Vanderbilt Law Review

Volume 5
Issue 3 *Issue 3 - April 1952*

Article 5

4-1952

Real Proof I

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REAL PROOF: I

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I. INTRODUCTION[1]

§ 1. *The Aspects of The Trial of An Issue of Fact*

The trial of an issue of fact is an epistemic, a logical, and a legal affair.[2] In its epistemic aspect it can be viewed as a process of learning: By means of the trial the jury acquires the knowledge which it must have in order to decide the issue.[3] The analysis of this aspect of a trial is primarily concerned with the different kinds of knowledge and with the various ways in which knowledge is obtained.[4] In its logical aspect the trial of an issue of fact can be viewed as a process of teaching: By their

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1. In spite of its own intrinsic importance and of its great significance for testimonial proof, the commentators upon the law of evidence have greatly neglected real proof. For example, of the ten volumes which comprise the third edition (1940) of *Wigmore on Evidence,* nine are textual. These nine contain 93 chapters and 6,601 pages of which a single chapter (c. 39) of 62½ pages is devoted to what the author chooses to call Autoptic Proference (Real Evidence), and 29 of these pages are given to "views." For discussions of this type of judicial proof, see MICHAEL & ADLER, THE NATURE OF JUDICIAL PROOF c. 8 (1931); Michael & Adler, *The Trial of An Issue of Fact,* 34 COL. L. REV. 1224, 1262-70 1293-93, 1462, 1466-67 (1934); GULSON, THE PHILOSOPHY OF PROOF 194-200, 281-91 (1905); 5 CHAMBERLAYNE, EVIDENCE c. 40 (1916); Phipson, *"Real" Evidence,* 29 YALE L. J. 705 (1920); 4 WIGMORE, EVIDENCE c. 39 (3d ed. 1940); WIGMORE, THE SCIENCE OF JUDICIAL PROOF §§ 5, 324-28 (3d ed. 1942); PHIPSON, EVIDENCE 2, 4-6, 44-46 (8th ed. 1942); Gex, *Real Evidence in Mississippi,* 17 MISS. L.J. 180 (1945); Garment, *Real Evidence: Use and Abuse,* 14 BROOKLYN L. REV. 261 (1948); Nokes, *Real Evidence,* 65 L.Q. REV. 57 (1949). We shall refer to Wigmore's Treatise and that of Chamberlayne by the names of the authors.

For an excellent study of the nature of direct or perceptual knowledge, see H. H. PRICE, PERCEPTION (1933).

2. In *The Trial of An Issue of Fact,* 34 COL. L. REV. 1224 & 1462 (1934), we attempted to summarize our analyses of the epistemic, logical and legal aspects of a trial. That article was intended as the introduction to a series of more detailed articles, of which this article is the first. In this one we shall have to make a number of analytical points which cannot be fully explained without undue repetition of parts of our prior article. The reader must therefore be referred to it for the understanding of several of these points which are basic. We shall use the symbol *TIF* to make such references.

3. Throughout this essay we shall assume that the issues of fact of which we speak are being tried by a tribunal consisting of a judge and a jury. But the nature of real proof is the same whether it occurs during the trial of a material issue by such a tribunal or by a tribunal consisting only of a judge. Indeed, a trial by a judge without a jury is governed by the same principles of logic and, in the main, by the same rules of procedural law as a trial by jury. We shall use the word "tribunal" when we wish to refer to both judge and jury or, indifferently, to either judge or jury. Whenever we use the word "judge" we shall mean the trial judge.

4. In modern times the analysis of the kinds of knowledge and of the processes of cognition is called epistemology. This indicates the derivation of the word "epistemic." In an earlier tradition such considerations would have been regarded as falling in part within the domain of metaphysics in so far as the kinds of knowledge are correlative to the kinds of things known, and in part within the domain of psychology in so far as knowledge results from operations of the mind.

proof and disproof[5] of the contradictory propositions of which the issue is constituted,[6] the litigants impart to the jury the knowledge which it needs in order to resolve the issue. The analysis of this aspect of a trial distinguishes the kinds of propositions which are employed in the proof and disproof of material propositions,[7] formulates the conditions of the assertion of propositions as true or false or as probable to some degree, and states the rules of contradiction and of inference which are the criteria of the formal validity of the probative processes which litigants undertake. In its legal aspect a trial can be viewed as a judicially administered proceeding designed to resolve material issues,[8] but serving other ends as well. The rules of procedural law which govern the judicial administration of a trial, having these various ends in view, determine how a jury may acquire the knowledge it needs and what litigants may do in their efforts at proof and disproof. The analysis of this aspect of a trial first recognizes the different ends which the procedural law serves, among which are correct, or better rather than worse, answers to material issues and a just disposition of controversies; it then examines the procedural rules as means to

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5. The reader must recognize the distinction between the process of proof and the process of persuasion. He will find this distinction made and explained in *TIF*, 1237-40. Throughout the course of this article we shall be concerned exclusively with the process of proof.

6. A question can be perfect or imperfect. A perfect question is one to which two but only two answers are possible; an imperfect question is one to which more than two answers are possible. The two possible anwers to a perfect theoretical question, that is, a question which can be answered by knowledge alone, are contradictory propositions. They are contradictory in the sense that if one is true the other must be false; and one must be true; it must be true in the sense that what it states to be the case is actually the case. If we let *P* represent any proposition, it is obvious that *P* and *not-P* are related as contradictory propositions. To deny *P* is equivalent to affirming *not-P*. Consequently, if one of the parties to a legal controversy alleges and the other denies *P*, the issue thus created is of the form *"P* or *not-P."* See *TIF*, pp. 1248-51.

7. A proposition is material to a legal controversy if the matter of fact to which it refers is rendered significant for that controversy by the rule of substantive law by which the controversy is regulated. [For a more detailed explanation of the conception of materiality, see Michael, *The Basic Rules of Pleading*, 5 RECORD 1, 10-11 (Ass'n of the Bar of N. Y. City 1950), and *TIF*, 1251-53; and for the distinction between materiality and relevancy and that between material propositions and evidential propositions, see *TIF*, 1277-78.] What we call material propositions are traditionally referred to as material or principal or ultimate or operative facts (for a criticism of this verbal usage see *TIF*, 1252); and what we call evidential propositions are traditionally referred to as probative or evidential facts or, more simply, as evidence. (For the distinction between fact and proposition, see *TIF*, 1248-50). The distinction between materiality, which is a legal conception, and relevancy, which is a logical conception, is indispensable to an understanding of judicial proof. It is obscured by the fact that in legal usage the word "materiality" is ambiguous. It is sometimes used with the meaning which we assign to it, but not always Thus, unless the word "immaterial" as used in the objection to "evidence" as "irrelevant, immaterial and incompetent" is redundant, it means either that the evidence is not relevant to a legally significant proposition or that, although it is relevant to such a proposition, it is of too little probative force to be admissible. (See 1 CHAMBERLAYNE § 16). The distinction between materiality and relevancy is also obscured by the attempted distinction between "logical relevancy" and "legal relevancy."

8. By a material issue we mean an issue constituted of a material proposition and its contradictory. See note 6, *supra*.

these ends.[9] This leads to a clearer understanding of procedural rules in the light of the ends which they serve and of the processes of proof and persuasion which they govern, and also to their criticism in the light of rational criteria provided by the epistemic and logical analyses of these processes.

It is clear at once that these three aspects of a trial of an issue of fact are integrally related and, hence, that they cannot be analyzed in isolation from one another. The process by which litigants prove and disprove material propositions is the very process by which a jury acquires knowledge about the matters of fact to which these propositions relate. The process which, from the point of view of jurors, is a passive affair of learning or inference and, from the point of view of litigants, an active affair of teaching or proof, is a single process.[10] Moreover, the kinds of knowledge imparted to a jury are perfectly correlated with the kinds of propositions which are employed probatively; and the consideration of the manner in which a jury obtains this knowledge parallels the consideration of the conditions underlying the assertion of propositions as the result of their proof. Since it is this process, at once an affair of learning and an affair of proof, which the rules of procedural law govern, the rules, and especially those of the law of evidence, must take account of the nature and kinds of knowledge and of the elements of proof. However, the legal aspect of a trial is not strictly co-ordinate with its epistemic and logical aspects. To the extent that the procedural rules aim to direct the administration of a trial so that correct or better answers to material issues will be achieved, epistemic considerations and rules of logic provide standards for criticizing them. The epistemic and logical analyses enable us to say what the law should be, and, by the norms which they provide, to measure the goodness of the law as it is. On the other hand, the legal aspect is in one sense primary: The rules of procedural law which direct the judicial administration of a trial grow out of its nature as a legal proceeding; judicial proof is a special case of proof; and the process of learning which goes on in court has limitations imposed upon it just because it goes on in court and involves a judge and jury, lawyers, litigants and witnesses. The logical and epistemic analyses of a trial must therefore be made with awareness of the kind of affair the trial of an issue of fact actually is.

9. If the rule of substantive law which regulates a controversy is a just rule, and if correct, or better rather than worse, answers are given to the material issues which the controversy involves, the controversy will be justly resolved. This indicates the relation between truth and justice. See *TIF*, 1228-33.

10. We shall use the word "inference" to refer to the intellectual operations performed by the jury in the course of its learning. Inference and proof are thus correlative aspects of the same process. See *TIF*, 1270 n.69.

