

# Proof Beyond Any Reasonable Doubt? Or Beyond Some Reasonable Doubt?

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## PROLOGUE

Susan Haack's work does a marvelous job of restoring the humanity of scientists by arguing that their methods and thought processes are the same as those used by careful thinkers in any discipline. She makes her case in a way that will leave no reader feeling left behind in the discussions about the use of evidence.

In recent work, she has sought to defend science against a variety of charges, launched by proponents of extreme positions. On the one hand, she rejects what she calls 'scientism', the exaggerated showing of deference towards science and the acceptance of any claim made by science as being authoritative, as if scientists are epistemologically privileged. On the other hand, she rejects the many current cynical postmodern critics of science who have said that scientists' stated concerns for honest inquiry, respect for evidence and a search for truth are illusions being used as a cover for their other agenda relating to power, politics or rhetoric.

Indeed, I have relied on Haack's work in my claim that a science of evidence excludes no one interested in honest inquiry, a respect for evidence and a search for truth. As Haack (2003, 23) says:

The core standards of good evidence and well-conducted inquiry are not internal to the sciences, but common to empirical inquiry of every kind... respect for evidence, care in weighing it, and persistence in seeking it out, so far from being exclusively scientific desiderata, are the standards by which we judge all inquirers, detectives, historians, investigative journalists, etc., as well as scientists. In short, the sciences are not epistemologically privileged.

In my account of the science of evidence as a study of the properties, uses, discovery and marshaling of evidence, I will claim that it involves everyone having the characteristics Susan Haack has just described (Schum 2009, 204-205).

My title is related to the notion of a *benefit of the doubt*, which stands in opposition to *good faith* (in the sense of human "credulity"), and indicates that if *any reasonable doubt* is introduced in judicial proceedings it may be used as a favoring (f) or disfavoring (d) factor in relation to the claims or hypothesis that the parties argue in those judicial proceedings.

A standard of proof that required judges to exclude each and every (possible) reasonable doubt would be useless in courts of law. The employment of such a standard of proof would require the use of a “conceptual microscope” that allowed judges to have a “magnifying lens” in relation to any reasonable doubt(s) that may be observed and resolved in the adjudicative fact-finding process, specifically in the stages of the examination of evidence and the assessment of proof. But the focus of judges’ magnifying lenses should not be directed towards *all* reasonable doubts, but only those that can be observed in relation to the structural issues or properties of evidence (E\*): credibility, relevance and weight or evidential force.

The approach to standards of proof just indicated must allow that, in legal proceedings and in daily life, they can be understood in a way that conceives the notion of being *probable* from the perspective of inductive logic and, and with regard to the structural issues or properties of evidence (credibility, relevance and *weight* or *evidential force*) (Tecuci, Schum, Marcu, & Boicu 2016, 62-68). This approach resonates with Haack’s epistemology, with its focus on *degrees of warrant* (Haack 2014, 47), and its integration of considerations drawn from philosophy, psychology and law.

In the first section of this paper, I will argue that it is in the stage of the evidentiary activity called the *examination of evidence* when the judge manages to establish the standard of proof required by the Federal Rules of Evidence (Vargas 2019, 19-20). Next, I will argue that it is in the second stage of the evidentiary activity called the *assessment of proof* when the judge, after establishing the *credibility* of the evidence (Schum 2001, 92-108), or the *quality* of the evidence (Haack 2014, 53), can make a connection (relevance of evidence), in terms of *inductive* and *diffuse* probabilities or *degrees of warrant* (Haack 2014, 47), between the said evidence and the claims or hypotheses of the parties, in accordance to the provisions of the FRE-401.<sup>1</sup>

Finally, I will show that, in this same second stage, the judge may assign a *weight* or *evidential force* to *individual* and *combined* evidence (body of evidence items) through the assistance of 1) the combinations of evidence (corroboration, convergence, contradiction, conflict and evidentiary redundancy, 2) the methods of support (+) or reduction (-) of the value of evidence, 3) the properly supported generalizations and 4) the ancillary evidence (Schum 2001, 109-126).

