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LAUDAN'S META-RULE FOR EVALUATING EVIDENCE AND THE CASE OF EXPERT TESTIMONY

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ABSTRACT: This article examines the challenges posed by expert testimony within the context of the US legal system, focusing primarily on the rules of evidence and judicial practices regulating admissibility—most notably Rule 702 of the Federal Rules of Evidence and the interpretive framework provided by the *Daubert* trilogy. Although many of the epistemological concerns discussed may have broader significance, the analysis is firmly grounded in the American adversarial tradition. Whitin this framework, this article aims to show that in the absence of effective criteria for establishing the reliability of expert testimony, the meta-rule for the admission of evidence proposed by Laudan in *Truth, Error and Criminal Trial* is unusable. Judges are laypeople burdened with the complicated task of distinguishing reliable experts from charlatans. However, from an epistemic perspective, this situation is extremely challenging. Indeed, due to the epistemic asymmetry between laypeople and experts, judges are in a very weak epistemic position to carry out their gatekeeping duty, and unfortunately the *Daubert* standard does not seem to be useful in this respect. What I would like to show is that using a meta-rule for evaluating evidence based on the concept of reliability without previously addressing the question of how to determine the reliability of expert testimony is putting the cart before the horse.

KEYWORDS: expert testimony; Larry Laudan; expertise; Daubert standard; social epistemology.

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SUMMARY: 1. LAUDAN ON EVIDENCE.— 2. THE EPISTEMIC PROBLEMS OF THE GATEKEEPING FUNCTION OF JUDGES.— 3. THE INEFFECTIVENESS OF *DAUBERT* FACTORS.— 4. LAUDAN'S META-RULE AND THE EXPERT TESTIMONY.— 5. PROXIES OF EXPERTISE.— BIBLIOGRAPHY.

1. LAUDAN ON EVIDENCE

According to Laudan (2006), the criminal trial is an "epistemic engine", namely an essential tool by which societies try to find out the truth about a confused situation. The legal fact-finding process can be, indeed, embedded among the truth-seeking practices examined by epistemology. Nevertheless, the legal context can be an inhospitable ground for epistemologists due to the strict boundary between non-epistemic and epistemic values and *Truth, Error and Criminal Trial* is, indeed, conceived as a thought experiment. The central question of the book is a counterfactual one: «What would a criminal trial look like if its fundamental and overriding concern were to find out the truth about a crime?" (Laudan, 2006, p.123).

In the second part of the book, Laudan examines a series of rules and procedures that seem to interfere with the task of finding out the truth and avoiding error. If we want to find out the truth, we must condemn only those who are truly guilty and acquit only those who are truly innocent. Obviously, achieving 100% correct verdicts is a chimerical goal due to the fact that verdicts are products of human judgment and, therefore, are subjected to an unavoidable margin of error. Despite this, what epistemology can do is to try to identify some epistemically non-suspect rules and procedures that can help legal fact-finders in their complicated task of distinguishing the truly guilty from the truly innocent. In Laudan's words:

> Anything we can do to make it more likely that the truly guilty are seen to be guilty and that the truly innocent appear to be innocent reduces the overall likelihood of erroneous verdicts. It should be the principal function of the rules of evidence and procedure to ensure that a defendant's apparent guilt is as good an indicator of his true guilt or innocence as we can make it. (2006, p.119)

Laudan suggests an epistemic reframing of some of the rules of evidence and procedures effective in the US legal system. As Laudan correctly states, if we want the verdict at the end of a criminal trial to be as correct as possible, it is absolutely essential that juries have access to evidence of satisfactory quality and quantity. According to him, however, several of the current exclusions of evidence are not based on truth-seeking purposes but, on the contrary, «highly germane evidence—evidence that would indisputably reduce the overall rate of erroneous verdicts—is excluded for reasons having nothing to do with the search for the truth" (Laudan, 2006, p.120).

Laudan's extensive examination of numerous rules of evidence leads him to conclude that these rules are not founded on any concerns regarding truth. According to him, a significant number of rules of evidence are informed by the concern that jurors may erroneously evaluate evidence, failing to assign them the appropriate degree of

consideration. Indeed, many current rules of evidence are the consequence of the fact that courts are worried that jurors might evaluate the evidence wrongly. However, he claims, this fear is based on unrefined considerations of juries' psychology, and he sees such considerations as an obstacle to a truth-driven system of judicial adjudication. Consequently, these rules impede the effective functioning of the criminal trial, seen as an epistemic engine designed to establish an accurate reconstruction of the facts.

Laudan argues that to maximize the chances of factfinders reaching an accurate verdict, it is essential to establish truth-oriented admission rules for evidence. Accordingly, the question, as posited by Laudan, is how to construct a set of evidentiary rules that would enhance the probability of reaching an accurate verdict. To achieve this end, Laudan claims that the question of admissibility should be considered through the lens of two key concepts: *relevance* and *reliability*.