We shall be primarily concerned in this essay with only one kind of proof that can occur in the trial of an issue of fact, the kind which we shall call real proof to distinguish it from testimonial and circumstantial proof, and which always occurs whenever what is traditionally known as "real evidence" is employed.[11] But real proof cannot be intelligibly analyzed in isolation. Testimonial and circumstantial proof are often collateral to real proof; and the step of real proof is usually a step in a line of proof in which steps of testimonial and circumstantial proof necessarily precede and follow it.[12] The legal principles which govern real proof, which formulate the conditions of the admissibility of "real evidence," must therefore be considered in the light not only of epistemic and logical analyses but also of an awareness of the place of real proof in the total probative process. Rules which are applicable to testimonial or circumstantial proof are often necessarily involved in the determination of the admissibility of real proof.[13] Moreover, it will become apparent as we proceed that there is a close analogy between some of the problems of real proof and some of the problems of testimonial proof,[14] and that in testimonial and in circumstantial proof, as well as in real proof, the problem of judicial notice, which is the question what propositions which are capable of being proved may be assumed and employed probatively without being proved, is a crucial problem.[15] But it is obviously impossible to achieve such an integration of related problems within the scope of a single article. For that reason we must ask the reader to hold before him the picture of a trial as a whole and in all of its aspects in order to see our discussion of real proof in perspective.[16] Wherever it is possible to do so by brief reference, we shall connect our analysis of real proof with the larger analysis, point to similar problems in testimonial and

11. It has also been called material evidence and demonstrative evidence. "A preferable term," Wigmore has said, "is Autoptic Proference; this avoids the fallacy of attributing an evidential quality to that which is in fact nothing more nor less than the thing itself." 1 WIGMORE § 24. We are aware that the phrase "real proof" does not occur in the traditional language of the courts and commentators; this is partly due, as the quotation from Wigmore indicates, to their failure to recognize and understand the probative use of "real evidence." That the probative use of what they call by that name always involves an inference and, usually the sort of inference which we call real proof, will subsequently be shown. See p. 358 *infra*.

12. For the distinction between a step and a line of proof, see p. 358, *infra*.

13. That is to say that the admissibility of a step of real proof may depend upon the admissibility of one or more steps of testimonial or of circumstantial proof. An offered step of real proof may be in itself unobjectionable but nevertheless inadmissible because one or more steps of testimonial or circumstantial proof, the accomplishment of which is necessary to satisfy what we shall call the logical condition of the admissibility of the step of real proof, are inadmissible.

14. At this point we have especially in mind the cognitive conditions of the competency of a person to be a witness, the cognitive elements of credibility, and the rules regulating the probative use of the "opinions" of witnesses, particularly those of inexpert witnesses.

15. As pointed out in *TIF* 1265 n.58, the act of judicially noticing a proposition is a special case of the act of assuming a proposition, that is, of asserting without proof propositions which can be proved.

16. The reader is referred to *TIF* for this picture in its entirety.

circumstantial proof, and suggest consistent solutions of them. And here, as a necessary introduction to the problems of real proof, we must briefly summarize the basic points in our analysis of the epistemic, logical and legal aspects of a trial.

§ 2. *The Indispensability of Evidence*

Four kinds of knowledge can be and almost always are involved in a trial: (1) Knowledge which the jury has independently of the evidence and proofs of the litigants, most of which it will possess prior to the trial because in the locality of the trial such knowledge is common to ordinary men of ordinary experience, but some of which it may acquire during the trial;[17] (2) knowledge which the jury acquires by means of its senses in the observation of things[18] and events which the litigants are permitted to introduce as evidence; (3) knowledge which the jury acquires by means of its reason in making the inferences involved in the steps and lines of proof which the litigants are permitted to accomplish; and (4) knowledge which witnesses are permitted to report or which is contained in documents which the litigants are permitted to exhibit to the jury.[19]

Without knowledge of the third sort, that obtained inferentially during a trial by its rational powers, a jury could never decide a material issue; if it could, a trial need not and would not involve proof. But the mind can perform inferences only if it has or is given some knowledge with which to begin the inferential process; it is clearly impossible for all knowledge to be the result of inference. A jury, therefore, can gain knowledge inferentially only by the operations of its reason upon knowledge which it has or obtains independently of the proofs of the litigants; and such knowledge must be knowledge of either the first or the second sort. It must be either knowledge of which a jury may take judicial notice or knowledge which results from its observation of evidence, that is, of things and events which with judicial permission are exhibited to its senses during the trial. Whenever the knowledge which a jury may judicially notice is sufficient, as it rarely is, to enable it to resolve a material issue, it is obviously unnecessary to try that issue, that is, to test it by the proof and disproof of the contradictory propositions of which it is constituted.[20] The trial of a material

17. The reference here is to knowledge which, in traditional language, may be judicially noticed. For some aspects of the judicial notice of propositions, see *TIF* 1263 n.57, 1264-65.

18. By a "thing" we shall always mean a physical thing, that is, a thing composite of form and matter. An "event" always involves such a thing; it may be defined as a physical thing in motion.

19. This fourth kind of knowledge, the knowledge of witnesses and of the authors of documents, is not co-ordinate with the first three kinds, which consist of knowledge which the jury somehow has or acquires. See *TIF*, 1267 n.64.

20. Ordinarily, if one of the litigants alleges and the other traverses a material proposition, a material issue, consisting of the proposition alleged and its contradictory,

issue is necessary only when in order to decide it the jury needs other knowledge than that which it may judicially notice; and such knowledge it is permitted to obtain only from the observation of evidence. It follows that a trial of a material issue necessarily involves the introduction of evidence.

The point can be made differently. Implicit in the foregoing discussion are two further distinctions between kinds of knowledge. (1) Knowledge is either direct or indirect according as it is obtained by man's sensitive powers in perception or by man's rational powers in inference.[21] This distinction holds equally for the knowledge of jurors and for that of witnesses.[22] A particular item of the knowledge of either a juror or a witness may be direct or indirect, may have been acquired by perception or by inference.[23] (2) Knowledge of things and events is either particularized

is created; and this issue can be resolved only by trying it. But if the tribunal will judicially notice either the proposition which is alleged or its contradictory, no issue is created or, at least, none the resolution of which requires a trial. A recent case which makes the point is Virginian Ry. v. Armentrout, 158 F.2d 358 (4th Cir. 1946), in which the court held that the judge erred in submitting to the jury the issue whether or not the plaintiff, a child of thirteen months, "was of sufficient mental capacity to understand the meaning of such signals [ringing a bell and blowing a whistle] so as to get off the track if they had been given." The court said: It is "common knowledge that a baby of 13 months is not equipped with reasoning powers." *Id.* at 360.

21. We shall sometimes speak of direct knowledge as perceptual or observational, and of indirect knowledge as inferential.

22. This suggests in part the importance for testimonial proof of an analysis of real proof. When discussing "real evidence" the commentators and the courts seem to recognize that there is an essential distinction between perceptual and inferential knowledge. For example, discussing "autoptic proference," Wigmore says (1 WIGMORE § 24): "No logical process is employed; only an act of sensible apprehension occurs,—apprehension of the existence or non-existence of the thing as alleged." And he adds (4 WIGMORE § 1150): "This source [of belief] differs from the other two [testimonial and circumstantial evidence] in omitting any step of conscious inference or reasoning, and in proceeding by direct self-perception or autopsy." So, too, Chamberlayne calls "real evidence" evidence by perception, knowledge acquired through the use of the faculties of sense perception. 1 (CHAMBERLAYNE §§ 27-31.) But, curiously enough, when discussing the administration of the opinion rule, they deny that there is any essential distinction between perceptual and inferential knowledge or, to put it differently, that persons other than jurors can acquire perceptual knowledge; *their* "perceptual knowledge" is always a mixture of direct and indirect knowledge. Thus Wigmore (7 WIGMORE § 1919): "[N]o such distinction [as that between inference and 'original perception'] can scientifically [*sic*] be made, since the processes of knowledge and the sources of illusion are the same for both." And so Professor McCormick: "There is no conceivable [*sic*] statement [of a witness], however specific, detailed and 'factual' that is not in some measure the product of inference and reflection as well as observation and memory." [McCormick, *The Opinion Rule and Expert Testimony*, 23 TEXAS L. REV. 109, 111 (1945). See also THAYER, PRELIMINARY TREATISE ON EVIDENCE 524 (1898); MAGUIRE, EVIDENCE—COMMON SENSE AND COMMON LAW 24 (1947).] And so able and distinguished a judge as Learned Hand and so able and distinguished a court as the Court of Appeals of the Second Circuit have said in the same context: "[O]ur sense perceptions—even our most immediate sense impressions—are always 'conclusions'." United States v. Petrone, 185 F.2d 334, 336 (2d Cir. 1950). This is all very strange and, perhaps, attributable to the fact that all perceptual knowledge has an intellectual component. See p. 373, *infra*. If so, the error is the failure to distinguish between an idea and an inference.

23. All of the knowledge which may be judicially noticed is indirect except the sort of knowledge which we call intellectual intuitions, that is, necessary general propositions which are self-evidently true and the truth of which is grasped immediately by minds which understand the terms of such propositions. The fuller discussion of this point must await a later article on judicial notice. The distinction between the direct

knowledge of individual things or events or generalized knowledge of kinds of things or events. Knowledge of the first sort consists of singular propositions[24] and of the second sort, of general propositions;[25] and a jury must possess knowledge of both sorts in order to decide a material issue. For although a material issue always concerns a particular thing or event, although it is always constituted of contradictory singular propositions,[26] a jury can resolve such an issue only by means of inferential knowledge of the thing or event which the issue concerns; and to achieve such knowledge it must employ both singular and general propositions as premises.[27] While the doctrine of judicial notice authorizes a jury to take cognizance of some knowledge of particular things or events, the knowledge of that sort which may be judicially noticed is so limited that there can rarely be a controversy in which a jury will not find it necessary to acquire other knowledge of that sort by observation; and the only knowledge of particular things and events which it can properly acquire in that way is knowledge of evidence.

It is in this connection that the problems of real proof arise. The law of evidence is in part concerned with the admission and exclusion of things or events offered as evidence. What things and events does it permit litigants to introduce as evidence? Of what things and events is a jury permitted to acquire direct knowledge?

§ 3. *The Nature of Evidence*

As we use the word "evidence" only a thing or an event can be evidence, but all things and events which a jury can know directly in any respect can become evidence.[28] However, a particular thing or event which is in this

and the indirect knowledge of witnesses is basic to the understanding of the traditional distinction between "fact" and "opinion" which is drawn by the "opinion rule." The discussion of this point must also await later articles on testimonial proof, although it will be somewhat illuminated in the present article by analogous problems in real proof. It must be kept in mind at all times that there is no difference whatever between the processes by which jurors, and those by which witnesses, acquire knowledge, both direct and indirect.

24. In *TIF* we called propositions which state knowledge of individual things or events "elementary"; we have now decided to call them "singular," not only because it is customary to do so but also because it describes their character more accurately.