## 1. FIRST ROUND OF DOUBTS: THE EXAMINATION OF EVIDENCE

Doubts that must be resolved in the stage of examination of evidence in the judicial proceedings are related to its credibility. These doubts are translated into questions that can be asked in relation to the attributes of the credibility of evidence (E\*), which, for the testimonial evidence, are veracity, objectivity and observational sensitivity. These questions, regarding the attributes of the credibility of evidence (E\*), constitute ancillary evidence (A\*) used to support (+) or challenge (-) the credibility of evidence (E\*). For the tangible evidence, such as the documentary evidence or demonstrative evidence, those attributes are authenticity, reliability and accuracy (Schum 2001, 92-108).

A first question, which allows the judge to settle this first doubt, is related to the credibility of evidence (E\*) that a party brings to the judicial proceedings (Tecuci, Schum, Marcu, & Boicu 2016, 68):

How likely is it that what is stated in evidence (E\*) is true, i.e. is it credible?

or

How likely is it that E\* is true?

or

How likely is it that the event E reported in E\* occurred?

This first question allows the judge to determine whether the evidence presented makes controversial facts credible to the degree required for the judicial proceedings at hand; in Haack’s epistemological vocabulary, the judge is to determine *whether the evidence presented warrants to the required degree the proposition(s) at issue* (Haack 2014, 57).<sup>2</sup>

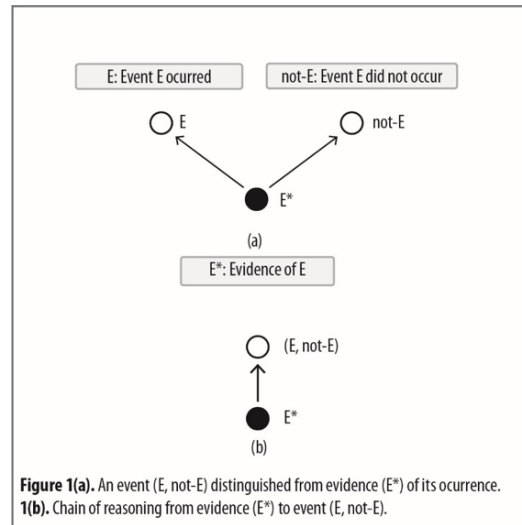


Figure 1 illustrates what is related to this first question, referring to the credibility of evidence ( $E^*$ ). This first doubt concerns to how seriously the judge should consider evidence ( $E^*$ ) that is offered or produced in the examination stage. It is healthy to consider this first “doubt”. It is reasonable.

A judge may follow one or other of two generalizations in relation to the credibility of testimonial evidence ( $E^*_t$ ):

*If a person affirms a fact, then, generally, this fact has occurred (“good faith”).*

Such a judge would be very gullible:

*If a person affirms a fact, then, in general, he believes it (veracity), he has perceived it through his senses (objectivity), and he has correctly perceived it (observational sensitivity).*

Such a judge would not be behaving so credulously, but would be instead “atomizing” good faith attributes of credibility for testimonial evidence ( $E^*_t$ ) – (Schum 2001, 109). Attributes of credibility pertinent to testimonial evidence are: veracity, objectivity and observational sensitivity.

A person’s veracity is associated with his honesty; that is, with his believing what he claims to believe. In empirical matters, objectivity is related to whether or not what the person affirmed has been perceived through his senses. Observational sensitivity is related to the quality of the perception in question—conditions of mode, time and place and the way in which the person got knowledge of the facts (Schum 2001, 110-111).

