facilitate evidence or restrict the freedom of the parties to establish what the judge must judge.

As this is the limited scope of the expert's work, there is no guarantee that his or her intervention will be effective. It can be more or less convincing; it can be irrelevant or decisive; it can provide clarity or increase confusion. Experts, whether appointed by the parties or by the judge, are under an obligation not only not to mislead the court, which would be a serious offence, but also to act impartially and to acknowledge, where necessary, the limitation of their conclusions or even the impossibility of reaching any at all. But even when their conclusions are as reliable as possible, there is no exemption from the need for them to be intelligible to the court and to be convincing, for that is the measure of the effectiveness of their intervention in the trial.

3.2. A judge always settles legal disputes

The second error is to attach such weight to scientific or technical issues that are believed to alter the nature of the debate. Somehow the presence of such issues would push the legal aspects to the sidelines, forcing the experts to play a leading role. It must be said that science and technology are indeed omnipresent, and law is no exception. Laws often contain technical and scientific references that make them difficult to understand and apply,[13] and legal claims often have a strong technical or scientific background. But, however great the scientific or technical content of the applicable rules, and however sophisticated the techniques used to assess a given fact, a judge only resolves legal disputes. And although there may sometimes be heated scientific debates in the courtroom among the experts involved, they are never comparable to those that may take place at a scientific congress or in the context of a research team, neither in terms of their content nor their purpose. The judge will not express an opinion on scientific issues, which are beyond his or her field of expertise and have no bearing on the sentence. A judge's judgement is limited to applying the law to the facts. And if something other than that were requested, the claim should be simply dismissed.

My I will try to explain this by way of example. If someone is looking for a way to prevent a drill from penetrating beyond the surface that is being drilled, that person will be faced with a technical problem and will use knowledge of mechanics and physics, albeit intuitively. If, once a way of solving the problem has been found, the person wants to apply it to a specific field, such as surgery, this would be a scientific problem that would require the application of knowledge of anatomy, physiology, etc. However, when the matter is to establish who should be liable in the event that the device in question causes damage to a patient, we are faced with a problem that neither medicine nor engineering can solve, for the simple reason that it is a legal problem, just as assessing the *patentability* of the device would be a legal problem. This is because, among other reasons, the concepts associated with such assessments, such as liability, fault, malice, patent, novelty, etc., are legal concepts and only exist as a legal reality.

Neither the essentially technical content of what is regulated by law, nor the usefulness or need for technical knowledge for assessing certain facts alter the legal nature of the jurisdictional function. Even laws that refer to technical matters are just that, laws, legal rules. In technical or scientific matters, the law comes into play only when there is a need to prevent or resolve something that affects relations between people, something that has social significance. And, although the differences between cultures and legal systems can increase or decrease the degree

[13] Whilst comprehension difficulties are a broader problem involving other factors, and there is a growing awareness of them. See e.g. the recent Interinstitutional Agreement between the European Parliament, the Council of the European Union and the European Commission on Better Law-Making of the 13th of April 2016. Official Journal of the European Union L 123/1. 12.5.2016.

of the presence of law, the fact is that, in the scientific-technical field, law is fairly homogeneous due to the existence of international conventions or regulations from various organisations that are replicated or incorporated into different legal systems.

Legislative bodies, administrations and the commissions within them which prepare draft regulations are assisted by the relevant scientists or technicians who provide the necessary knowledge and guidance in order for the regulation to meet its objectives. In many cases, the scientific or technical contribution will not be limited to *the how*, but will also cover *the what* and *the what for*. The scientific and technical foundations of what is being regulated – *the how* – may be beyond the legislative chambers' members' comprehension. However, this should not be the case regarding the need or convenience of the regulation, the problem it seeks to solve, nor the purpose it seeks to achieve – *the what* and *the what for* – all of which must be absolutely understandable to the members of the legislative chambers or the administration with regulatory powers. It is up to them to decide whether they are appropriate, using criteria not only from the field of natural or experimental sciences, but also from other fields, such as law, ethics, sociology, economics, ecology, etc. Therefore, a greater or lesser degree of scientific content of a regulation does not alter its legal character, nor does it require different treatment from any other regulation. The same should apply to any conflicts that require its application in order to be resolved.