Laudan defines relevance in a straightforward manner, stating that a piece of evidence is relevant if, if true, it increases or decreases the likelihood of guilt of the accused. Reliability is, instead, a more complex matter, but, for the sake of my argument, I think we can simply define it as something we can rely upon in order to obtain a belief that is likely to be true. Finally, we can enunciate what Laudan (2006) calls «a simple rule for guiding our decision about the admission of evidence» (p. 121):

> *Laudan's Meta-Rule for Evaluating Evidence*: The triers of fact– whether jurors or judges in a bench trial– should see all (and only) the reliable, nonredundant evidence that is relevant to the events associated with the alleged crime. (Laudan, 2006, p. 121)

To which he adds the following "precautionary" *codicil* a few lines later:

> *Codicil*: Where there is compelling evidence that a certain type of relevant and reliable evidence is likely to be misconstrued by jurors and where there is likewise evidence that such misconstruals are not readily susceptible of correction by judge's instructions and the arguments of opposing counsel, such evidence should be excluded. (Laudan, 2006, p. 122)

Laudan shows that many admission rules for evidence are not informed by this *meta-rule* and, thus, these seem to be an obstacle to a truth-driven system of judicial adjudication. It is interesting to note, however, that Laudan spends very few words on expert testimony, and I think it would be worthwhile to examine whether and how his meta-rule can be used for guiding our decision about the admission of expert witnesses. Nevertheless, it is first necessary to discuss some epistemic problems that arise with regard to expert testimony. The following section will address these issues in greater detail.

2. THE EPISTEMIC PROBLEMS OF THE GATEKEEPING FUNCTION OF JUDGES

It is well known that the use of expert witnesses in civil and criminal trials is becoming increasingly common. Indeed, the judicial system can greatly benefit from scientific advances in order to reach a greater number of factually correct verdicts.

However, this progress is also giving rise to an increasing number of problems concerning the admissibility of such evidence. As things stand, in the US legal system, judges have a gatekeeping role. According to the Federal Rule of Evidence, judges must determine whether expert testimony can be considered reliable and whether it can be submitted to the jurors. Since the beginning, I would like to stress that, as Martini (2015) and Brewer (1998) argue, judges are laypeople charged with the complex task of determining the reliability of an expert witness. It is evident that a certain tension exists with regard to the evaluation of the reliability of scientific evidence by a person who lacks specific scientific training. In this sense, the issue can be seen as an instance of the more general problem of what Selinger (2011) calls "the recognition problem". This problem can be resumed with the question «How can a novice identify experts in a given field of expertise?». The issue arises because laypeople, by definition, appear to lack the capacity to establish directly the trustworthiness of experts.

This presents a similar challenge to that faced by judges in determining the reliability of expert testimony. Judges are not omniscient, and, obviously, they lack knowledge in many domains of expertise. No one is an expert in every domain. Consequently, it is unclear how they can ascertain the trustworthiness of a particular expert testimony. As Brewer (1998) pointed out, the question is how a scientifically untrained judge could be epistemically competent to perform his gatekeeping task. Experts are necessary because they provide useful information about the case that cannot be obtained directly by judges and juries. Indeed, if they were able to arrive at the same information on their own, then there would be no need to involve experts.

Furthermore, it is important to note that the legal context seems to be strongly characterized by the presence of unreliable experts. As many authors have pointed out (see, for instance, Huber, 1993 or Posner, 1999), one of the most problematic aspects of adversarial systems is the strong presence of partisan experts. The fact that many testimonies are given under compensation seems to create an additional difficulty for those who have to establish the trustworthiness of experts. Indeed, if it is already complicated for laypeople to recognize experts to trust, this becomes even more difficult in a context where the risk of encountering junk science is high. For all these reasons, it is not difficult to envisage scenarios in which the decision regarding the admission of expert witnesses is made on the basis of non-intellectual factors. In such cases, if the decision turns out to be correct, it appears possible to conclude that the accuracy of the outcome is just a matter of luck.

Consider the following example:

> *Case A*: Judge Smith must decide whether to admit the testimony of Dr. Johnson, a forensic physician who conducted research to determine the cause of death of a murder victim. Everything seems to be in order, and the conclusions the expert has reached seem to Judge Smith obtained through reliable methods. However, Judge Smith is a layperson who knows absolutely nothing about forensic medicine, and his assessment is based exclusively on what he is able to understand. His judgment is not an assessment of substance but is based solely on appearances. Judge Smith

> decides to admit Dr. Johnson's testimony. Fortunately, Dr. Johnson is actually a reliable witness, and his findings are indeed scientifically acceptable[1].