Figures 2a, 2b, 3a, 3b, 4a and 4b illustrate “good faith” in relation to the credibility of testimonial evidence ( $E^*_t$ ) and how it can be decomposed, atomized or questioned as such, considering these three attributes of credibility of testimonial evidence ( $E^*_t$ ): veracity, objectivity and observational sensitivity (Vargas 2019, 35-41).

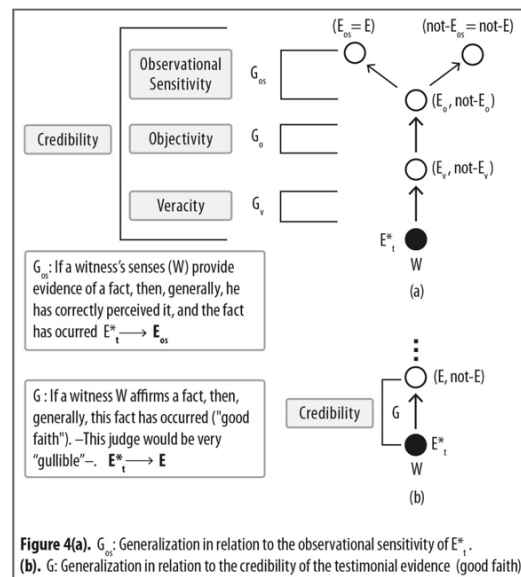
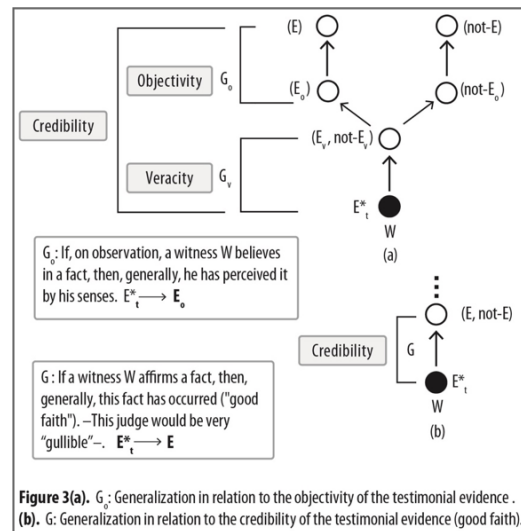
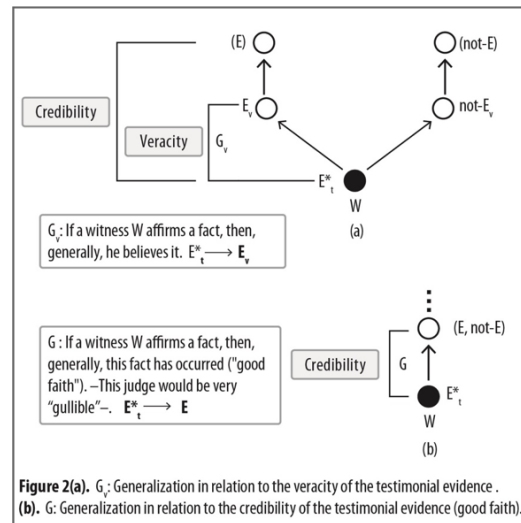
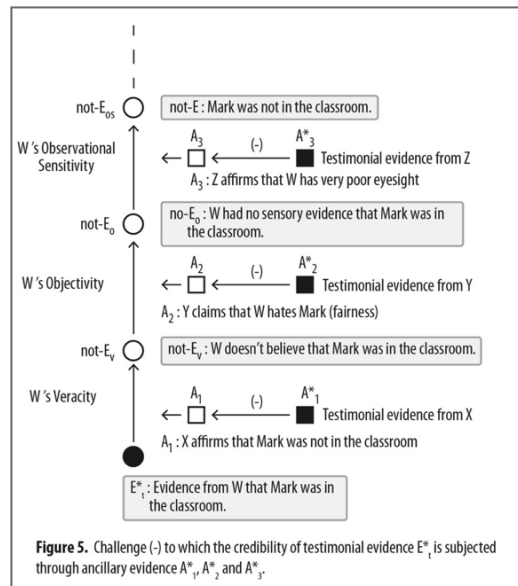


Figure 5 illustrates the increase (+) or the reduction (-) in support which can raise or lower the credibility of testimonial evidence ( $E^*_t$ ) through the use of ancillary evidence ( $A^*$ ).