25. For the nature of propositions and the distinction between singular and general propositions see *TIF*, 1247. 1247 n.31, 1248, 1250, 1250 n.36, 1264.

26. A general proposition can never be a material proposition; and this for the reason that the relationships between kinds or classes of things, events, or attributes are never legally significant for a litigious controversy.

27. This follows from the rule of inference which regulates the proof of a singular proposition. See *TIF*, 1270-74.

28. See *TIF*, 1265 *et seq.* For various definitions of "evidence," see 1 WIGMORE § 1 and 1 CHAMBERLAYNE §§ 4-7. Wigmore himself says that in "the process of presenting evidence for the purpose of demonstrating an asserted fact . . . the term Evidence represents: Any knowable fact or group of facts, not a legal or a logical principle, considered with a view to its being offered before a legal tribunal for the purpose of producing a persuasion, positive or negative, on the part of the tribunal, as to the truth of a proposition, not of law or of logic, on which the determination of the tribunal is to be asked." This statement confuses facts and propositions, proof and persuasion, and truth and probability.

sense potentially an item of evidence may never become so actually. It may never be offered as evidence or, if offered, may be excluded by the judge.[29] To become evidence, a thing or event must satisfy three conditions: first, it must exist or occur in the presence of the jury;[30] second, it must be sensible in some respect, that is, capable of being sensed or perceived in that respect by the jury; and, third, it must be made sensibly apparent to the jury.[31] In our usage, therefore, evidence consists of things and events and only of things and events which judges permit to be exhibited to juries so that the latter can observe them.[32]

We must now separate one kind of event from all other kinds of events, and one kind of thing from all other kinds of things, which can be evidence. The kind of event is the event of a person's reporting what purports to be his knowledge; and the kind of thing is the document, a thing which states what purports to be knowledge possessed by its author.[33] Such an event can occur in or out of the presence of a jury; when it takes the form of a witness' giving testimony we shall call it a "testimonial event."[34] Similarly, such a thing can exist in or out of the presence of a jury. In these respects an event of this sort is like all other events, and a thing of this sort is like all other things, which can and do become evidence. But there is one respect

29. As we shall see, there is one sort of event which need not be offered and cannot be excluded, namely, the behavior, voluntary and involuntary, of a witness while giving his testimony. This is traditionally known as "demeanor evidence."

30. That does not mean that the thing or event must exist or occur in the court-room; the jury may be taken to the thing or event so that they can "view" it. See *infra*, p. 366, 366 n.66.

31. Of course, it will not be sensibly apparent to the jury although it exists or occurs in the presence of the jury and is sensible, if it may not be observed by the jury without the judge's permission and he will not permit the jury to observe it.

32. As we use the word, things include persons.

33. There are things, such as paper, wood and stone, upon which words and sentences can be inscribed or otherwise impressed. What is inscribed or impressed thereon may or may not be a report or record of what purports to be the knowledge of him who has made the inscription or impression. If it is, we call the thing a document and the maker of the inscription or impression the author of the document, whatever his purpose in producing the document and although it may also include what does not purport to be the author's knowledge. If nothing that is inscribed or impressed upon the thing purports to be a report or record of knowledge or in so far as there is also inscribed or impressed upon the thing what does not purport to be a report or record of knowledge, we call the thing a writing or an instrument or by a similar name. That is to say that in one aspect a thing may be a document and in another, a writing or instrument, or it may be exclusively the one or the other.

34. If the event of a person's reporting what purports to be his knowledge does not occur in the presence, not only of a jury but also of the very jury which is trying the issue to which the knowledge which he has reported is relevant, the reporter is known as an "extrajudicial declarant"; his report, as an "extrajudicial declaration"; and the making of his report, as the "making of an extrajudicial declaration." The author of a document is an extrajudicial declarant; in so far as a document states what purports to be his knowledge it is one or more extrajudicial declarations; and the preparation of a document is the making of an extrajudicial declaration. An extrajudicial declaration, like testimony, is thus reported knowledge. While a jury can know a testimonial event directly, it can know the making of an extrajudicial declaration only indirectly although, if the extrajudicial declaration is a document, it can know the extrajudicial declaration directly.

in which they are unique: Such an event is the only sort of event which involves, and such a thing is the only sort of thing which includes, what purports to be a report of knowledge. A jury, observing a testimonial event by its sense of hearing or a document by its sense of vision, learns directly what it is that a witness states, or the author of a document has stated, as his knowledge,[35] knowledge which, if it is genuinely such, the jury can somehow use in deciding a material issue.[36] But there is a special condition, namely, the credibility of the witness or of the author, which must be satisfied if a jury is to infer that what either has stated to be the case is the case; and this condition complicates enormously the inferential processes that a testimonial event or a document can initiate.[37] The nature of such an event or thing and the complex character of the inferences which they make possible, distinguish them from all other events and things which juries can know directly. It is possible, of course, that a testimonial event or a document may be offered and admitted as evidence so that a jury can infer, not that what the witness or author has stated to be the case is the case, but that something else is the case; and in that event the testimonial event need not be distinguished from other events, or the document from other things, which a jury can know directly.

Traditionally, it is said that there are three kinds of evidence, real, testimonial and circumstantial, but in our view there is only one kind of evidence, although there are three kinds of evidential propositions[38] and three kinds of proof. All evidence is "real" in the sense that every item of evidence must exist or occur sensibly in the presence of a jury; and what is traditionally called "real evidence" and what is traditionally called "testimonial evidence" are only two classes of things and events which can be evidence and which can be distinguished from one another only by the differences in the inferences which they can respectively generate. In short, real proof is different from testimonial proof, and it is this difference which underlies the traditional distinction between real evidence and testimonial evidence. In order to make this clearer, we must pass from an epistemic to a logical analysis of the process by which a jury acquires direct knowledge of evidence and of the inferences which such knowledge makes possible.

35. Provided, of course, that it is expressed in a language which the jury understands.

36. If the witness or author is truthful the knowledge which he reports is necessarily his own, although it may be knowledge of the making and content of an extrajudicial declaration. The hearsay rule and its exceptions are the legal conventions which determine whether and how a jury may use an extrajudicial declaration inferentially.

37. This is equally true of every extrajudicial declaration.

38. By an evidential proposition we mean a singular proposition which is employed in the proof of a probandum, that is, a proposition to be proved. As we shall see, the three kinds of evidential propositions are propositions of real evidence, propositions of testimonial evidence, and propositions of circumstantial evidence.

§ 4. *The Relation of Evidence to The Probative Process*

Viewed logically, knowledge consists of propositions. Knowledge is expressed in and communicated by language,[39]—more specifically by that unit of language which is called a declarative sentence.[40] Such a sentence can express one or more items of knowledge, one or more propositions. A proposition which is knowledge that we possess, is one that we can and do assert. But we can construct declarative sentences which express what we do not then know but can and may know subsequently. Such sentences express propositions which we cannot properly assert. Propositions are thus either potential or actual knowledge; and since the assertion of a proposition is the act of knowledge, the making of a judgment, we can properly assert only those propositions which are our actual knowledge. In short, all propositions are assertible, but not all of them are assertible or can properly be asserted by a particular person at a particular time. It should be apparent at once that the knowledge needed by a jury to decide a material issue is a proposition which it cannot properly assert at the beginning of the trial of the issue. That is to say that the contradictory material propositions of which such an issue is constituted are at the inception of a trial of the issue the jury's potential and not its actual knowledge. The trial of the issue is normally concluded by the jury's assertion of one of those propositions as its answer to the issue.[41] The question how the jury was enabled to assert it and the question how a jury acquires the knowledge which it needs in order to resolve a material issue, are the same question.

We shall be aided at this point by distinguishing kinds of propositions according to the kinds of knowledge which they are. Knowledge, as we have seen, is either about particular things or events or about kinds of things or events. Propositions which are knowledge of the first sort are singular propositions and those which are knowledge of the second sort are general

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39. By language we here mean the notations of common speech which are called words. We recognize, of course, that knowledge can be expressed by non-verbal notations, such as the symbols of mathematics, by gestures, such as semaphore signals, and by other signs. For our purposes, however, it is sufficient to consider the words of a common language, such as English, as a means of expressing knowledge.

40. Translation of a sentence from one langauge into another shows that the same proposition can be expressed by different sentences; even in the same langauge two different sets of words can sometimes be used to express the same proposition; and a single sentence, if ambiguous, can be interpreted as expressing two or more propositions alternatively. It thus appears that a sentence can be separated analytically from the proposition which it expresses, even though it cannot be separated therefrom actually without becoming a set of meaningless sounds or marks. But, as we have seen *(supra,* note 39), propositions need not be expressed by sentences constituted by the words of an ordinary language. Propositions are sometimes, therefore, actually as well as analytically separable from ordinary verbal sentences.

41. The "mistrial," whether it occurs because of the inability of the jurors to agree upon the correct answers to the issues submitted to them or for some other reason, may be regarded as abnormal, since most trials by jury end in verdicts.

propositions.[42] Whether of the one or the other sort, knowledge is either direct or indirect, either the result of intuition, sensitive or intellectual, or the result of inference.[43] Propositions which are direct knowledge are immediate or indemonstrable; only those which are indirect knowledge are demonstrable. An immediate proposition, whether singular or general, can be asserted without proof or demonstration because it is knowledge which is had directly. But unless it is assumed, a demonstrable proposition, whether singular or general,[44] can be asserted only as the result of its proof. A proposition which is a jury's direct knowledge of an item of evidence is an *immediate* singular proposition; hence, it can be and is asserted as the result of perception and not of proof. A material proposition, on the other hand, is always a demonstrable singular proposition which, if denied, a jury cannot and may not assert unless it is proved. Every material proposition which is denied therefore becomes an ultimate probandum.[45] And all propositions, singular and general, which are employed in the proof of an ultimate probandum, except those which a jury may judicially notice or which are its knowledge of evidence, are likewise demonstrable propositions which cannot be asserted by a jury unless they are proved. They are intermediate probanda and, if proved, knowledge which the jury acquires during the trial as the result of their proof.[46]

42. See notes 24, 25, *supra.* We call singular propositions propositions of fact precisely because they are always about particular things or events. The subject of a sentence which expresses a singular proposition is always a proper name or a definite descriptive phrase which uniquely designates some particular, either a particular thing or event or a particular attribute of a thing or event. We call such propositions singular to distinguish them from general propositions which are about kinds of things, events, or attributes rather than about any particular instance of a kind. The subject of a sentence which expresses a general proposition is always a common name or an indefinite descriptive phrase which connotes a kind or class of thing or event or attribute. General propositions are not propositions of fact in the same sense as singular propositions; that is, they do not state knowledge about particular existences. But this does not mean that general propositions have no reference to the world of actual existences. On the contrary, general propositions are divided into two groups according as they state knowledge of reality or knowledge of ideal or purely formal objects. All empirical generalizations, in fact, all inductions from experience, are of the first sort. Being of this sort, the general propositions that serve as evidential hypotheses in judicial proof are factual in their ultimate origin and reference, even though they are not, like singular propositions, propositions of particular fact. See *TIF,* 1250 n.38.