But there seems to be a problem here: is his decision based on well-founded reasons or is it just a case of epistemic luck[2]? In other words, is it just a matter of luck that the judge has a true belief?

Consider an alternative scenario:

> *Case B*: Judge Smith must decide whether to admit the testimony of Dr. Franklin, a forensic physician who conducted research to determine the cause of death of a murder victim. Everything seems to be in order, and the conclusions reached by the expert seem to Judge Smith obtained through reliable methods. However, as in case A, Judge Smith is a layperson who knows absolutely nothing about forensic medicine and his assessment is based exclusively on what he is able to understand. His is not an assessment of substance but is based solely on appearances. This time, unlike Dr. Johnson, Dr. Franklin is not a reliable witness, and he is just making the case for the side that is paying him through an argument that might appear "scientific" to people who aren't experts in his field.

Are we sure that Judge Smith will be able to distinguish a case of real science from one of junk science? Are we sure that a judge—who i recall is a layperson—will be able to distinguish a trustworthy expert from an untrustworthy one?

Judge Smith, as a layperson, is incapable of assessing directly the content of the testimony, and then he does not appear to be in the epistemic position to distinguish between a trustworthy expert and one who *only appears* trustworthy.

It could be noted that some of the described issues, such as the possibility of bias or rhetorical manipulation on the part of the expert, are more relevant to the fact-finder's evaluation of the testimony's *content* than to its *admissibility*. As we will see in the next paragraph, under Daubert, judges' gatekeeping function concerns the

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[1] It is interesting to note the strong similarities between this case and the famous fake-barn problem discussed by Goldman (1976): "Henry is driving in the country-side with his son. For the boy's edification Henry identifies various objects on the landscape as they come into view. "That's a cow", "That's a tractor", "That's a silo", "That's a barn", etc. Henry has no doubt about the identity of these object; in particular he has no doubt that the last-mentioned object is a barn, which indeed it is. Each of the identified objects has features characteristic of its type. Moreover, each object is fully in view, Henry has excellent eyesight, and he has enough time to look at them reason- ably carefully, since there is little traffic to distract him. Given this information, would we say that Henry knows that the object is a barn? Most of us would have little hesitation in saying this, so long as we were not in a certain philosophical frame of mind. Contrast our inclination here with the inclination we would have if we were given some additional information. Suppose we are told that, unknown to Henry, the district he has just entered is full of papier-mach6 facsimiles of barns. These facsimiles look from the road exactly like barns, but are really just facades, without back walls or interiors, quite incapable of being used as barns. They are so cleverly constructed that travellers invariably mistake them for barns. Having just entered the district, Henry has not encountered any facsimiles; the object he sees is a genuine barn. But if the object on that site were a facsimile, Henry would mistake it for a barn. Given this new information, we would be strongly inclined to withdraw the claim that Henry knows the object is a barn. How is this change in our assessment to be explained?" (p. 772-773).

[2] For a clear and comprehensive explanation of the concept of "epistemic luck" see Pritchard (2005).

scientific validity of the methods employed, not the purity of the expert's motives. Issues such as bias or exaggeration are usually addressed during cross-examination. However, while the formal distinction between admissibility and the evaluation of the testimony's content may be clear in legal doctrine, it may be blurred in practice. The reliability of an expert's methodology cannot be evaluated in isolation from the content of the conclusions drawn. As Haack (2016) noted, in the 1997 General Electric Co. v. Joiner case, the second in the *Daubert trilogy*, the Supreme Court refined its earlier stance by affirming that a judge may exclude expert testimony when there is an excessive discrepancy between the underlying data and the conclusions drawn from it. In doing so, the Court eroded the distinction between admissibility and evaluation, pushing judges towards implicit judgements about the content of expert testimony rather than its methodology alone.[3] The epistemic problems concerning judge's gatekeeping task become even more complex when we consider the high level of specialisation that characterises the sciences. To illustrate, one might consider the field of medical sciences. A neurologist, for instance, addresses very different clinical situations than those handled by a neurosurgeon, and their respective domains of primary expertise are obviously distinct. It is easy to envisage scenarios in which a novice may be unable to identify instances of *epistemic trespassing*. According to Ballantyne (2019), we can define epistemic trespassers as «thinkers who have competence or expertise in make good judgment in one field, but move to other field where they lack competence» (p. 367). Therefore, returning to the legal context, from an epistemological point of view, a judge should not only assess the reliability of an expert but also whether his testimony falls within his domain of expertise.