Some of the aforementioned factors, particularly the excessive admiration for science whilst forgetting its limitations, have resulted in various proposals for the replacement of judges, something which could appear to be yet another stage in judicial specialisation: there are criminal judges, civil judges; within the civil system, some specialise in commercial matters or family law, etc. However, these are different phenomena, for it is one thing to try and facilitate the work of judges and obtain higher quality, speed and homogeneity in the resolution of cases through the specialisation of jurisdictional bodies, and quite another to try to make judges experts in extra-legal matters for the same purpose. The experience that every judge acquires throughout his or her career, which ends up familiarising them – as happens with lawyers and other legal operators – with a wide variety of fields of knowledge, should not be confused with the requirement of a regulated apprenticeship in a given subject as a prerequisite for judging in matters related to it. Such would be the case, for example, of courts specialised in lawsuits related to construction handled by judge-architects or judge-engineers; courts specialised in medical liability handled by judge-physicians, etc.[14]

Disputes being solved by experts is not unknown in different justice systems as an alternative to judicial proceedings in private law through the third-party

[14] In this hypothesis, besides other reasons, the judge's expert status could make him or her reject the intervention of other experts, severely jeopardising the right of defence and control over sentencing in subsequent appeals (Flores Prada 2006: 167). In the same sense, see Fernández de Retana Gorostizagoiza (2010: 58).

expert determination (*arbitraje de equidad*). In such cases, the dispute will have been reduced by mutual agreement to a technical issue which resolution will lead to the settlement of the conflict. The basis of the arbitration award will not be legal rules, but the expert's *best knowledge and understanding* or the relevant scientific principles.

In contrast to third-party expert determination, in legal proceedings, the dispute can never be resolved on the basis of the judge's *best knowledge and understanding*, but exclusively in accordance with the law, based on and motivated by the application of the legal system. Moreover, it may be the case that in a legal proceeding, the only issues on which the parties disagree are legal ones. Finally, to conclude this brief review of differences between arbitration and legal process, access to justice is a fundamental right and the effectiveness of the judgements can extend beyond the specific case decided through what is known as case law. In contrast, arbitration is an option, not a right, and the effectiveness of the award is restricted to the issue to which they refer.

To close this section, let us look at the course of the proceedings. The claim has been prepared by a lawyer who has had to comprehend the issue raised by the client, provide a legal framework and submit a request to the judge for protection that clearly explains what the petition is about and its legal basis. The judge, after forwarding the petition to the defendant – the one against whom the petition has been filed – will receive a reply, prepared by another lawyer, who in turn must explain in an equally intelligible manner his or her version of the facts and the reasons why, if any, he or she considers that the plaintiff's petition should be rejected. Before making a decision, the judge will have presided over a trial in which the evidence proposed by each party to prove the facts alleged as the basis of their claim will have been examined. In order for all of these steps to be carried out and to have any meaning, it is necessary that the legal operators involved – judges, prosecutors, lawyers, solicitors – understand the controversial issue at stake, no matter how technical or scientific the subject matter of the proceedings may be.

The approach to the claim, the selection of what is to be proven at trial, etc., cannot be carried out without having understood what is at stake, where the controversy lies. This does not mean that the above legal operators have had to become experts in each of the extra-legal matters that come into play. This is not, therefore, a process of learning, of transmitting scientific and technical knowledge, but rather one of transmission of information, of communication. It is a very specific context, a judicial controversy, where all communicative activity is aimed at the judge and the other judges who, in the event of an appeal, may subsequently review the sentence passed.

3.3. A judge is not an expert of experts *(peritus peritorum)*

As previously mentioned, the last error to be identified is that the judge is assigned a position or a power which in reality they do not have, namely that of being an expert of experts. The expression *peritus peritorum*, of uncertain origin, lies at the

root of this confusion which, in the literal sense, would imply that the judge is entrusted with the function of deciding which of the opinions is more correct or appropriate according to the relevant science. This literal interpretation is commonly recognised by legal doctrine as a fallacy (Bonavia 2016: 85-87)[15] and, if it could once have served judges as a means of imposing their authority, it is nowadays shown as an archaism in the system by those who question the treatment of scientific knowledge in legal proceedings.

The misunderstanding originates in the difficulties in explaining the complex set of phenomena that take place in legal proceedings. Thus, when we say that the expert *provides scientific knowledge*, we are speaking figuratively, but the figure used gives the impression that the scientific knowledge is brought to the proceedings in a conclusive, pure way, almost like an oracle. Given such an impression, for a layman to decide whether to trust it, or which appears to be more reliable, seems nonsensical. But quite the opposite, the judge must only discern those facts of legal relevance that have been adequately accredited using their senses, their experience and all their faculties, the only limitation being the rules that govern the correctness of human thought. This is a complex set of operations referred to in various ways by procedural law in the Spanish system. These are the rules of *sano juicio* (sound judgement) in Article 295 of the Civil Procedure Act, or the *rules of criterio racional* (rational criterion), or the *assessment according to conscience (apreciación según su conciencia)* in Articles 717 and 741 of the Criminal Procedure Act.[16]