Note how these pieces of ancillary evidence ( $A^*_1$ ,  $A^*_2$ , and  $A^*_3$ ) act to reduce (-) the attributes of veracity, objectivity, and observational sensitivity of testimonial evidence ( $E^*_t$ ) (Schum 2001, 112-114, 153-160).



Each question asked in the examination constitutes ancillary evidence ( $A^*_1$ ,  $A^*_2$ , and  $A^*_3$ ) that allows judges to establish the *credibility* (Schum, 2001, 92-108) or *quality* (Haack 2014, 53) of testimonial evidence ( $E^*_t$ ).

The questions are *tests* for each of the attributes of credibility (veracity, objectivity and observational sensitivity) of the testimonial evidence ( $E^*_t$ ); and each one constitutes a *reasonable doubt* whose answer, if credible, allows the judge to have a better knowledge of the controversial facts in the judicial proceedings.

The answers to these questions and doubts allow the judge to make a decision that can be considered as "reasonable," "best possible" or "best adjusted to justice."

## 2. SECOND ROUND OF DOUBTS: THE ASSESSMENT OF PROOF

The doubts that must be resolved at the stage of the *assessment* of proof are related to the *relevance* of evidence. This concept is closely related to the burden of proof, which the parties bear as their responsibility and it is as well the legal basis for the rule of judgment used by the judge in his decision, which is only probable (Vargas 2019, 89-96).

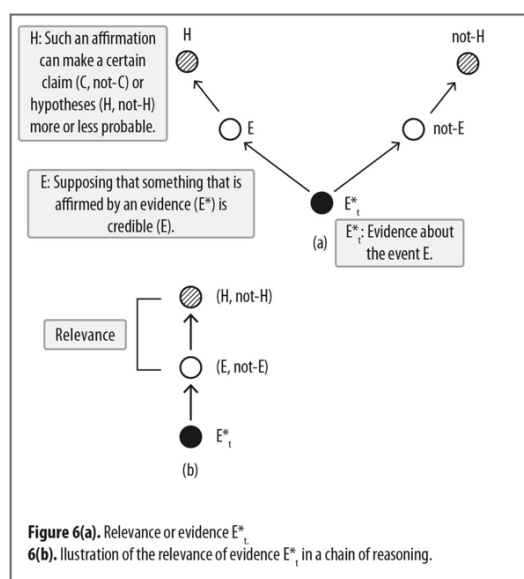
A second question that allows the judge to settle a subsequent doubt is related to the relevance of evidence ( $E^*_t$ ) that a party brings to the judicial proceedings (Tecuci, Schum, et al. 2016, 68):

How likely is the hypothesis (H) of the party that produces the evidence ( $E^*_t$ ) to the judicial proceedings, assuming that what is stated by the evidence ( $E^*_t$ ) is true (E)?

or

Assuming that E is true, how likely is it that H is true?

Figure 6 illustrates what is related to this second level of doubt, in reference to the relevance of evidence ( $E^*_t$ ). This second doubt concerns the judge's belief about how evidence ( $E^*_t$ ) bears upon the possible conclusions he entertains. It is healthy to consider this second variety of doubt. It is reasonable.



### 3. THIRD ROUND OF DOUBTS: THE EVIDENTIAL FORCE OF EVIDENCE

A third question, based on the previous two, allows the judge to settle another range of doubts, related to the *weight* or *evidential force* of the evidence ( $E_t^*$ ) (Tecuci, Schum, et al. 2016, 68):

How likely is it the hypothesis (H) of the party that brings such evidence ( $E_t^*$ ) to the judicial proceedings is true, based only on the truth of ( $E_t^*$ )?

or

How likely is it that H is true, given only  $E_t^*$ ?