But this type of problem does not only concern the gatekeeping task assigned to judges. A further complication seems to arise if we consider the issue of *peer disagreement*, which is a characteristic feature of adversarial systems. This issue is particularly relevant to the fact-finding task of juries, who must decide which expert to trust most when the parties present conflicting expert testimonies. The jury, in this case, faces the challenge of determining which of the two experts' testimonies is more reliable, given that the two experts will be providing contradictory evidence. This scenario appears to be an illustration of what Goldman (2001) designates as the *novice/2-expert problem*. In short, the question is whether a layperson can reasonably decide which expert is more trustworthy with respect to a particular issue. In the adversarial tradition, faith is placed in the idea that the competition between two competing testimonies will optimise the search for truth. However, as Goldman (1999) noted, this line of argument seems extremely problematic. Firstly, it operates under the assumption that the premises employed by the disputants are all true, a supposition that is dubious when considering the context of scientific testimony. Secondly, it presupposes that juries are able to correctly evaluate the relationship between the thesis proposed and the evidential support offered, which seems extremely difficult if we consider that jurors are laypeople.

[3] I would like to thank you an anonymous reviewer for encouraging me to clarify this point.

As previously stated, the fundamental epistemological problem underlying all these considerations is that laypeople usually do not have the epistemic competence to adjudicate who is an expert in a specific field and who is not. Judges are laypeople appointed to determine the reliability of expert testimony. Therefore, from an epistemological point of view, a problem seems to arise with regard to their gatekeeping function: How can a person who doesn't have any specific competence in a certain domain establish if someone is a trustworthy expert in that domain?[4]

3. THE INEFFECTIVENESS OF *DAUBERT* FACTORS

The first decision in the US legal system history about the involvement of expert witnesses in courts was in *Freye v. United States* (1923). In this case, the court decided to reject the results of a then-new systolic blood pressure deception test on the grounds that novel scientific evidence did not have a sufficient degree of general acceptance in the relevant scientific community to be admitted into evidence. This decision established that expert testimony must be generally accepted in the relevant scientific community in order to be admissible. As Martini (2015) pointed out, this standard "seems to be grounded on the idea that good science tends to generate consensus around established facts and methods" (p. 4). This appears to be intuitively correct. Ideally, a hypothesis is presented to a scientific community, and through a complex (and non-linear) process of trial and error, is slowly accepted. However, Martini (2015) emphasises, «the problem with the use of consensus criteria in law is that too often consensus is only a *byproduct*, not a cause of good, and therefore, court admissible, science» (p. 4). Indeed, it is not possible to exclude the possibility that scientific community consensus is formed around spurious scientific ideas as a result of extra-scientific and non-neutral factors. Moreover, even if consensus were a good criterion for assessing the reliability of scientific expert testimony, its formation process would still be too slow to accommodate its purpose.

More than fifty years after Freye v. United States, in 1975, the common-law evidentiary rules were for the first time codified in the Federal Rules of Evidence (FRE). Rule 702, which pertains to scientific knowledge, stipulates that a qualified expert witness may be admitted provided that his testimony is relevant to the subject matter of the trial. However, as Haack (2014) correctly observes, the absence of any reference to the "general acceptance" mentioned in Freye v. United States leaves the question of whether FRE 702 had replaced Freye unresolved.

[4] As noted by Tuzet (2023), alongside these epistemic considerations, other semiotic ones can be added. The experts' language is a technical one and it contains a rich amount of signs that are often impossible to understand to laypeople. This semiotic problem generates a justification problem «fact-finders cannot form a justified belief about the relevant matter, nor justify the acceptance of an expert testimony, insofar as they do not understand it» (p. 1)

One of the most important decisions concerning the admissibility of expert testimony was in the 1993 case *Daubert v. Merrell Dow Pharmaceuticals, Inc*., the first of the three United States Supreme Court cases (so-called *Daubert trilogy*) that articulated the current rule of evidence regarding the admissibility of expert witness testimony. One of the central aspects of Daubert is that it is emphasised that in order to admit expert testimony, the judge must not only assess its relevance but also its reliability. As I have already said, under Daubert, the trial judge is seen as a gatekeeper who must guarantee the reliability of experts presented before the jury. To fulfil his gatekeeping function, the judge must assess whether a given scientific testimony is the product of reliable principles and methods. In the sentence, indeed, Justice Blackmun argued that in order to evaluate the reliability of an expert, a judge must look at the methodology used and not at the conclusion he reached. In order to accomplish this task, the court listed several "factors" that might be considered by the judge to determine whether the expert's methodology is admissible:

1) Whether the theory or technique has been tested or is capable of being tested;

2) Whether the theory or technique has undergone peer review and has been published;

3) The known or potential error rate associated with the specific technique;

4) The existence and maintenance of standards for the control of its operation;

5) Whether the theory or technique is widely accepted by the relevant scientific community.

In *General Electric & co. v. Joiner* (1997*)*, the second of the trials composing the *Daubert* trilogy, the court clarified the previous ruling by stating that expert testimony could be declared inadmissible if the judge finds the 'analytical gap' between the data and the conclusions too large.