If there is a correct way to understand it, it would be by referring not to the superiority of the judge but to the power to assess the credibility and grounds of certain opinions with respect to others. What this paper argues is that, without considering this view to be incorrect, I believe it is necessary to complement it by referring to the ultimate outcome. After all, this and all other evidence seeks to attain a conviction. It also seems to me that the judge's position in relation to the expert opinion is more understandable if we consider, as we shall do below, that it is merely one more piece of evidence, and that there are rules that require each party to bear the lack of proof of the facts that they have alleged.[17]

As occurs in the rest of the evidential activity, the court's assessment is not a judgement on the science or technique, but rather a judgement of credibility that includes the qualifications of the expert, the intelligibility of the report, the scientific or technical community's acceptance of the techniques or methods used, and the logic and plausibility of the conclusions reached (Fernández de Retana, 2010). All of

[15] The discussion concerning the very purpose of evidence is deliberately avoided, as this would lead us away from the subject. A very interesting approach to the issue can be found vid. Cavallone and Taruffo (2012).

[16] This old-fashioned expression describes the entire range of assessment procedures applied to all evidence, as stated in Art. 295 LEC and reiterated when mentioning various means of evidence (cf. Art. 316 on the interrogation of the parties; Art. 326 private documents; Art. 334 reprographic copies; Art. 348 expert opinion). In criminal proceedings, the equivalent expression is assessment according to conscience in Art. 741 or rules of sound judgement in Art. 717.

[17] See Franconi (2015: 214) for the broad sense of the term that could be admitted.

these operations of knowledge, cognition and assessment are not carried out by the court in expert capacity, which it does not have, but rather in the capacity of the judge to whom all this activity is directed, as the sole addressee of the evidential activity is the court, and it is the court whose conviction on the facts is to be obtained.

What the judge must assess is the credibility of the expert's reasoning and will be assisted in this by the expert themselves and their explanations, as well as by the other side and by the lawyers who question them. If a judge does not understand anything of what is said by an expert, if there are logical leaps in his explanation, etc., what will happen is that the expert evidence will be ineffective, not because the judge considers his or herself to be more expert than the expert, but because the evidence has not fulfilled its function. The consequences of such inefficiency in the judicial decision will depend on the importance of what has not been proved.

4. COMMUNICATION AND EXPERT EVIDENCE: THE VALUE OF A PRAGMATIC PERSPECTIVE

To summarise what has been said so far, before addressing the core of the paper, one could say that if the issue to solve is a legal one, if the facts are delimited by the parties and the judge is not an expert of experts, then the expert's activity has unique qualities. This means that, although the activity is that of a scientist or an expert applying their knowledge, it does not coincide with the activity that a scientist or technician carries out ordinarily. Indeed, *forensic* activity is different from any professional activity whatsoever, or from the task of conducting research or teaching.

The perspective of the linguistic branch known as pragmatics allows many procedural aspects to be clarified. Indeed, within the legal field, there are different levels of communication that can be identified. The level that corresponds to the process – which elsewhere I have referred to as *vindictive* or *conflictual* (Hernández Galilea 2016: 37) –[18] has its own particular rules that coincide with those required by any dialogue that deserves such a description. These rules were systematised long ago by Grice (1975: 41-58),[19] who regarded the subject's intention/meaning as the central notion of communication. He argues that a conversation is not a succession of disconnected pieces of information, but that a certain degree of cooperation is implied and allows each speaker to perceive the other's intentionality, enabling the dialogue to unfold in a logical way. Grice condenses all of this into the *Principle of Cooperation*, which requires restraint during speech so as to adapt what needs to be contributed in relation to what is being discussed and in the direction in which the conversation is taking place. This principle is divided into four categories: quantity, quality, relation and manner. Each of these categories makes it possible to identify what contributions are made to communication in a given dialogue. A detailed

[18] A more thorough explanation of the usefulness of a pragmatic perspective in the science of the process and its rationale, as well as key bibliographical references, can be found there.

[19] For an explanation of the meaning of these principles, see Bethan (2007: 2308- 2331).

analysis leads to the conclusion that all four categories are present in procedural rules.

It is in this communicative context that the expert's presence in the proceedings must be considered. The expert's intervention is not the abstract application of his or her knowledge to solve a problem, elaborate a hypothesis or design an experiment to corroborate it; nor to contribute to the development of his or her particular scientific field; nor to manufacture or repair something. What is asked of the expert in the process is to corroborate or reject a factual hypothesis that they are provided with (because the parties have alleged it); or to identify or analyse a set of data or findings that are or have been provided as sources of evidence or pieces of conviction; or to explain how a phenomenon is produced or how a machine works, etc. This must be done in a way that is convincingly intelligible to the judge whom, regardless of whatever knowledge they may have, is there in the condition of a layperson.