43. Singular propositions which are immediate are observations or sensitive intuitions, just as general propositions which are immediate are axioms or intellectual intuitions. (See note 23, *supra.)* The immediacy of the knowledge is thus different in the case of singular and in the case of general propositions; the former are *evident* truths, the latter are *self-evident;* but all immediate propositions are alike in that they are all essentially indemonstrable. Demonstrable singular and demonstrable general propositions are alike in that both state the results, potential of actual, or inference, although they are distinguishable by the types of inferences by which they are demonstrable.

44. Strictly speaking, axioms, that is, self-evident general propositions, cannot be assumed, since only demonstrable propositions need to be or can be assumed although, as assumed, they are asserted without being demonstrated. But the doctrine of judicial notice does not distinguish between immediate and demonstrable general propositions; it comprehends both.

45. By an ultimate probandum we mean a material proposition which has been denied and is therefore in dispute.

46. By an intermediate probandum we mean any other proposition, singular or general, than an ultimate probandum, which cannot be asserted unless it is proved.

The acquisition of knowledge indirectly by inference is logically analyzed in terms of the nature of the step of proof as the result of which the proposition which is that knowledge is asserted. A proposition is proved when it must be asserted as the result of the assertion of other propositions. Proof is thus a psychological process consisting of acts of assertion.[47] It is valid or invalid according as it does or does not conform to the rule of logic which states the conditions under which a proposition, having a certain form, can be asserted if other propositions, having certain forms, are asserted. It is clear that no proposition can be proved unless some propositions can be asserted without proof, either because they are immediate or because, though demonstrable, they are assumed. We had this point in mind when we said that a jury cannot acquire knowledge by inference unless it possesses or acquires some knowledge without inference. The knowledge of which it takes judicial notice and the knowledge which it acquires by the perception of evidence is knowledge which it has or acquires without inference; from these two sorts of knowledge, it acquires by inference other knowledge which can be asserted as the result of proof.

We can now return to the traditional distinction between real and testimonial evidence. The knowledge which a jury acquires when it hears what a witness states or reads what the author of a document has stated as his knowledge, is of precisely the same sort as that which it obtains when it observes either any other aspect of a document or testimonial event, or a thing or event of any other sort. In each instance it is the jury's perceptual knowledge; and this identity reflects the sense in which, as we have said, all evidence is "real." We shall therefore give the name "propositions of real evidence" to all propositions which are a jury's perceptual knowledge of evidence. All propositions of real evidence are alike in that all of them are immediate and singular. They differ only in that those which are a jury's direct knowledge of a report of knowledge by a document or a witness, unlike those which are its direct knowledge of other things and events, themselves contain propositions, the propositions which are the knowledge which the author of the document or the witness claims to possess. This difference is recognized by the distinction between simple and compound singular propositions. It can be simply expressed as follows: If simple, a proposition of real evidence is of the form "This (thing or event) appears to the jury to be such and such"; if compound, it is of the form "This (document or witness) appears to the jury to state that such and such is the case."[48] The presence of the word "appears" in both of these formulae indicates that

47. See *TIF*, 1271-73.

48. The words "such and such is the case" here stand for any possible proposition which a witness or document can report, without distinction as to its being singular or general, simple or compound, immediate or demonstrable.

all propositions of those forms are immediate, that they are perceptual knowledge; we shall subsequently state its significance more fully. If a singular proposition is demonstrable it will contain the word "is" instead of the word "appears," whether it is simple or compound; we shall subsequently discuss the meaning of "is" in relation to the meaning of "appears."

While in our view there is only one kind of evidence there are three kinds of proof, real, circumstantial and testimonial; and we must now distinguish them from one another.

(1) A step of real proof is always an inference from knowledge of what appears to be the case in some respect to knowledge of what is actually the case in that *same* respect. If the proposition of real evidence employed as a probans[49] in a real inference is a simple proposition, the step is the transition from the assertion of a proposition of the form "This appears to the jury to be such and such" to the assertion of a proposition of the form "This is such and such."[50] But if it is a compound proposition, the step is the transition from the assertion of a proposition of the form "This (document or witness) appears to the jury to state that such and such is the case" to the assertion of a proposition of the form "This (document or witness) does state that such and such is the case." In short, the conclusion, the proximate probandum, of a step of real proof is itself a simple or a compound proposition according as the proposition of real evidence employed as a probans in that step is simple or compound.

(2) A step of testimonial proof is always the inference that what a document[51] or witness has stated to be the case is the case. Having inferred in a step of real proof that a document or witness states that something is the case, a jury then infers that what the document or witness has stated to be the case is the case. We shall give the name "propositions of testimonial evidence" to all propositions which are a jury's indirect knowledge of a statement by a document or a witness that something is the case. All propositions of testimonial evidence are thus demonstrable, compound, singular propositions of the form "This (document or witness) states that such and such is the case"; and a step of testimonial proof is always the transition from the assertion of a proposition of that form to the assertion of the proposition of the form "Such and such is the case" which is con-

49. The word "probans" should be contrasted with the word "probandum." Just as we use the latter to mean a proposition to be proved, either intermediately or ultimately, so we use the former to mean a proving proposition, a premise. If singular, a probans is an evidential proposition and, if general, an evidential hypothesis. See *infra*, p. 359.

50. For a general discussion of the formal conditions of the validity of any step of proof, see *TIF*, 1271 *et seq.*

51. Strictly, of course, the inference is that what the author of the document has stated to be the case is the case.

tained in the proposition of testimonial evidence employed as a probans in that step.[52]

(3) A step of circumstantial proof is always an inference from knowledge that *something* is the case to knowledge that something *else* is also the case. Having observed or inferred or judicially noticed what is the case in some respect, a jury then infers what is the case in some other respect. This, we hope, makes it clear that any singular proposition, whether immediate or demonstrable, whether simple or compound, can be employed as a probans in a circumstantial inference. Thus, propositions of real and of testimonial evidence can be so employed. From a jury's direct knowledge of what *appears* to it to be the case in some respect, the jury may infer, not that *it* is the case, but that something *else* is the case. Similarly, from a jury's indirect knowledge that a document or witness states that something is the case, the jury may infer not that what the document or witness has stated to be the case is the case, but that something *else* is the case.[53] However, we shall reserve the name "propositions of circumstantial evidence" for demonstrable, simple, singular propositions of the form "This is such and such." We do so because, typically, the step of circumstantial proof is the transition from the assertion of a proposition of that form to the assertion of a proposition of the same form but of different content "This is so and so."

A number of important analytical points can be seen as soon as the nature of real, of testimonial, and of circumstantial proof, and the distinctions among them, are understood.

(1) It has been said by Wigmore that there is real evidence but no real proof, that is, no characteristic step or proof in which a proposition of real evidence is employed probatively.[54] To defend this position, one would have to maintain that things are always precisely as they appear to be, in which

52. See note 48, *supra*. A more refined analysis of testimonial proof reveals that it involves not one but two inferences, first, the inference that what a witness or the author of a document has stated as his knowledge is his knowledge, namely, that such and such is the case, and, second, the inference that what he knows to be the case is the case. There are problems of testimonial proof which can be understood and solved only by means of this more subtle analysis, but it is unnecessary to use it in order to differentiate testimonial proof from real proof.

53. This use of a proposition of testimonial evidence is sometimes referred to as "the circumstantial use of words."

54. In 1 WIGMORE § 24 it is said: "With reference to this mode of producing persuasion no question of relevancy arises. 'Res ipsa loquitur.' The thing proves or disproves itself. No logical process is employed; only an act of sensible apprehension occurs. . . . Bringing a knife into Court . . . is not giving evidence in the sense that it is asking the Court to perform a process of inference. . . ." But in 4 WIGMORE § 1159, the matter is put in this way: "It is unnecessary, for present purposes, to ask whether this is not, after all, a third source of inference, *i.e.* an inference from the impressions or perceptions of the tribunal to the objective existence of the thing perceived. The law does not need to consider theories of psychology as to the subjectivity of knowledge or the mediateness of perception. It assumes the objectivity of external nature; and, for the purposes of judicial investigation, a thing perceived by the tribunal as existing *does* exist." (See also 1 WIGMORE § 24, n.4.)

case, of course, there would be no distinction between a proposition of real evidence and its proximate probandum.[55] Moreover, the position implies that there are material issues which a jury can answer by its perceptual knowledge of evidence, which in turn implies that there are material propositions which are not probanda, even though they are denied, but rather immediate singular and, hence, indemonstrable propositions. The incorrectness of this position is shown by the following test: Is a proposition of the form "This *appears* to the jury to be such and such" ever material? Or are not all material propositions demonstrable, elementary propositions of the form "This *is* such and such"? We think that it will be apparent that the first of these questions must be answered in the negative, and the second, in the affirmative. It follows, of course, that there must be real proof.[56]

(2) If the proximate probandum of a step of real proof is a material proposition it is also an ultimate probandum. But if it is an immaterial proposition, as it usually is, the jury will have to perform at least one further inference in order to achieve the knowledge required to answer a material issue. A series of inferences is constructed logically as a line of proof constituted of two or more steps of proof arranged in such a sequence that the proximate probandum of each step is employed as a probans in the next succeeding step, until an ultimate probandum is reached.[57] A line of proof, however, must have its ultimate probantia, propositions the assertion of which is not conditioned upon their proof, as well as its ultimate probandum. Only propositions of real evidence and propositions, both singular and general, which may be judicially noticed, can be ultimate probantia; and they have that status in the steps and lines of proof in which they occur. But a line of proof must contain at least one proposition which is neither an ultimate probans nor an ultimate probandum, at least one proposition which must be proved by a prior step of proof so that it may be employed probatively in the following step. We shall speak of such propositions as

55. By a proximate probandum we mean the conclusion of a step of proof of any sort. If the proximate probandum of a step of proof is a material proposition, it is also an ultimate probandum; otherwise it is an intermediate probandum and probans. As a probans, it is either a proposition of testimonial evidence or a proposition of circumstantial evidence.