Eventually, in *Kumho Tire Co. v. Carmichael* (1999), the court extended *Daubert*'s gatekeeping function beyond scientific evidence to encompass all expert testimony. In December 2000, the *Daubert* trilogy was finally codified in FRE 702.

The *Daubert* standard has been the subject of extensive discussion and has been strongly criticised in several respects[5]. Haack (2014), for instance, showed how, from the first ruling composing the *Daubert* Trilogy, there is a marked use of the term "scientific" in its honorific sense. According to her, the term "scientific" and its cognates have, indeed, an honorific use that generates an illegitimate identification between what is scientific and what is reliable. This idea becomes clear when we consider that the court assumes the existence of a unique "scientific method," understood as the only reliable method of inquiry, used by all scientists and by only scientists. But this seems to be extremely problematic for at least two reasons. Firstly, there is not

[5] For a detailed analysis of the history and key issues surrounding the admission of expert testimony in court, see, among others, Hilbert (2019).

a unique mode of rational inference of the kind envisaged by the court. Secondly, it is important to remember that the reliability of the method does not guarantee that the method will produce true results; a "reliable method," in its technical sense, is a method that generates consistent results. These considerations lead to the conclusion that the image of the scientific enterprise on which the *Daubert* Trilogy rulings are based is extremely different from the actual scientific practice.

Further critiques focus on the broader institutional and socio-political implications of the *Daubert* ruling. Edmond and Mercer (2004) argue that the Daubert rulings have created an 'exclusionary ethos' that disproportionately disadvantages plaintiffs, particularly in toxic tort litigation, by making it harder to admit expert evidence. According to their analysis, this shift reflects a convergence of judicial and corporate interests in promoting restrictive evidentiary standards. Similarly, Mnookin (2010) notes that courts frequently fail to apply *Daubert* criteria rigorously in cases involving traditional forensic sciences, revealing a double standard in judicial practice. Other commentators have highlighted the paradoxical outcomes of applying *Daubert*. Giocoli (2020), for example, points out that, in certain antitrust cases, the testimony of Nobel Prize-winning economists has been rejected under *Daubert*. Finally, it is important to note that some scholars have recognised that the *Daubert* standard represents a significative effort in attempting to address some fundamental issues associated with expert testimony. Bernstein (2008), for instance, claims that the *Daubert* framework shifts the focus of judicial attention towards the epistemic basis of testimony. This provides a partial solution to the problem of testimony being distorted by partisan experts, although this criterion alone is not enough to solve the problem completely.

Nevertheless, the focus of this article pertains to the epistemic issues discussed in the previous paragraph. As Martini (2015) pointed out, «Both the *Frye* test and rule 702 […] shift the problem from evaluating the validity of expertise to evaluating the validity of the evidence presented» (p. 6). I fully agree with him when he says that the *Daubert* standard completely ignores the problem of how a layperson can identify trustworthy experts. Although the *Daubert* standard formally restricts the judge's gatekeeping role to assessing methodological soundness, in practice, this often entails engaging with the content of the expert's conclusions. However, a judge, as a layperson, doesn't possess the necessary competence to evaluate the evidence presented by an expert directly; we rely on experts exactly because we are unable to do it alone. The *Daubert* standard, focusing mainly on the method and technique employed by the expert, assumes that judges are able to make a direct assessment of the content of the testimony, and, in doing so, it fails to recognize the epistemic asymmetry between experts and laypeople.

In order to carry out their gatekeeping task, the judges should establish whether an expert is a *reliable source of information*. Nevertheless, if they, as laypeople, cannot do this through a process of direct evaluation of the evidence presented, the only alternative seems to be to address the epistemic problem of how laypeople can recog-

nise experts. In the next section, I will argue that in order to be consistent with the Laudan's idea that the trial should aim primarily at the truth, we need to establish an effective way to establish the reliability of expert testimonies without ignoring the epistemic asymmetry between experts and laypeople.

4. LAUDAN'S META-RULE AND THE EXPERT TESTIMONY

Finally, we can return to Laudan's meta-rule and its difficulties in dealing with expert testimony. The core idea of Laudan's legal epistemology is that the primary aim of a judicial system should be to reach a judicial truth that is as close as possible to the factual one. Laudan believes that epistemology can exert an analytic effort useful to identify all those norms that obstruct this process of truth discovery. As mentioned in § 1, Laudan in *Truth, Error and Criminal Trial* (2006) dedicates many pages to examining some exclusionary rules present in the US judicial system. According to his analysis, many of these are not based on truth-seeking purposes but, on the contrary, represent an obstacle to the process of discernment between the truly guilty and the truly innocent. As already stated, in order to raise the likelihood of a correct verdict, Laudan proposes the *meta-rule* mentioned in the first paragraph.