In view of what has been said so far, we can clearly appreciate the two different levels of expert intervention in the proceedings to which we referred at the beginning of this paper. On the one hand, there is the epistemological level, which gives meaning to the expert's presence in the process: he or she is called upon precisely because of their knowledge and is expected to apply it in order to shed light on the matter, to collaborate in the comprehension, understanding or substantiation of a disputed fact. On the other hand, we have the communicative level, that of conveying conclusions. Both levels are decisive. The latter, as I have been stressing, is fundamental in order to avoid the deadlock of the confrontation between two forms of knowledge —legal and scientific knowledge— and the hierarchy between them.

4.1. Knowledge, understanding and conviction

Above, I have stressed that the purpose of evidence is the formation of a judicial conviction regarding a certain fact. The action of convincing, in any of its meanings, refers to knowledge and has a preponderantly argumentative content, the purpose of which is to effectively influence the judgement of another person.[20] The operations carried out by the judge in forming or reaching a conviction are, of course, complex and some of the influencing factors may not be rational but, predominantly, they derive from the inductive-deductive process that leads to the acceptance or rejection of the proof of the fact.

Unlike the other means of evidence, which deal with pre-existing things, people or data, related to the facts on which the petition is based, the expert witness

[20] "Convince: to cause someone to believe something or to do something". *Cambridge Dictionary*.

is a figure completely unrelated to the facts, who is called to the proceedings as an expert, i.e. a person who possesses specific knowledge that is not normally possessed by non-experts. However, his or her presence is not required in order to train the judge in this type of science or to rapidly transform him or her into an expert, but rather to clarify, by means of his or her knowledge, a certain fact, or to interpret a piece of information, using the necessary technical resources.

As has already been mentioned, this specific content of expert evidence, which is, in reality, *evidence on evidence*, allows us to see that its purpose is primarily communicative. It is true that there is a phase in expert evidence, previously mentioned, in which the expert applies his science and in which the cognitive or epistemological aspect is the most relevant. But the purpose of such oppressions is to issue a report to the court, and the subsequent presentation and explanation of said report. In other words, the expert is not brought to the proceedings in order to carry out a scientific investigation, but to support or rule out a hypothesis in a well-founded and intelligible manner: well-founded because it must be the result of the application of specialised knowledge that requires his or her involvement; intelligible as the addressee of his or her conclusions is the court, and the aim is to facilitate the assessment of a relevant fact in order for a decision to be taken. If what the expert provides were a simple, categorical conclusion without any clarification, or if the explanation provided were unintelligible, it would not have fulfilled its function.

Many are the attempts that have been made to *dissect* a judge's interventions with regard to expert evidence,[21] but I believe that it can be argued that they are interventions that are in part common to the other personal evidence – the testimony of the parties and witness evidence – and in part derived from the complex structure of the evidence that has been discussed above. Each operation entails the process of receiving the evidence and a simultaneous or subsequent process of assessment. In the case of expert evidence, it is first received in writing and then verbally. As has been pointed out, the first thing that the judge receives is a report, but, although the law allows the evidence to be considered as having been given, nobody who is truly interested in the proof of a fact would refrain from calling the expert witness in court in order for them to provide an explanation (Chaves 2017). The latter, the appearance of the expert at the trial, is conceived as a cross-examination in which the judge can also intervene. What will be sought by the interrogating lawyers and the expert, using whatever means they deem appropriate, will be for the judge to understand the information as a prior step towards its assessment in relation to the other evidence. Comprehension precedes assessment (Chaves 2017).

A different matter is the fact that in various fields of science, the processes for obtaining results with a minimal margin of error and a prefixed interpretation are becoming simplified and generalised. Such traits mean that what used to be expert evidence becomes a mere investigative procedure, a report, or what some consider

[21] See, for example, the interesting distinction made by Fernández de Retana Gorostizagoiza (2010: 58).

a new type of proof, different from expert evidence, called "scientific evidence" (Sánchez Rubio 2016: 8).[22] As technical advances become part of our lives, certain knowledge ceases to be exclusive to experts and is shared by the general public, even becoming *well-known or given* facts which do not require any proof whatsoever. This is currently the case, for example, in the field of telecommunications, with the possibility of device location, or the storage of messages and images.

Moreover, in some cases, this generalisation of knowledge is accompanied by a simplification of the application mechanisms that eventually render unnecessary the intervention of an expert in order to guarantee a certain result. This is the case with speedometers or with the analysis of certain substances. Logically, other requirements arise, such as the proof of origin of the samples, chain of custody, etc., which may be disputed and require evidentiary activity.

As developments are continuous and the generalisation of knowledge takes time, there are always new means of proof attempting to gain ground and which are debatable within the scientific or technical sphere itself. Consider, for example, the difference between now and 1987, when the possibility of identification through DNA as evidence in criminal proceedings was first raised (Mestres Naval and Vives-Rego 2015: 6).[23] First, the scientific basis of the exclusivity of each individual's DNA and the method of comparison, reliability, etc., had to be explained. And subsequently the court had to be convinced of the reliability of the results obtained. Nowadays the expert, if he or she is required to appear, does not need to begin with such explanations because they have become part of the common body of knowledge.