*Evidential weight* or *force*, like weight or force as vector quantities in physics, has a *direction* and a *measure* (*magnitude*). Direction illustrates whether an evidence ( $E_t^*$ ) favors (f) or disfavors (d) a certain claim or hypothesis (H, not-H). Magnitude is a probability that is assigned to the *conjunction* of *credibility* and *relevance*. This magnitude is gradational, as indicated by *verbal expressions* of inductive probability and diffuse probabilities (Tecuci, Schum, et al. 2016, 69), according to, for example, the ordering below:

**No support < Likely < Very likely < Almost certain < Certain**

This approach to the weighing of evidence combines elements of Baconian<sup>3</sup> (Cohen 1977, 229-244; Eells 1991, 115-131) and fuzzy probabilities (Tecuci, Schum, et al. 2016, 69).

A judge has to assess a claim or hypothesis (H) based only on  $E_t^*$ ; and for the first question above (the credibility question) “certain” means that we are sure that the event E reported in  $E_t^*$  did indeed happen; and “no support” means that  $E_t^*$  provides no reason for us to believe that the event E reported in  $E_t^*$  did happen.

For the second question above (relevance question), “no support” is the probability assigned when  $E_t^*$  is not relevant to H, and “No support” is the answer when  $E_t^*$  tends to disfavor H.

For the third question above (the question of weight), the answer is the *minimum* of the relevance and credibility answers. To believe that H is true, based only on  $E_t^*$ ,  $E_t^*$  should be both relevant to H (favoring or disfavoring) and credible (Tecuci, Schum, et al. 2016, 69).

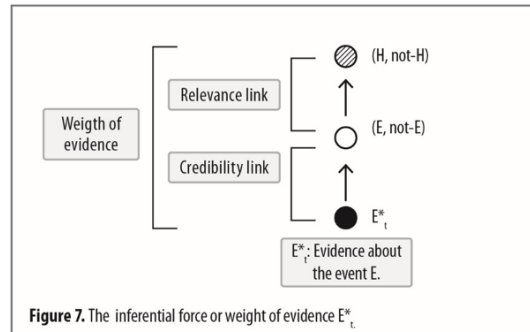
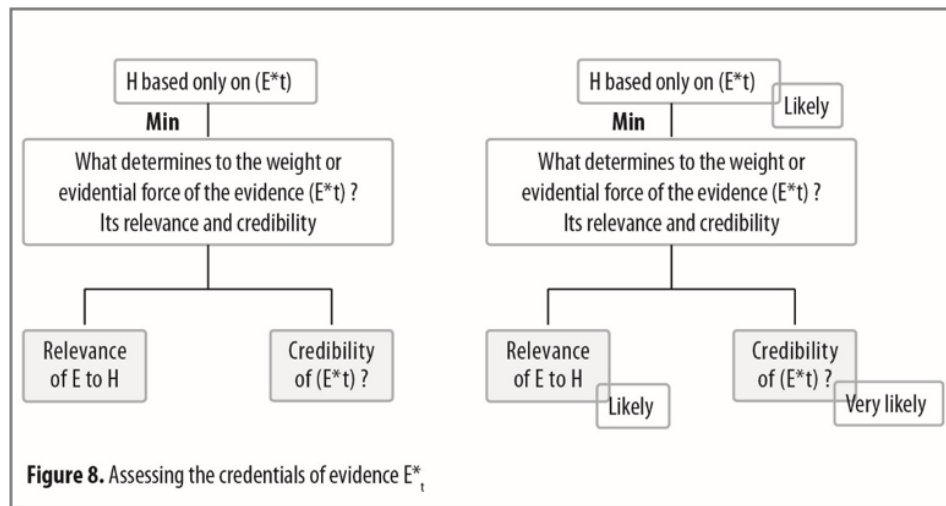
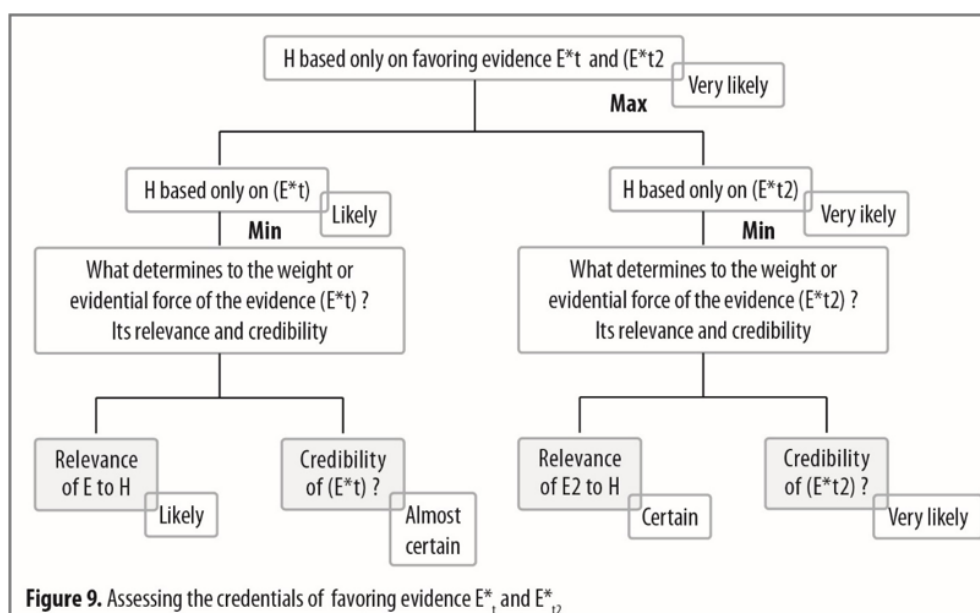