In my opinion, Laudan's idea that trials should aim at finding out the truth about a confused situation is correct. Accurate fact-finding it's not just an intellectual aspiration. On the contrary, it is a prerequisite for achieving justice. Although procedural fairness and institutional legitimacy are indisputably pivotal to the effective functioning of a legal system, they run the risk of becoming mere formalities if they are detached from the aim of arriving at truthful conclusions. Although in practice it is unrealistic to always arrive at factually correct verdicts, truth must continue to serve as a regulative ideal. However, although Laudan grasps this important point, difficulties emerge when contemplating the employment of his meta-rule for the regulation of expert testimony. In this section I would like to stress that in the absence of epistemically reliable criteria for distinguishing between expert witnesses who can be trusted and those who cannot, Laudan's meta-rule seems to encounter difficulties when used to guide the decisions about the admissibility of expert testimony.

The crux of the issue lies in the fact that the meta-rule proposed by Laudan is founded on two key concepts, namely "relevance" and "reliability"; jurors should see all and only reliable and relevant evidence. Unfortunately, in the case of expert testimony, the inability of judges, as laypeople, to recognise who is a trustworthy expert witness poses a significant challenge in the practical application of this rule. Indeed, the problem is that in order to apply this meta-rule to the case of expert testimony, it is necessary that the question of how to establish the reliability of experts has already been resolved. The situation could be partly improved if there were effective criteria by which judges could evaluate the trustworthiness of expert testimony. In the present state of affairs, as previously outlined, the judge performs a gatekeeping function, determining the admissibility of expert testimony prior to its presentation

to the jury. In this evaluative role, the judge is required to ground their decision on FRE 702. However, as previously discussed, the *Daubert* standard encounters significant difficulties and is completely ineffective in addressing the epistemic challenges identified in § 2. In the absence of sound epistemological criteria for determining the reliability of expert testimony, Laudan's meta-rule appears to be of limited practical application in such cases. Indeed, in order to admit only relevant and reliable evidence, it is necessary to establish efficient methods for evaluating the reliability of expert testimony. In other words, it is essential to identify effective methods of recognising trustworthy experts before this meta-rule can be fully utilised.

It's important to note that immediately after stating this meta-rule, Laudan (2006) suggests that "there is no epistemic reason not to leave reliability decisions entirely in the hands of the jury itself" (p. 121). Hence, Laudan argues, it's possible to delete the term "reliable" from the meta-rule presented above. According to him, this would facilitate the application of his meta-rule in concrete judicial practice. Nevertheless, I don't think that this consideration affect the outcome. Even if we remove the term "reliable" from the meta-rule, a decision about the reliability of experts should still be made, and, at this point, it would be entirely in the hands of the jurors. But jurors are laypeople just like judges, and from an epistemological point of view, the problem remains unresolved: how can a person with no technical competence distinguish a trustworthy expert from a charlatan? Removing the term "reliable" from the meta-rule does not resolve the issue; it merely postpones it.

Personally, I believe that the task of determining whether an expert is trustworthy should remain in the hands of the judges. If the decision were left to the jury, they would be in the difficult position of having to evaluate and make their judgment based on multiple conflicting expert opinions, with no minimal assurance of the reliability of any of the testimony. In this scenario, the decision on the reliability of an expert should instead be made at the height of the cross-examination phase, which further complicates matters. On the one hand, there is the problem of peer disagreement, as mentioned in the first paragraph. On the other hand, if it is already difficult to come up with criteria that can be used by judges, it is even more difficult to do so for juries. However, the most problematic aspect remains that, given that juries are composed of laypeople, the selection of trustworthy testimony could plausibly be based on non-epistemic factors, making, for example, an expert's rhetorical skills more relevant than his actual expertise.

In any case, what is important to note is that beyond these counterfactual scenarios, the current situation is highly problematic. Judges perform their gatekeeping role on the basis of epistemically ineffective criteria, and there is no guarantee that judges will ground their judgement about the reliability of experts on well-founded reasons. Despite this, I believe that by leaving the burden of determining the reliability of expert testimony to them, it is possible to identify epistemically less suspect criteria that can help judges in their complicated task of identifying reliable experts.

As already stated, in my opinion, Laudan's idea that the trials should aim at finding out the truth about a confused situation is correct. However, in order to maximize the chances of success of this enterprise, it is necessary to attempt to remove what obstructs this process of truth discovery. The use of scientific experts in trials is clearly an indispensable element in order to maximise the chances of obtaining an accurate verdict. Unfortunately, the current criteria by which the reliability of expert testimony should be assessed do not seem to be effective. Given the importance of identifying effective strategies to guide judges' decisions on the admissibility of expert testimony, some progress needs to be made. But what solutions can we hope for? The problems associated with the gatekeeping role of judges are many and varied, and it is likely that only systematic and collaborative work across different disciplines can improve the current situation. Nevertheless, for the purpose of this paper, given the centrality of the underlying epistemological problems that I have highlighted in § 2, I believe that it would be useful to give a brief overview to one of the most interesting solutions to the problem of expert recognition that social epistemology has developed in the latest years.