It is not unusual, therefore, that certain legal modifications have been carried out so that this reality may be applied to the functioning of the process. This is the case, for example, with the modification introduced into the Criminal Procedure Law in relation to the analysis of psychotropic substances carried out by official laboratories which, since 2002, in Article 788, *has been classified as documentary evidence.* This precept puts an end to the defendants' claim that laboratory technicians should appear as expert witnesses in all proceedings. By classifying as documentary evidence, it becomes *real* evidence (from the Latin *res*, thing), as opposed to expert evidence, which is *personal* evidence and, as such, requires the appearance of an expert who has drawn up the report if requested by the parties. The importance of expert evidence as personal evidence will now be discussed, as it is essential in order to resolve the issue raised.

4.2. A means of proof like any other

One of the manifestations of the success the technocratic paradigm has had – if I may personalise these trends in some way – is the casting of doubt regarding the status of expert evidence, laying claim to a special value, when, according to legal

[22] On the use of neuroimaging techniques in the process also see Spencer et al. (2008: 309-314).

[23] See also Connors (1996: 4).

regulations, it is just one more piece of evidence, subject like the others to the *rules of sound judgement*. Such an approach may appear to be not very rigorous, especially when referring to the assessment of reports produced by scientists, technicians or experts in the field. However, they represent the materialisation of a real modern-day achievement in evidential matters. In effect, the aim here is to clarify that the old evidence system was surpassed and that the judge, when it came to reaching a conviction, was no longer subject to a rigid system that obliged certain facts to be regarded as proven in certain circumstances – an oath, a number of coinciding testimonies, an unquestionable document – regardless of his or her own personal convictions. This establishment of the system for the free assessment of evidence goes hand in hand with the need to give reasons, meaning that in the ruling, the judge must explain the rationality of how he or she has formed their conviction in light of the different pieces of evidence.

It goes without saying that in this climate of technocratic and scientistic euphoria in which we all, including myself, find ourselves, such freedom for a judge to assess evidence is met with distrust, even disdain. How dare a *layperson* assess an expert's opinion? At the root of this appalled question are two misunderstandings: one concerning the meaning of a judge's freedom, which is by no means arbitrary, and the other concerning the judge's role. Both are closely linked to communication and language.

Evidence, including expert evidence, is aimed at obtaining a judicial conviction on a certain fact, it is precisely the possibility of freely assessing evidence that was a modern conquest, as opposed to the old system of standardised proof (Taruffo, 2010). In the quest for legal certainty, standardised proof forced a judge to consider a fact to be true if certain circumstances were met, such as the coinciding testimony of two witnesses, the confession of the accused or defendant themselves, or the concurrence of two expert opinions, etc. Modern times brought the understanding that this was not a good system for judging. Conviction, including the judge's, is achieved and reached, it cannot be imposed. Hence the virtue of the expression *sound judgement*, which has made its way from one legislative text to the next in the Spanish legal system.

What expert evidence does have are features that distinguish it from other evidence, and that are closely related to the topic of this paper. To begin with, it is a complex piece of evidence as it involves a succession of steps:

a) The choice of *the type of expertise*, in other words, the scientific or technical field within which some insight can be found in order to assess some disputed fact. This choice will be more or less unrestricted depending on whether there is a certain type of qualification required of the expert, who could be anything from a musical composer to a nuclear physicist.
b) *The designation of the expert* who is to intervene, their acceptance and oath or promise to act as objectively as possible, taking into consideration both the favourable aspects and those that could be prejudicial to any of the parties, and the declaration that they are aware of the criminal sanctions they could

incur if they fail to comply with their duty as expert witness (art. 355 of the Law on Civil Procedure).

c) To provide or indicate to the expert *the purpose of the expertise*: places, samples, substances, data, documents or people upon which he or she is to apply their knowledge, and the information that is to be interpreted or submitted for his or her consideration.[24]
d) The carrying out of the necessary *procedures*, if any: analyses, measurements, simulations, etc.
e) To issue *the report*: the expert will issue their report, normally in writing, following the sequence of steps mentioned above: identification, qualification or justification of their status as an expert, description of the purpose of the expertise, description of the methodology used and the corresponding results and conclusions.
f) *The appearance* of the expert at the trial in order to expand on or clarify any aspect of the report, and to answer any questions put to him or her by the parties and the court.