Figure 8 illustrates what is related to this third doubt, in reference to the *weight* or *evidential force* of the evidence ( $E^*$ ) (Tecuci, Schum, et al. 2016, 70-73).



The judge who assesses a hypothesis (H) has several items of evidence, not just one. Let's assume that the judge has a second piece of testimonial evidence ( $E^*_{t2}$ ) that points to a different fact  $E_2$  and favors H. So, if the inferential force of  $E^*_{t2}$  is "very likely", determined to be by the same procedure discussed for  $E^*_t$ , then the judge determines the inferential force of both testimonial evidences  $E^*_t$  and  $E^*_{t2}$  on the hypothesis H as the *maximum*<sup>4</sup> of their inferential force ("very likely"). It is enough to have a very relevant and credible item of evidence to convince the judge that the hypothesis H is true (Tecuci, Schum, et al. 2016, 70-73).

Figure 9 illustrates what is related to this third level of doubt, in reference to the *weight* or *evidential force* of both testimonial favoring evidence  $E^*_t$  and  $E^*_{t2}$  (Tecuci, Schum, et al. 2016, 70-73).



These three questions are raised in an effort to support the thesis that *not everything* is necessary in the decision-making process. It is not necessary to have a knowledge *beyond reasonable doubt* to make a decision. Only *a few doubts* govern our knowledge in the decision-making process: “Tell me with what standard of proof you are going to measure me, and I will tell you how I will behave in the judicial proceedings. If you measure me with the wrong standard, don’t complain about my behavior.” A judge of the year 2020 would measure with *verbal expressions*, typical of inductive probability (Cohen 1977, 217-244) and diffuse probabilities (Schum 2001, 243-266; Tecuci, Schum, et al. 2016, 69), rather than with numbers, typical of mathematical logic (Haack 2014, 58).