5. PROXIES OF EXPERTISE

The problem of recognition of experts is obviously an extremely interesting issue for epistemologists. This problem concerns all cases in which we base our judgements, our beliefs, and our actions on what the experts tell us. As Cody (1992) pointed out, in modern societies we pervasively rely on others' testimony. However, this does not seem to be perfectly clear-cut, and some tensions seem to emerge with respect to the epistemic asymmetry concerning the relationship between experts and non-experts. Hence, the problem of how can laypeople identify trustworthiness experts is central to many practices in our society and, as already stated, from an epistemological point of view, the case of the recognition of expert witness testimony by judges is just an instance of a more general problem. Consequently, I believe that it may be useful to consider whether the epistemological debate surrounding the recognition of experts may in some way be beneficial in order to identify new tools by which to assess the admissibility of expert testimony in court.

Over the last 20 years, many scholars have proposed what we can call the "proxies strategy". The core idea of this proposal is that we can identify a series of proxies (or "indicators") through which laypeople can assess the reliability of experts. Obviously these indicators must be available to laypeople and must not presuppose the ability to make a merit assessment.

The idea of using the proxies strategy in the debate on the role of judges as gatekeepers was put forward by Martini (2015). Since then, however, there seems to have been a lack of follow-up research. As we will see shortly, this is likely due to the fact that the application of this strategy in the legal context poses challenges that are not easily resolvable. However, given the centrality of the epistemological issues in

relation to the admission of expert witnesses in court, I believe that looking at the answers that social epistemology has provided to the problem of the recognition of experts can be useful in improving our current rules for the admission of expert testimony.

Following Grundmann (2025), we can distinguish between *positive* proxies and *negative* proxies. The latter are indicators that may lead one to suspect that the expert testimony may not be reliable. The former, on the contrary, can be taken as indicators of the "good quality" of a particular expert testimony.

Anderson (2011) sustains that we can distinguish between two kinds of negative factors: those that focus on the honesty of a particular testimony and those that focus on the epistemic irresponsibility.

According to her, factors that may indicate that an expert is not being honest include: *conflicts of interests*; *previous episodes of scientific dishonesty* (e.g., plagiarism, faking data, etc.); *claiming misleading information* (e.g., cherry picking data, the misleading use of statistics in order to manipulate the interpretation of results, etc.); or *misrepresentation of scientific opponents*.

To assess the epistemic irresponsibility of experts, Anderson proposes instead indicators such as *evasion of peer-review*; *dialogic irrationality* (e.g. continuing to support theories after they have been refuted and without responding to the objections); and *the promotion of crackpot theories*.[6]

Obviously, these criteria are not immune to criticism. Grundman (2025), for instance, points out that the absence of negative indicators does not guarantee that a putative expert is an actual expert. Consequently, to improve the likelihood that a proxies list effectively evaluates an expert's reliability, we need to supplement it with positive indicators.

There is no definitive and uncontroversial lists, but we can consider the following proxies to be among the most commonly cited:[7]

a) *Track Record*;

b) *Dialectical Competence*;

c) *Reputation*;

d) *Internal Consistency*;

e) *Discrimination Ability*;

f) *Pertinence*.

Let's take a brief look at each of these indicators. One factor that can indicate the reliability of a putative expert is his *track record* of predictions. Theoretically speaking, even a layman, who by definition has no special knowledge in a particular field,

[6] For a more detailed analysis see Anderson (2011, p.147-148).

[7] For alternative lists of indicators see Shanteau *et al.* (2002), Martini (2020) or Grundman (2025).

can judge whether an expert's predictions have come true. However, as Grundman (2025) pointed out, not all disciplines are predictive, and many experts do not make predictions. At the same time, it is far from uncontroversial to affirm that laymen are capable of judging whether a particular prediction has been confirmed.

Goldman (2001) defines *dialectical competence* as the ability of experts to deal with objections and questions. *Reputation* is instead made up of two distinct elements: experts' general credentials (e.g., having a Ph.D., being affiliated with prestigious institutions, being a university professor) and the consensus among peers around their theses. As mentioned above, consensus is a problematic factor. On the one hand, the fact that a particular theory enjoys a certain degree of acclaim in a particular community of experts does not mean that the theory is valid. On the other hand, in many disciplines, consensus is not easily achieved due to the presence of a contentious methodological status (consider, for instance, the case of psychology or economics).