As can be seen, this sequence includes very different activities: (a) to (c) have a strong legal component that requires a prior understanding of the problem, the selection of the relevant facts, the establishment of the hypothesis to be demonstrated, and how to do it. (d) is a strictly technical or scientific activity which follows its own protocol. Nevertheless, the last two, the issuing of the report and the appearance of the expert in court, are procedural activities where the predominant element is communication which, I insist, has no other addressee but the judge.

The second step, that is, the appointment of a professional, may be done by the court or by the party submitting the evidence, depending on the type of proceedings – civil, criminal, administrative, occupational or military – and the stage at which it takes place. Generally, the party submitting the evidence has been the one to do so in civil proceedings since 2000. This does not exempt the expert from impartiality, which must be clearly indicated, but the fact is that at the time of the trial the judge will be faced with two conflicting opinions and it won't always be possible to rely on the opinion of a third expert. In criminal proceedings something similar can happen, the difference being that the experts on both sides, the prosecution and the accused, can usually participate in all operations and will be provided with the same data, thus facilitating the possibility of critical assessment. It is a questionable regulation, but here is not the time to go into its origin and alternatives. It is worth noting that the expert is not limited to issuing a report, but must appear if requested to do so by the parties. Therefore, it is in fact *personal* evidence, that is to say, evidence that is not provided by the mere presentation of an object or document – which would be *real* evidence, from the

[24] What is known as expert evidence can range from the mere explanation or description of a phenomenon to the attempt to find an explanation of its origin. In this sense see Law Commission of England and Wales (2011).

Latin *res*, thing – but requires the presence of a person, who can be questioned and asked to explain, clarify or expand on the report, and can be subjected to criticism by the defence of the party to whom the report is detrimental.

The weight of none of the evidence is predetermined, unlike in the archaic systems of standardised evidence, but rather the judge can freely assess the evidence according to the common criteria of logic, which will have to be accounted for when giving grounds for the ruling. In a recent ruling, the Spanish Supreme Court[25] has once again stressed that expert evidence is subject to assessment according to the rules of sound criticism, like all other evidence, as briefly stipulated in article 348 of the Civil Procedure Act. It also recalls, citing previous rulings, the limitations of this freedom of assessment, considering that the rules of sound criticism are violated when the ruling does not include any assessment of the findings of the expert's report; or disregards the content by omitting data, altering it, deducing different conclusions from it, assessing it inconsistently, etc.; or if the court relies on the expert's report or the court relies on the report in order to reach different conclusions; or finally, where the court's reasoning based on the report goes against logic and rationality.

Consequently, expert evidence has no special treatment and must be assessed like all other evidence according to the rules of sound criticism, but this is not synonymous with arbitrarily, as the judge must explain the reasons behind his or her conviction. In short, the rule of sound judgement means that it is not the expert who has the last word on the matter and that a discrepancy between experts does not prevent a judge from basing their judgement on one of their reports. Moreover, in order for the freedom of assessment to be reasonable, it must not be based on superior knowledge or on the ability to judge the opinions of the experts, like a reviewer of scientific publications who has to assess the strength of the conclusions or the suitability of the methodology used, as has been mentioned above in relation to the aphorism *peritus peritorum*.

Maybe the most complex problem in regards to expert evidence is the existence of clashing opinions amongst experts, seeing as it puts the judge in an apparent deadlock: what is supposed to help the judge form a conviction becomes an additional problem, the solution to which depends on the perspective from which expert evidence is viewed and its function is understood. In reality, the judge should never be faced with a dilemma. The process is not a mechanism of general epistemological purpose. Although it does involve epistemological content, it is restricted to the parties' claims and there are rules that determine the consequences of the lack of proof of a fact. Therefore, if after having made use of the means available by law, such as the intervention in the interrogation of the expert, the judge is not convinced of the conclusions, as has been stated, this is not a scientific

[25] Civil Division, Section 1. Sentence no. 320/2016 (RJ 2016\1996) of the 17th of May, which incorporates the doctrine established on the matter in the Sentence of the same Division of the 15th of December 2015, no. 702/2015 (RJ 2015, 5747).

judgement, but rather a consequence, the objective intended objective by calling upon an expert has not been achieved, and must be explained in the ruling.

Let us think, for example, of a trial in which an advertising agency and the creator of the musical content of an advertisement are sued by a musical composer for having plagiarised one of his pieces. Unless there is obvious recognition between the two, the assessment of plagiarism requires a knowledge of music that a judge will not necessarily have, and that will be key to resolving the case. The party who needs to convince the judge is the party who has "reported" the plagiarism. If they do not succeed, then the defendant will be acquitted and perhaps the plaintiff will be ordered to pay the costs incurred by the defendant in defending themselves. In other words, regardless of whether the plagiarism actually took place, the judge must be convinced that it did. In other words, it is not enough for the expert to conduct an exhaustive analysis of the elements that define a composition and then compare them, because there will also be another expert who will try to demonstrate that the variations are essential and that any similarities are just a matter of chance. In this situation, what will sway the judge in favour of one opinion or another is not so much the depth of the studies carried out, but rather the intelligibility, expressiveness, the confidence with which the expert answers, the examples given of similar resolved cases, etc.