56. Subsequent analysis of the proposition of real evidence will make clear why it is impossible for such a proposition to be a material proposition.

57. The structure of a line of proof may be much more complicated than we have indicated in the text. There may be secondary collateral lines of proof which converge upon intermediate probanda in the principal line, and there may also be other subordinate collateral lines of proof which converge upon intermediate probanda in the secondary lines. For example, one of the evidential propositions in a step of testimonial proof is the proposition "The witness is credible." But this is a demonstrable proposition which may never be judicially noticed and is never an ultimate probandum; consequently, it is an intermediate probandum. It can be proved only by proving a series of demonstrable elementary propositions, one of which is "The witness is veracious." This proposition in turn can be proved in different ways. Moreover, there may be more than one intermediate probandum in any line of proof, principal or subordinate. For a fuller discussion of these matters, see *TIF*, 1478-80 and 1479 n.12.

intermediate probanda and probantia. An intermediate probandum and probans may be either a singular or a general proposition; if singular, as a probans it is either a proposition of testimonial evidence or a proposition of circumstantial evidence.

As we shall see, no probandum can be proved by a single probans. If a probandum is a singular proposition, it can be proved only by a conjunction of at least two probantia of which all except one must be singular propositions and that one, a general proposition. We shall sometimes speak of singular propositions employed as probantia as "evidential propositions"; an evidential proposition must be a proposition of real, or of testimonial, or of circumstantial evidence. And we shall refer to general propositions employed as probantia as "evidential hypotheses," and we shall discriminate among those which are so employed in real, in testimonial, and in circumstantial proof. The general propositions employed as evidential hypotheses in real and in testimonial proof may always be judicially noticed; they are always ultimate probantia. But not all of those so employed in circumstantial proof may be judicially noticed; those which may be, are ultimate probantia, but those which may not be, are intermediate probanda and probantia.

A step of proof can initiate a line of proof only if its probantia are immediate propositions or, if demonstrable propositions, need not be proved, either because they may be judicially noticed or are conceded. That is to say that a step of proof can initiate a line of proof only if its probantia are ultimate probantia. This holds for a step of real proof as well as for steps of testimonial and of circumstantial proof.

§ 5. *The Conditions of Admissibility of Real Proof*

In summary fashion we have now defined evidence as things and events which with judicial permission are exhibited to a jury so that the jurors can know them directly,[58] and we have distinguished propositions of real, of testimonial, and of circumstantial evidence and the characteristically different steps of proof in which they are respectively employed as evidential propositions.[59] While our analysis has revealed that both propositions of real

58. A jury can acquire direct knowledge only of sensible things and events and of the sensible qualities of things and events. Although a thing or event becomes evidence and is observed by a jury, the jury can acquire only indirect knowledge of its non-sensible qualities. And if a thing or event does not become evidence, the jury can acquire only indirect knowledge of its qualities, even of the sensible ones.

59. We hope that it is now clear that the primitive terms in our analysis are "evidence" and "proposition." We have studiously avoided speaking of facts either as the end or as the means of proof. We have done so because of the ambiguity of the word in legal usage and because if by a fact is meant something that is actually the case, a fact cannot be proved, nor can it be used in proving another fact. In this sense, a fact is an object of knowledge. We cannot separate our knowledge about a fact from the proposition which is our knowledge about it. Nor can we separate a proposition of fact

evidence and propositions of testimonial evidence can be employed as evidential propositions in steps of circumstantial proof, it has also disclosed that steps of real, of testimonial, and of circumstantial proof are irreducibly different and cannot be confused with one another. We are thus enabled to see the problems of real proof in their proper setting among all the problems of judicial proof. What we have defined as evidence and real proof occur in the researches of the historian, in the laboratory investigations and field work of the natural or the social scientist, and in the cognitive processes of everyday life by which men acquire knowledge of their environments, as well as in trials of material issues by legal tribunals.[60] But we are concerned with the problems of evidence and real proof as legal problems; we are undertaking epistemic and logical analyses of the former in an effort to clarify and solve the latter. As legal problems, the problems of evidence and real proof can be formulated only by reference to the legal aspect of a trial.

In largest part, the law of evidence is concerned with the admission and exclusion of things and events offered as evidence and of propositions offered as evidential propositions and evidential hypotheses. The most general principles of the law of evidence can be simply stated:[61] (1) A proposition offered as a probans is inadmissible unless it is directly or indirectly relevant to an ultimate probandum. (2) Although a proposition offered as a probans is directly or indirectly relevant to an ultimate probandum, it is nevertheless inadmissible if the negative value of its use in

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from the fact of which it is knowledge; that separation can be achieved only analytically by the recognition that a proposition can be true or false and that what is reported by a false proposition of fact is not a fact. A fact can therefore be defined as that which is reported by a singular proposition which is true in the sense that what it states to be the case is actually the case. It is thus clear that for every pair of contradictory propositions about a matter of fact, that is, for every pair of contradictory singular propositions, there is only one fact, namely, whatever is actually the case. A fact in this sense can no more be "stated" in a pleading than proved. To state a fact is to allege a singular proposition as the answer to a material issue and to claim that it ought to be so asserted by the tribunal. For a fuller discussion of the distinction between fact and proposition, see *TIF*, 1248-51.

60. All our knowledge of matters of fact, of particular things and events, in whatever field of cognitive activity, must start with "real evidence" and must involve real proof, although these technical phrases have an exclusively legal usage. For a discussion of the problems of "real evidence" and "real proof" in general epistemology, and as concerned primarily with scientific investigations, see C. I. LEWIS, MIND AND THE WORLD ORDER, cc. 9, 10 (1929), and R. F. A. HOERNLE, STUDIES IN CONTEMPORARY METAPHYSICS, cc. 4, 5 (1920); and for a discussion of them in historical research, see C. V. LANGLOIS AND C. SEIGNEBOS, INTRODUCTION TO THE STUDY OF HISTORY, bk. II, c. 1 (1912).

61. *Cf.* THAYER, PRELIMINARY TREATISE ON EVIDENCE 264-65, 266 (1898): "Observe, at this point, one or two fundamental conceptions. There is a principle . . . which forbids receiving anything irrelevant, not logically probative. . . . There is another precept which should be laid down as preliminary, in stating the law of evidence; namely, that unless excluded by some rule or principle of law, all that is logically probative is admissible. . . . Some things are rejected as being of too slight significance, or as having too conjectural and remote a connection; others, as being dangerous, in their effect on the jury, and likely to be misused or overestimated by that body; others, as being impolitic, or unsafe on public grounds. . . ." And see 1 WIGMORE §§ 9-10.

the probative process exceeds the positive value. The various specific exclusionary rules of the law of evidence, such as the character rule, the opinion rule and the hearsay rule, are applications of the second of these principles; they are determinations that the disadvantages of admitting the sorts of "evidence" which they exclude, exceed the advantages. The advantages or positive value of admitting a proposition offered as a probans must be understood in terms of its probative force and the need for employing it probatively. It must suffice at this point to say that the probative force of a probans is measured by its effect upon the probability of the ultimate probandum to which it is relevant, and that that depends upon two factors, first, its own assertoric value, that is, whether it can be asserted as true or, if only as probable, the degree of probability which it can be asserted to possess, and, second, upon the prior probability of which its ultimate probandum, that is, the degree of probability which its ultimate probandum can be asserted to possess, prior to this instance of its proof. The need for using a proposition as a probans depends upon the feasibility of proving the ultimate probandum to which it is relevant by other proofs and upon their probative force. The disadvantages or negative value of admitting a proposition as a probans must be understood in terms either of the likelihood that its use in the probative process will result in worse rather than in better answers to material issues or of the probable adverse effect of admitting propositions of that sort upon certain political and social interests which it is the policy of procedural law to protect.

None of the specific exclusionary rules of the law of evidence, such as those which we have mentioned, applies to real proof; they apply only to testimonial or to circumstantial proof. It will be remembered that a thing or event is always offered so that a jury can know it directly and use its direct knowledge of the thing or event in a real inference. Consequently, as we have said, to offer a thing or event as evidence is necessarily to offer one or more propositions of real evidence and one or more steps of real proof; and they will necessarily be admitted or excluded according as the thing or event is admitted or excluded. An event always involves a thing, and a thing is sensible in different respects. It has sensible qualities and it is itself sensible, that is, it can appear to be a thing of a certain sort. It follows that a thing or event may be offered so that a jury can observe one or more of its sensible qualities, or the sort of thing or event it apparently is, or for both purposes. We shall call the purpose for which a thing or event is offered "the perceptual purpose of the offer." The condition of admissibility which is peculiar to real proof is the condition that a jury shall be able to accomplish the preceptual purpose of the offer of a thing or event, that it shall be able to make the observations which the offer contemplates; we shall

call this condition of admissibility "the epistemic condition" of the admissibility of real proof. We do so, because it is concerned with capacity of men like jurors, untrained observers of normal sensitive powers and common experience, to acquire perceptual knowledge under the observational conditions furnished by a trial.