“Tell me how you are going to put your questions to me, and I will tell you how I am going to answer you. If you ask me about *everything*, don’t complain about the evasiveness of my answers. I do not know *all* the answers to *all* the questions you are imagining, especially with the ‘vague and ambiguous’ language that you use when you ask such questions in the judicial proceedings.” A judge in 2020 would not ask about *everything*. This judge would recognize that only *a few* questions would *bring him closer* to a more appropriate decision, in terms of inductive and fuzzy probabilities; that is, a probable decision: something *more reasonable* within the judicial proceedings.

Placing a magnifying lens in the wrong place (or *beyond reasonable doubt*) may not allow focusing easily on what you want to observe or what you want to clear; that is, the *doubt*, which does not allow you to make a decision in any way. To the extent that a magnifying lens is placed closer to an appropriate distance, or *beyond some doubt(s)*, it will focus on what you want to observe; that is, on *any doubt(s)* that allow(s) a decision somehow to be made, a decision which will be probable only.<sup>5</sup>



## NOTES

1. Rule 401—Test for Relevant Evidence. Evidence is relevant if: (a) it has any tendency to make a fact more or less probable than it would be without the evidence; and (b) the fact is of consequence in determining the action.
2. Haack notes that, as Bertrand Russell (1948) had pointed out, it is important to begin with how warranted a claim is for a person at a time, and cites.
3. In the Baconian view of probability proposed by L. J. Cohen, the probability of a hypothesis depends on 1) how much relevant evidence the subject (in this case the judge) has; 2) how much believable evidence he has; and 3) how complete the coverage of existing evidence on matters being relevant in the analysis made by the subject/judge is. In this vision, the probability of a conjunction is never less than the smallest Baconian probability of either of its conjuncts. Baconian conjunction can be referred as a minimization rule (Min) (Cohen 1977, 217-244).
4. In the Baconian system proposed by L. J. Cohen (Cohen, 1977), the probability of a disjunction is never less than the greatest Baconian probability of either of its disjuncts. Baconian disjunction can be referred as a maximization rule (Max) (Cohen, 1977, 217-244).
5. I want to express my thanks to Mark Migotti for all his helpful advice on this text. Any imperfections that remain are the result of my ignorance and lack of understanding.

## REFERENCES

- Cohen, L. J. 1977. *The Probable and the Provable*. Oxford. Clarendon Press.
- Eells, E. 1991. *Probability and Rationality. Studies on L. Jonathan Cohen's philosophy of science. (Poznan Studies in the Philosophy of the Sciences and the Humanities)*: Rodopi Bv Editions.
- Haack, S. 2003. *Defending Science within Reason : Between Scientism and Cynicism*. Amherst: Prometheus Books.
- \_\_\_\_\_. 2004. Epistemology Legalized: or, Truth, Justice, and the American Way. *American Journal of Jurisprudence* 49: 43-61.
- \_\_\_\_\_. 2014. Legal Probabilism. In: *Evidence Matters: Science, Proof, and Truth in the Law* (47-77). Cambridge: Cambridge University Press.
- Russell, B. 1948. *Human Knowledge: Its Scope and Limits*. New York: Simon & Schuster.
- Schum, D. A. 2001. *The Evidential Foundations of Probabilistic Reasoning*: Evaston: Northwestern University Press.
- \_\_\_\_\_. 2009. A Science of Evidence: Contributions from Law and Probability. *Law, Probability & Risk*, Vol. 8, Issue 3: 197-231.
- Tecuci, G., Schum, D. A., Marcu, D., & Boicu, M. 2016. *Intelligence Analysis as Discovery of Evidence, Hypotheses, and Arguments: Connecting the Dots*. Cambridge: Cambridge University Press.
- Vargas, O. 2019. *El razonamiento inductivo en la valoración de la prueba judicial*. Salamanca: Ediciones Universidad de Salamanca.