From a scientistic-technocratic perspective, the logical approach would be for the judge to adhere to the conclusions reached by the experts. This claim is by no means unanimous and is based on a somewhat naïve vision of what science contributes to the process, and perhaps of science itself. As many authors have pointed out – particularly so within the scientific field itself – *scientific-technical knowledge* is not a homogeneous concept. The accuracy and reliability of an expert's report depends on the branch of knowledge in question, on what the expert has been asked to do, on what in procedural terms is known as the *object of the expertise*, and on the qualifications, means and experience of the expert themselves. Not to mention, of course, his or her impartiality and thoroughness.

The Spanish Law of Civil Procedure (*Ley de Enjuicimianto Civil*) reflects the purpose and meaning of expert intervention in proceedings, the terms of which should be read with care. Article 335 of this law states that *when scientific, artistic, technical or practical knowledge is required for the assessment of facts or circumstances relevant to the matter, or in order to gain certainty regarding them, the parties may bring the opinion of experts with said relevant knowledge to the proceedings, or request, in the cases foreseen in this law, that an opinion be issued by an expert appointed by the court.*

As can be gathered, there is a countless variety of experts who can be called upon according to this rule. Many of them will not correspond with what is meant by natural, technical or mathematical sciences.[26] A commercial pilot, a farmer, a linguist, a museum curator, a ski instructor, a real estate agent, an economist, etc.

[26] One of the characteristics of the method used in experimental sciences is falsifiability: "if a hypothesis cannot be subject to the possibility of being disproved by means of observation or experiment, it cannot be considered scientific. A hypothesis, in order to be truly classified as scientific, must be falsifiable" Mestres Naval and Vives-Rego (2015: 2-3).

are all professionals who could be called upon and intervene as experts in a proceeding. But even within the natural, technical or mathematical sciences, an analysis of psychotropic substances by *thin-layer chromatography*, for example, is not the same thing as estimating the causes of an accident. Each field of knowledge, and therefore each type of expertise, has its own methodology, rules and limits. The principles of uncertainty and variation that characterise experimental sciences require the use of mathematical statistics for the proper interpretation of facts. Therefore, if the expert witness uses experimental sciences, although in some cases the conclusion can be presented as a certainty, such as in the case of denials or exclusions, in others they will only be able to establish greater or lesser probability or plausibility. And, although statistical methods may be used to draw conclusions, a definitive answer cannot be expected in all cases (Mestres, and Vives-Rego, 2015).

On the other hand, there are factors that make an expert's evidence more or less reliable or convincing, such as the available means, their correct use, and consensus within the given domain regarding how appropriate those means are in providing an answer to the questions raised. In short, not all expert evidence is scientific evidence, and not all scientific or technical expert evidence is equally likely to provide an answer to the questions asked.

5. COMMUNICATIVE CONTEXT AND ITS VALUE

I believe that throughout this text the lack of attention devoted to the communicative aspect of all evidence, especially personal evidence, has had a very important effect on the difficulties that exist in ensuring that the functions of the judge and the expert witness are harmonious and compatible.

This is taken as a given – the expert must explain, of course – but it is regarded as secondary or as falling within a phenomenological scope that is alien to the science of the process. However, it is extremely interesting to see that, from the perspective of the scientific disciplines that study these phenomena, it is possible to clarify areas as complex as this one which, as this paper has sought to demonstrate, would otherwise be trapped in an interminable discussion.

There are increasingly frequent claims that communication plays a leading role in the makeup of expert evidence. For example, in forensic medicine, Luca, Navarro, Cameriere (2013: 9-11) claim that there is a need for a greater demand from jurists for experts to translate the methods and results of their opinions into common language, communicating the margin of uncertainty of the report to the judge, in the most rigorous and clearest possible terms. They emphasise that the belief that scientific evidence is all but indisputable can hinder the proper reasoning of decisions.

This aspect has also been stressed in jurisprudence, highlighting the transcendental importance of the expert's appearance before the court. A recent ruling by the Administrative Chamber is very interesting in this regard. Seeing as the party submitting the expert evidence had already had the opportunity to make

any observations or clarifications deemed necessary prior to presenting the report, the lower court denied the expert's appearance on the grounds that, as he had been appointed by the plaintiff, it would only make sense for him to appear for clarifications or amplifications if the opposing party requested so. In contrast to this opinion, the Supreme Court considers the appearance of the expert itself as part of the evidence and, furthermore, shows why this is meaningful, noting that the very court that denied the appearance used the inadequacy of the report as a reason for not taking it into account (Chaves 2017).