Another positive indicator of expertise is the *internal consistency* of putative experts' judgments. Indeed, it would be completely anomalous, and we would be inclined to distrust someone who claims to be an expert if he or she made inconsistent judgements.

Discriminatory ability coincides instead with the expert's ability to discriminate between similar but not equivalent cases (see Hammond, 1996).

Finally, *pertinence* coincides with the expert's attitude towards making judgments within his field of competence (see Walton, 1989 or Reiss, 2008). However, as noted above, it is not easy for laypeople to recognise the cases of epistemic trespass, i.e. when an expert makes a judgement outside her area of expertise.

All these indicators, as we have seen, appears problematic when considered in isolation. Indeed, those who have spoken in favour of this solution stress the importance of assessing the reliability of an expert by using all the proxies. In this way, if a given expert satisfies all or almost all of them, he is likely to be a reliable expert. Unfortunately, the potential use of these proxies in the debate on the admissibility of expert testimony becomes more complex when we consider the specificity of the legal context. For example, the negative indicator of conflict of interest is problematic when we consider that all experts are hired by the parties and, therefore, have an interest in confirming one version rather than another. This depends on the substantial differences that exist between science and judicial practice. As Haack (2014) emphasised, an advocate's business, unlike the business of a genuine scientific inquirer, «is to make the strongest possible case that this—his side's—answer is the true one; so he will be most effective if he selects and emphasizes whatever evidence favours the proposition in question, and ignores or plays down the rest» (p. 33). But this kind of problem does not seem to characterise only the negative indicators: let's consider, for instance, the case of dialectical competence. In a context such as the legal one, a lawyer will have every interest in choosing an expert with good rhetorical skills. This proxy, which in ordinary contexts can be useful in the difficult task of distinguishing genuine experts from charlatans, can become a false clue when considering the par-

ticular type of skills and abilities by which experts are selected in the legal context. To these problems others of pratical nature are added: even if the strategy of proxies proves to be effective, how can we use it in concrete? Although some progress has been made, the literature about the practical application of the proxies strategy is still green. Guerrero (2016) argued in favour of the possibility to provide what he calls an "incentive alignment strategy", i.e. a strategy that aims to align the interests of experts and non-experts trough a reward-penalty system in order to provide reliable performance of experts. He concludes that it would be possible to design what he calls a "Database of Experts", i.e. a database in which all licensed experts are registered according to a classification criterion that follows the normal separation between areas of expertise. Theoretically speaking, it would be possible to include in this database not only all the information regarding qualifications, credentials and academic affiliations, but also whether the theses proposed by an expert are well regarded within the relevant expert community, as well as evidence of his epistemic integrity. In this way it would be possible for a layperson to evaluate an expert also on the basis of his veracity and epistemic integrity.

Obviously some issue arises. Firstly, as Guerrero himself admits, it remains unclear how we can establish the quality of expert performances without relying on others experts' judgment. Secondly, it is quite complicated to understand how an idea like this can become a reality. Normal social practices, with which applied epistemology is involved, are composed by more complex situations compared to those that we find in ideal contexts with which philosophy usually works.

The problem of expert recognition is certainly far from being solved. The proxies strategy is certainly one of the most interesting proposals that has been put forward in the last years. However, much work remains to be done. As we have seen, the problem becomes even more complex when we consider the particular context in which the problem of expert testimony is immersed. The adversarial system has very specific rules and values, and this makes even more arduous to resolve the epistemic issues surrounding the gatekeeping role of judges. The application to the legal context of the solutions proposed by epistemology to the problem of expert recognition seems to be indeed conspicuously hampered by the values and normal practices that are involved in our judicial systems.

Unfortunately, as I have argued above, the persistence of these epistemic questions about the gatekeeper role of judges significantly hampers the practical utilization of Laudan's meta-rule for evaluating evidence. Nevertheless, I believe that, in line with the central thesis of Laudan's legal epistemology, we can see how epistemology can produce an analytical effort in order to trace and diagnose some epistemological problems concerning the gatekeeping function of judges. As things stand, there is still a gap between the extant literature concerning the epistemic problem of recognising experts and that addressing the admissibility of expert witnesses in court. A definitive solution to the problem of expert testimony will probably never be found. However, an improvement of the actual situation is only possible through a joint ef-

fort of different disciplines, approaching the problem from different angles. Indeed, a productive way to apply the conceptual resources of epistemology would be to use them not only to identify the issues that shape certain social practices (including the challenge of expert testimony) but also to suggest potential solutions for improving the current state of affairs. This mutual interaction between epistemology and social practice would be of considerable benefit to both. The latter would gain significantly from the analytical attitude and conceptual tools that have long been central to philosophy. At the same time, when faced with everyday problems, epistemology—and philosophy more broadly—can carve out a new role in public discourse, providing both critical insights and normative guidance.

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