For the rest, the admissibility of things and events, of propositions of real evidence and of steps of real proof, is regulated by the two principles which we have characterized as the most general principles of the law of evidence and which are, perhaps, more often and more crucially applicable to testimonial and circumstantial proof, especially the second of them. The first of them imposes upon real proof the condition that, to be admissible, a proposition of real evidence shall be directly or indirectly relevant to an ultimate probandum.[62] We shall call this condition "the logical condition" of the admissibility of real proof. As we shall see, the satisfaction of this condition depends upon the identification of the offered thing or event with one of the litigants in some way, and, if the proximate probandum of the offered step of real proof is not an ultimate probandum, upon the admissibility of the necessary subsequent steps in the line of proof which it would initiate. The second of these principles is concerned with preventing such litigious disadvantages as the undue prolongation of trials, unfair surprise, confusion of issues and undue prejudice. It imposes upon real proof the condition that the advantages of admitting a thing or event and the step of real proof which would be generated thereby shall exceed the disadvantages. Since these advantages and disadvantages are practical ones, we shall speak of this condition as "the practical condition" of the admissibility of real proof.

The problems of real proof focus ultimately upon the probative force of steps of real proof in relation both to their proximate probanda and to the ultimate probanda of lines of proof of which they are elements. But we think that we have now made it clear that the central as well as the peculiar problem of real proof is what kinds of things and events may be exhibited to juries so that they can know them directly. The solution of this problem in its various manifestations depends primarily upon an epistemic analysis, an analysis of the nature of perceptual knowledge and of the capacity to acquire it of the sort of men that jurors are. But we shall find it necessary to resort also to logical analysis in order to discover the nature of proposi-

62. The inferential relationship is transitive, by which is meant that if P and Q, any two propositions, prove R, and if R and S prove T, then P, which is conditionally probative of R, is also conditionally probative of T. This explains the distinction between direct and indirect proof and between direct and indirect relevancy. One proposition is relevant to another if it is capable of being employed in the proof of that other; it is directly relevant to its proximate probandum but only indirectly relevant to a more remote probandum in the same line of proof. Thus, in the case that we put above, P is relevant to both R and T; it is directly relevant to R and indirectly relevant to T. See *TIF*, 1275, 1277-79.

tions which are perceptual knowledge and of the inferences which they make possible. However, the logical analysis will be found to be related to the epistemic, as the examination of the forms of propositions and of proofs is related to the examination of their matter. We are primarily concerned to know what is the content of propositions which are perceptual knowledge and how the probative force of real proof is affected by variations in their content and in the conditions under which such knowledge is obtained. Knowing this, we should be able to say what the rules governing the admissibility of real proof *ought* to be and to criticize them as they are.

As we have said, we cannot separate our analysis of propositions of real evidence from a consideration of the kinds of things and events which juries can know directly. Nor can we separate it, either from our analysis of the steps of real proof in which such propositions are employed as probantia, or from our analysis of the steps of testimonial and circumstantial proof with which steps of real proof must so often be associated. It is only by such an integrated view of the matter that we can understand the problems which arise when things and events are offered as evidence. These problems are defined by what we have called the epistemic, the logical, and the practical conditions of admissibility. Those involved in the administration of the epistemic condition of admissibility and, to a lesser extent, those involved in the administration of the logical condition, range from very simple ones, which the courts appear to decide uniformly, to very complicated ones, which they decide differently because the principles which so perfectly fit and so conclusively solve the simple problems are inadequate for the solution of the complicated ones. It is at this point that our analysis must become more subtle, both in order to understand the problems and in order to solve them. We recognize, of course, that an analysis which is adequate for the first of these purposes may be inadequate for the second, and that the most difficult legal problems are precisely those which most urgently require and most insistently demand the exercise of judicial discretion. But discretion should not be blind or capricious; it should be guided by principles: It is that good judgment which men must use in order to solve particular practical problems in the light of principles which apply equally but not with equal clarity to all problems of the same sort.[63]

This insight requires us to present an account of the problems of real proof in such a way that the analytical principles which are adequate for the solution of the simple problems are first expounded. But the simple ones are not all of the same sort. We shall find that there are three types of real proof, each with its simple problems for the solution of which the

63. See ARISTOTLE, NICHOMACHEAN ETHICS, bk. VI, c. 11.

analysis of that type is adequate, and each with its difficult problems to which the principles developed by the analysis must be applied with discretion. In addition, the three types of real proof are themselves in an order of difficulty and complexity, so that the analysis which is sufficient for the simple cases of the first type must be extended and deepened in order to make it adequate for even the simple cases of the second type, and made even more subtle in order to make it adequate for those of the third type. We shall, therefore, first analyze the three types of real proof in the order of their difficulty and complexity; we shall then consider the conditions of admissibility of each type. In this part of our enterprise, we shall endeavor to discover the principles that render the simple problems of each type intelligible and soluble, before introducing the more difficult ones with respect to which our analytical task is precisely to indicate why they are difficult and why, therefore, their solution requires the exercise of judicial discretion.

The following brief outline of the subsequent parts of this essay will serve to notify our readers of the nature of the topics which we shall discuss and of the order in which we shall discuss them.

II. Types of Real Proof.

- A. Real Proof of The First Type: The Wholly Sensible Quality.
- B. Real Proof of The Second Type: The Sensible Object.
- C. Real Proof of The Third Type: The Ambiguous Characteristic.

III. The Conditions of Admissibility of Real Proof.

- A. The Epistemic Condition: In the first type of real proof the difficult cases are those which involve degrees of sensible qualities; in the second type, the difficult cases are those which turn upon the question what kinds of things are "common sensible objects"; in the third type, even the simple cases are difficult because the ambiguous characteristic involves both sensible and non-sensible elements.
- B. The Logical Condition: The satisfaction of this condition depends upon the identification of the thing and, if the proximate probandum of the step of real proof is not an ultimate probandum, upon the admissibility of the necessary subsequent steps of testimonial and of circumstantial proof.
- C. The Practical Condition: It is of the nature of this condition that its administration involves the exercise of judicial discretion. Do the courts exercise their discretion prudently?

IV. Probative Force and Opposition: The major problems are how the probative force of a step of real proof in relation both to its proximate probandum and to its ultimate probandum is calculated, and whether or not real proof can be opposed and, if so, in what ways.

V. Special Cases of Real Proof.

A. Documents: The chief problems are those created by the necessity of "authentication" and the "best evidence rule."

B. Demonstrations and Experiments: An event, as well as a thing, can be exhibited to a jury so that the jury can know it directly, but the offer of an event creates special problems. For that reason, in parts II - IV of this essay we shall generally restrict our analysis to cases in which things rather than events are offered. Demonstrations and experiments are kinds of events; the primary question involved in the offer of an event of either sort is what the proponent is seeking to prove.

C. Demeanor Evidence: Demeanor, whether that of a witness while testifying or of a person who is not giving testimony, is not only a kind of event, but a kind which always occurs in the presence of a jury and is sensibly apparent to it. Consequently, such an event need not be offered and cannot be excluded. The chief problem, therefore, is judicial control of the inferences from such evidence and the estimation of their probative force.

VI. Summary and Conclusions.

It will not always be possible to keep to this order of parts or to stay entirely within the domain of each part during the course of its development, since to some extent the various parts overlap one another. And because of limitations of space, we shall have to confine the remainder of this installment to Part II A: Real Proof of The First Type.

II. The Types of Real Proof

We have defined evidence as the class of things and events[64] which with judicial permission are exhibited to juries so that they can know them directly. Before a thing can become an item of evidence it must be offered as such by a litigant; it becomes an item of evidence only if admitted by

64. We remind the reader that by a "thing" we always mean a *physical* thing, and that in this Part of this essay we shall, in general, restrict our analysis to cases in which the evidence consisted of things rather than of events.

the judge.[65] An offer may take the form of a request by a litigant that the jury be permitted to leave the courtroom in order to perceive or, as is traditionally said, to "view" some thing which cannot conveniently be brought there. We shall, however, ignore this special case in which, instead of bringing a thing to a jury, a litigant asks that the jury be taken to the thing.[66]

We have seen that a thing is necessarily a sensible thing and that it is sensible in two different respects. The first and essentially primary respect is that it has sensible qualities; the second and essentially derivative respect is that it is a sensible object, an object of sensitive knowledge. While its being as a sensible object depends upon its possession of sensible qualities, we shall see[67] that it is not reducible to a *mere summation* of them. It is because a thing is sensible in these two respects that it can be offered so that a jury can observe one or more of its sensible qualities or so that a jury can observe the thing as a sensible object. The difference between these two perceptual purposes makes the distinction between what we shall call "real proof of the first type" and "real proof of the second type." The first occurs when a thing is admitted so that a jury can observe one or more of its sensible qualities, such as its color; and the second, when it is admitted

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65. The only exception is so-called demeanor evidence which, as we shall see, need not be offered and may not be excluded, although a jury can be instructed to ignore their knowledge of it. *Cf.* Frank, J., in Broadcast Music, Inc. v. Havana Madrid Restaurant Corporation, 175 F.2d 77, 80 (2d Cir. 1949): ". . . the demeanor of an orally-testifying witness is 'always assumed to be in evidence,'" citing 3 WIGMORE § 949. See note 29, *supra.*

66. Things are exhibited to juries so that juries can know either the things as sensible objects or their sensible qualities directly, and use their direct knowledge, formulated by propositions of real evidence, in making real inferences. And, according to some courts, this is so, whether a thing is brought to a jury or the jury is taken to the thing. [For an example of cases so holding, see Carpenter v. Carpenter, 78 N.H. 440, 101 Atl. 628, L.R.A. 1917F 974 (1917).] But, for reasons stated in the Carpenter case, in Close v. Samm, 27 Iowa 503 (1869), and in WIGMORE § 1168, other courts take the position that the purpose of a view "is not to make [jurors] silent witnesses in the case, burdened with testimony unknown to both parties," but to enable them the better to understand and the more intelligently to apply the testimony of the witnesses regarding the thing "viewed" by them. [See, for example, Close v. Samm, *supra;* Huyink v. Hart Publications, Inc., 212 Minn. 87, 2 N.W.2d 552 (1942); Ball v. Twin City Motor Bus Co., 225 Minn. 274, 30 N.W.2d 523 (1948); State v. Merritt, 212 P.2d 706 (Nev. 1949); State v. McVeigh, 35 Wash.2d 493, 214 P.2d 165 (1950).] As the court said in the Carpenter case, *supra* at 445, 101 Atl. at 631, this is nonsense, or, as the court said in Carter v. Parsons, 136 Neb. 515, 519, 286 N.W. 696, 698 (1939), a "psychological fiction." Obviously, an "intelligent application" of a jury's perceptual knowledge of a thing to the testimony of witnesses reporting opposite observations, is to reject it as incredible; and that is precisely the "intelligent manner" in which the jurors applied their perceptual knowledge in, for example, Close v. Samm, *supra.* As the court also said in the Carpenter case, "If the object is black when seen by the jury it would be absurd to expect them to find [that is, to infer] that it was white, in the absence of evidence indicating that they had been imposed upon." 78 N.H. at 447, 101 Atl. at 631. See also Bancroft Realty Co. v. Alencewicz, 7 N.J. Super. 105, 110, 72 A.2d 360, 362-63 (1950), in which the court, quoting from Hinners v. Edgewater & Ft. Lee R.R., 75 N.J.L. 514, 519, 69 Atl. 161, 163 (1908), said that "as to some testimony . . . to understand it is to discredit it, while, as to other testimony to understand it is to accept it even in the face of contradiction or denial."