Furthermore, precisely in order to guarantee the quality and rigour of the reports, suggestions have been made to find ways of disclosing expert opinions and reports, taking the necessary precautions of course to respect the rights to honour, self-image, etc. This would ensure that the expert not only be under the threat of committing a crime with a biased or manipulated report, but also under the scrutiny of his or her professional community, stimulating the rigour of the conclusions and the quality of the reports, which would also result in greater usefulness within the process (Brent 2006: 2222-2225).

6. CONCLUSIONS

The epistemological approach to the relationship between technical scientific knowledge and jurisdictional function, which has prevailed until now, ends up leading to the denaturalisation of the jurisdictional function and, in the long run, of legal science itself. Certain traditional definitions and aphorisms have contributed to this, placing the judge in a superior position with respect to the experts, which obviously is not the case. This is what happens when the function of the expert is defined as the contribution of knowledge to the proceedings, and function of the judge as *peritus peritorum*. When this is the approach taken, the presence of conflicting expert opinions leads to dead ends. The need then arises to establish evidentiary assessment criteria or standards of proof which, in the end, are not capable of resolving the problem.

On the contrary, the pragmatic approach, which, as I have already mentioned, is not foreign to judicial process, allows for the clarification of the both the expert's and the judge's position, as well as for their full potential to be brought to the procedural rules.

Indeed, the expert witness does not provide knowledge in the same way that a document is handed over by someone or a lecture is given. An expert is a specialist, a person, not a book or a compendium. He or she carries out a specific and precise assignment issued by the parties or the judge, using his or her knowledge and experience. Within the terms of that assignment (purpose of the expertise) he or she will carry out whatever operations deemed necessary in order to provide an opinion. And once a conclusion has been reached, the expert will present it first in writing and then verbally, if called upon to testify in court.

The essence of the expert evidence is, therefore, a comprehensible explanation

of the conclusions that the judge must be able to understand about what has been proposed to them. This explanation will cover, if necessary, the method chosen and the reasons for this choice when there are several possible methods, the reliability and limitations of the results, the expert's experience in the field, the publications that support his or her opinion, etc. Without a doubt, it is an act of communication that is considerably conditioned by its context: the addressee is the judge, who is not an expert in the science that is being used, and the purpose is to obtain his or her conviction on a relevant fact to the decision that must be made regarding the admission or dismissal of the plaintiff's or accuser's claims. Procedural rules, the main purpose of which is to place the judge in the best conditions to deliver a verdict, transfer not only legal categories, such as procedural premises, rules on the burden of proof, legal standing, etc. to the process, but also, prior to this, they transfer categories that come directly from the science of language, the phenomenon of communication. This entails that each party can know what the other alleges and can express its views by addressing the judicial body, the true addressee of the established dialogue – an act of communication.

Moreover, in the procedural setting in which this communication takes place, there are *regulated implications* that make it possible to resolve perplexities and are not strictly speaking epistemological rules.[27] This is the case with the *rules of burden of proof* which prevent the judge from being obliged to accept a conclusion with an unintelligible basis or questionable reliability. They also prevent the judge from being forced to choose between expert opinions when neither is convincing. "Who ought to have proven the fact that has not been proven?" This is the issue that must be addressed: depending on the importance of the fact in question, its lack of proof will have a greater or smaller impact on the outcome of the proceedings. If the fact is at the core of the plaintiff's allegations and has not been proved, the consequence will be the defendant's acquittal. If, on the other hand, it is a secondary fact, the outcome will depend on the other evidence.

This approach places communication in the foreground. The expert is brought to the proceedings as a specialist in order to attempt to clarify a disputed fact and to explain it to the court using his or her expertise. This is a specific act of communication, the clarification and transmission of an opinion together with its foundations and limitations. It is an act of communication which differs from that which may take place, for example, in an educational interaction between teacher and student. With the expert, the act of communication is not intended to give the judge a crash course and make him or her an expert, but rather to convince them of the basis and soundness of the expert's opinion on the given matter and its significance. From a pragmatic point of view this could be regarded as an application of Grice's (1975) maxim of quality.[28]

[27] Concerning the concept of implicature, see. Escandell Vidal (1996: 80 et seq.). On its application to the process, see. Hernández Galilea (2015: 43).

[28] Although it can also be explored from Anscombre's (1994) argumentation angle. What Lepore and Stone (2014) point out about these different perspectives and their connections is interesting as also in Horn (2016).

By placing the communicative dimension of expert evidence in the foreground, rather than the epistemological one, not only is the relationship between science and law, between the judge and the expert, clarified, but at the same time technocratic pressure is avoided. When such pressure demands certain knowledge from the judge, it essentially colonises the jurisdictional function in the areas in which the presence of science or technology is increasingly being felt.

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