67. In Part II B.

so that the jury can observe it as the sort of thing it apparently is, as salt,[68] for example, or as glass,[69] or as whiskey,[70] or as a shingle,[71] or as blood.[72] But a thing also has qualities other than its sensible ones. It has qualities which are wholly non-sensible and which, therefore, can be known only indirectly; and it has complex qualities which are constituted of a combination of sensible and non-sensible qualities and which, therefore, are partially sensible and partially non-sensible. We shall call such complex qualities "ambiguous" characteristics. Their ambiguity consists in their being like qualities which are wholly sensible in that they, too, are attributes of things and not things, and in their being like things in that their complexity includes both sensible and non-sensible qualities. Race[73] and age[74] are ambiguous characteristics of human beings; decay is an ambiguous characteristic of iron and wood.[75] A thing can be offered, therefore, so that a jury can observe those of its sensible qualities which are elements of one of its ambiguous characteristics and then infer that it has that characteristic. The difference between the first two purposes and this third purpose for which a thing can be offered makes the distinction between real proof of the first and second types and what we shall call "real proof of the third type."[76]

68. Martin v. Shell Petroleum Corp., 133 Kan. 124, 299 Pac. 261 (1931).

69. Manuta v. Lazarus, 104 Misc. 134, 171 N.Y. Supp. 1076 (City Ct. 1918).

70. Enyart v. People, 70 Colo. 362, 201 Pac. 564 (1921).

71. Morton v. Fairbanks, 11 Pick. (28 Mass.) 368 (1831).

72. People v. Fernandez, 35 N.Y. 49 (1806).

73. Hook v. Pagee, 2 Munf. (16 Va.) 379 (1811); Hudgins v. Wrights, 1 Hen. & M. (11 Va.) 134 (1806). In the latter case one of the judges said: "The distinguishing characteristics of the different species of the human race are so visibly marked, that those species may be readily discriminated from each other by mere inspection only. This, at least, is emphatically true in relation to the negroes, to the Indians of North America, and the European white people." *Id.* at 141.

74. Schnoor v. Meinicke, 40 N.W.2d 803 (N.D. 1950); *cf.* People v. Kielczewski, 269 Ill. 293, 109 N.E. 981 (1915).

75. Stewart v. Everts, 76 Wis. 35, 44 N.W. 1092 (1890); Walker v. Ontario, 118 Wis. 564, 95 N.W. 1086 (1903).

76. In State v. Linkhow, 69 N.C. 214, 215 (1873), defendant was charged with singing a hymn in such a manner as to disturb a religious congregation. A witness who was asked to describe his singing "imitated it by singing a verse in the voice and manner of defendant, 'which produced a burst of prolonged and irresistible laughter, convulsing alike the spectators, the Bar, the jury and the Court.'" In Berbarry v. Tombacher, 162 N.C. 497, 499, 77 S.E. 412, 413 (1913), there was some controversy as to whether plaintiff bought from defendant cassimere or serge or cotton suits. Plaintiff was permitted to exhibit to the jury suits of the three kinds, "and to show the difference in quality." The court held that this was "merely to illustrate the difference in texture and quality of different sorts" and that it was competent for that purpose. In the first of these cases, therefore, a series of events was admitted in lieu of a verbal description by the witness of defendant's conduct; and in the second, things were admitted in order to supplement the witness' description of them. But the result was real proof either of the first or of the second type. That is to say that the offer of a thing or event in lieu of or to supplement a verbal description is an offer of the thing or event so that a jury can observe one or more of its sensible qualities or the thing itself as a sensible object. But in such cases and only in such cases it makes sense to say that the purpose of exhibiting a thing or event to a jury is to enable it the better to understand and the more intelligently to apply the testimony of the witnesses. See note 66, *supra*.

We shall subsequently see that the admissibility of a thing depends in the first instance upon the perceptual purpose for which it is offered; the condition of admissibility which we have called the epistemic condition is that a jury shall be able to accomplish the specific perceptual purpose for which a thing is offered. But we are now concerned, not with problems of admissibility, but with differences in the types of real proof which occur when things are admitted for different perceptual purposes. In what follows we shall therefore assume that whatever the perceptual purpose for which a thing was offered, it was admissible; and we shall distinguish among perceptual purposes only for the sake of analyzing the different types of real proof. The reader must be reminded that whatever the perceptual purpose for which a thing is offered, to admit the thing for that purpose is necessarily to admit a proposition of real evidence, an immediate singular proposition which is the jury's direct knowledge of the thing, and which is of the form "This appears to the jury to be such and such."[77] But "such and such" in this formula can, as we have just seen, refer either to a kind of sensible quality or to a kind of sensible object. There are thus variants of this form.

A. Real Proof of The First Type: The Wholly Sensible Quality

Real proof of this type occurs when a thing[78] is admitted so that a jury can observe a sensible quality of the thing. It is clear that a quality of a thing cannot be offered or admitted independently of the thing which it qualifies. Only a thing can be offered or admitted, although it can be offered and admitted for different perceptual purposes. It necessarily follows that a jury's direct knowledge of a sensible quality of a thing is not separable actually from its direct knowledge of a thing as a sensible object. But these two sorts of knowledge of a thing can and must be separated analytically in order to recognize and understand the differences in the problems presented by the different types of real proof. For the time being, therefore, we shall ignore that a thing, offered and admitted so that a jury can observe one or more of its sensible qualities, may be named by the offer or known by the jury as a sensible object of a certain sort. In order to do this, we shall refer to the thing as "this" and disregard the kind of thing "this" may be, apparently or actually. "This" will accordingly denote a particular thing.

There are various ways of classifying sensible qualities, but differences among them are not significant for our analysis because our problem is primarily to distinguish between sensible and non-sensible qualities and

77. See note 89, *infra*.
78. Or an event. See notes 18 and 64, *supra*.

between sensible qualities and ambiguous characteristics. We shall be content, therefore, to present the classification which happens to be the ancient and traditional analysis of the sensibles. There are two divisions.

(1) The sensibles are either proper or common,[79] according as they can be sensed by one and only one or by two or more of the senses. Thus, colors and odors and tones are proper sensibles because qualities of each of these sorts can be sensed by one and by only one sense, by vision, olfaction and audition, respectively. In contrast, size and shape and number and motion are common sensibles because qualities of each of these sorts can be sensed by two or more senses. Thus, shape can be sensed by sight and touch. In the adjudicated cases we find both proper and common sensibles named by the perceptual purposes for which things have been admitted. In *Sampson v. St. Louis & San Francisco R.R.*,[80] the jurors were permitted to touch plaintiff's hand in order to feel it as cold; in *McAndrews v. Leonard*,[81] to touch parts of plaintiff's skull in order to feel them as hard or soft; and in *Martin v. Shell Petroleum Corp.*,[82] to taste the distillate of certain water in order to sense it as salty. All of these qualities are proper sensibles; temperature, hardness and softness can be sensed only by the cutaneous, and flavor, only by the gustatory sense. In *Woodward & Lothrop v. Heed*[83] the jury was permitted to inspect a fur coat in order to determine whether the fur was "worn off or was matted down"; in *Louisville & N. R.R. v. Jackson's Adm'r*,[84] to inspect a horseshoe to determine whether or not it was bent; and in *Close v. Samm*,[85] to "view" the water below a dam, to determine whether or not and in what direction it was flowing. "Being matted" and "being bent" are common sensibles, sorts of shapes which can be sensed by sight or by touch. So is motion a common sensible, a quality which can be sensed by sight, by touch or by ear.

(2) The sensibles are either simple or complex.[86] A simple sensible quality is one which can be sensed by one or more *specific* organs of sense; it

79. The distinction between proper and common sensibles is traditional throughout the history of psychology, though made in different terms. See ARISTOTLE, DE ANIMA. bk. III, c. 1; ST. THOMAS AQUINAS, SUMMA THEOLOGICA, First Part, Q. LXXVIII. A 3, Reply; LOCKE, ESSAY CONCERNING HUMAN UNDERSTANDING, bk, II, c. 8, Sec. 9. Locke makes the distinction between proper and common sensibles in terms of the difference between secondary and primary qualities.

80. 156 Mo. App. 419, 138 S.W. 98 (1911).

81. 99 Vt. 512, 134 Atl. 710 (1926).

82. 133 Kan. 124, 299 Pac. 261 (1931).

83. 44 A.2d 369 (D.C. Mun. App. 1945). "Worn" names an ambiguous characteristic.

84. 250 Ky. 92, 61 S.W.2d 1104 (1933).

85. 27 Iowa 503 (1869).

86. This distinction between simple and complex sensibles is also traditional, though made in different terms. See LOCKE, *op. cit., supra* note 79, bk. II, c. 12, Sec. 1, and WUNDT, OUTLINES OF PSYCHOLOGY, pt. II, § 8 (3d rev. Eng. ed. 1907). For a general review of the analysis of sensation which correlates psychology and physiology, see E. G. BORING, THE PHYSICAL DIMENSIONS OF CONSCIOUSNESS (1933).

may be a proper or a common sensible. A complex sensible quality is one which, as far as we know, cannot be sensed by *any* specific sense organ. The distinction between simple and complex sensibles is a more difficult one than that between proper and common sensibles; it depends on the precision of the physiological analysis of the sense organs and their specific receptivities. This can be illustrated by the consideration of such qualities as "wet" and "rough." The physiology of the cutaneous senses has discovered only four specific receptivities in the cells of epithelial tissue, both cutaneous and sub-cutaneous: (1) the sense of warmth; (2) the sense of cold; (3) the sense of pressure; and (4) the sense of pain. There is no sense organ which is receptive specifically of the qualities we call "wet" and "rough"; yet there is no question that these are sensible qualities. Physiological research shows that each of them is a combination of sensible qualities of the cutaneous variety. Psychological analysis shows that this combination is not a mere summation of simple sensibles but a pattern or configuration of them; wetness and roughness are gestalts[87] in the cutaneous fields of sensibility.[88]

As we shall see, it is sometimes difficult to distinguish complex qualities which are *totally* sensible, that is, which are sensory gestalts, from ambiguous characteristics, those complex qualities the complexity of which is constituted by a combination of sensible and non-sensible qualities. For the present it suffices to say that it is only when a thing is admitted so that a jury can observe one of its wholly sensible qualities that real proof of the first type occurs, and that it occurs whether the wholly sensible quality is proper or common, simple or complex.

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87. The concept of a *gestalt* or pattern of sensibles is an extremely important correction of the error in psychological analysis, beginning with Locke's Essay and running through modern psychology, which is the treatment of the complex sensible as a *mere summation* of simples. For the general statement of this criticism see W. KOHLER, GESTALT PSYCHOLOGY (1929), particularly c. 3. The correction of the modern analysis of sensation made recently by *gestalttheorie* is in conformity with the ancient traditions of the analysis of sensation.

88. But these complex sensibles or sensory gestalts are frequently not in a single sensory field. Thus, most of the qualities we commonly refer to as tastes are neither simple taste qualities nor gustatory gestalts, if by the latter we mean combinations of nothing but gustatory qualities. We speak of something as having a "gritty taste"; the simple qualities that constitute this sensible pattern are both gustatory and tactual and, perhaps, also kinaesthetic. This raises a problem with respect to the complex sensibles. Are they to be classified according as their constituent elements are either in a single sensory field or in more than one sensory field? "Roughness" might thus be classified as one sort of complex sensible if it is a pattern of pressure sensations, whereas "grittiness" would be of another sort. Further, are complex sensibles to be distinguished as proper and common, and by the same criterion that simple sensibles are thus distinguished? The quality we call "wet" is a pattern in the cutaneous field and also a pattern in the visual field; we can feel or see whether a thing is wet. And if we push this analysis further, we may be forced to conclude that all of the common sensibles, such as shape and motion, are also complex sensibles; thus the shape of a thing may be either a tactual or a visual gestalt. But final answers to these questions are not, as we shall see, prerequisite to the solution of the basic problem of admissibility when a thing is offered so that a jury can observe one of its sensible qualities.

§ 1. *The Proposition of Real Evidence*

What precisely is the nature of the knowledge which a jury acquires when it observes a sensible quality of a thing? Or, to put the same question differently, what precisely is the nature of the propositions of real evidence which are employed as probantia in the first type of real proof?

We can answer this question by supposing that this is exhibited to a jury so that the jurors can observe it as having the color called "red," and by considering how in an ordinary language, such as English, the jurors could express correctly the knowledge which they obtained by looking at this for that purpose.[89] The color of a thing is one of its sensible qualities; it is a visible quality and, hence, can be known directly. If the jurors were asked to express their knowledge, they would probably say "This is red,"[90] but if they did so, they would not be expressing it correctly,[91] for their knowledge would be perceptual knowledge and a sentence of that sort expresses inferential knowledge.[92] The jurors could properly say only *"We see* this as red" or "This *is for us* red" or "This *appears to us* to be red." It would be indifferent which of these sentences they used, for each would express their perceptual knowledge of this; they would express the same proposition.[93] Nevertheless, for the sake of uniformity we shall always use a sentence of the form "This appears to me to be red"[94] to express perceptual knowledge of the quality of a thing.[95]

89. It will be remembered that a proposition is expressed by a declarative sentence or by what amounts to the same thing, the answer to a theoretical question expressed by Yes or No, and also that a proposition is not identical with the sentence by which it is expressed. (See notes 6, 40, *supra.*) *Cf.* Hiller v. Johnson, 162 Wis. 19, 22-23, 154 N.W. 845, 846 (1915): "Plaintiff claimed an injury to his shoulder joint, and he was permitted, over the objections of defendants, to raise his arm up and down before the jury for the purpose of demonstrating to them that crepitation resulted evidencing an injured or imperfect joint. While so doing the following occurred: Plaintiff's counsel to a juror: 'Do you hear that?' Juror: 'There is a slight noise there.' Plaintiff's counsel to another juror: 'Put your ear to his arm.' Juror: 'Yes.' Plaintiff's counsel to the jury: 'Do you hear it?' Jury: 'Yes.'"

90. Real inferences are usually made habitually and, therefore, unconsciously. See Hiller v. Johnson, *supra,* note 89.

91. Unless, of course, "for us, the jury" is understood by reason of the context in which the sentence is uttered. For the sake of analytical clarity, we shall never use the word "is" when we mean "is for the jury" or any other observer.

92. As we have said and as we shall subsequently show, a sentence of this sort expresses the proximate probandum of a step of real proof.

93. In short, the words "is for us" are equivalent in meaning to the words "appears to us" and both sets of words are equivalent in this context to the words "we see," although these last have a reference usually restricted to visible appearances. Primarily, and in the strictest sense, the direct knowledge of the jurors is knowledge about themselves, their knowledge that they see this as red. It is only secondarily knowledge about this which they see as red.

94. While "I see this as red" more precisely indicates the nature of the knowledge which is being expressed, the advantage of this formulation is that the meaning of the word "appears" is not restricted to any particular field of sensitivity.

95. As we have pointed out, such knowledge is possible only of sensible objects and of sensible qualities. We shall later discuss singular propositions which are not immediate, which are expressed by sentences of the form "This *is* red" rather than of the form "This *appears* to the jury as red." It is enough at the moment to say that while

This formulation reveals that both that which is observed and the observer are elements of perceptual knowledge and, hence, that the content of a sentence of this form can be changed merely by changing the name of what is said to be apparent and of him to whom it is said to be apparent. But in trials by jury it is the jurors who are the observers of the evidence. Consequently, we are justified in saying that in the first type of real proof propositions of real evidence are expressed by sentences of the form "This appears to the jury to have a quality of a certain sort."

We can now understand the elements of such propositions. Sentences by which they are expressed contain two singular references, a reference to the particular thing which is the exhibit and a reference to the particular observers of the thing who are the jurors; but they also contain a universal reference to a kind of sensible quality of which a particular instance is apparent. That is to say that such propositions have singular terms as their subjects and universal terms as their predicates;[95a] and this marks them as singular propositions.[96] The universal term is a concept or idea, an abstraction

such propositions always formulate indirect rather than direct knowledge, it may be either indirect knowledge of that which can be known directly or indirect knowledge of that which cannot be known directly but only indirectly.

95a. A term is the logical representation of an idea or concept, as a proposition is the logical representation of a judgment. The distinction between singular and universal terms is based upon the distinction between singular and non-singular entities, between particular things and their particular attributes and kinds of things and kinds of attributes. A particular is an individual considered as an instance of a kind or as a member of a class, that is, as one of an indefinite number of individuals which have an attribute in common; an attribute is that which two or more individuals can possess and with respect to which they can be said to be of the same kind or class. A singular term is thus a particular, and, as we have said, is symbolized by a proper name or definite descriptive phrase. (See note 42, *supra.*) A universal term, on the other hand, is a kind or class or an attribute which determines a kind or class; it represents an idea or concept, that is, what we understand of any thing when we understand it. An idea is universal in the sense that it is abstracted from individuality. The idea signified by the word "man" does not bring before us any man in particular; it leaves out of account all of the individual conditions which distinguish one man from another; and, hence, while remaining the same the idea can be applied to the most dissimilar men. As we have said, a universal term is signified by a common name or an indefinite descriptive phrase. (See note 42, *supra.*) The distinction between subject and predicate is based upon the distinction between that which can be classified or characterized and that which is a classification or characterization. A subject is that which can be classified or characterized. It follows that a singular term can be only a subject, and that a universal term and only a universal term can be a predicate. But since one class may include or exclude another class, totally or partially, a universal term can also be a subject. See note 25, *supra.*

96. All immediate singular propositions are of the form "This—is characterized as—appearing to be such and such." A strict subject-predicate analysis would require us to distinguish at least two propositions which are expressed conjunctively by such sentences as "I see this as red" and "This appears to me to be red": (1) A proposition in which the subject is the observer and the predicate a kind of observation, thus "I—am characterized as—seeing something as red"; and (2) a proposition in which the subject is the thing observed and the predicate is a kind of sensible quality, thus "This—is characterized as—appearing to someone to be red." (See note 93, *supra.*) It should be noted that the conjunction of these propositions is expressed by each of the sentences stated above; it is for that reason that they are equivalent as sentences. For simplicity in subsequent discussion, and because it is sufficiently precise for our analytical purposes, we shall not hereafter distinguish the propositions which are expressed conjunctively by

from the data of sense.[97] A jury not only sees this particular instance of the color red, it not only has that sensation, but it also understands the particular visible quality as an instance of redness. This throws additional light upon the nature of perceptual knowledge. As we have just suggested, a sensible quality of a thing can be perceived only by those who not only can sense it but who also understand it. That is to say that perceptual knowledge has both a sensational and an intellectual component[98] and that a person wholly lacking in ideas can no more acquire perceptual knowledge than a person wholly lacking in sensitivity. It is to say also that persons who understand a specific thing or a specific quality of a thing differently will perceive it differently. In the supposititious case that we have been discussing this was exhibited to a jury so that the jurors could observe a particular instance of a visible quality of this, the color called "red." We think that it will be agreed that this quality will be apparent to different observers in the same way only if they understand it in the same way, and that if they understand it in the same way they will observe it in the same way, whatever it is called.[99] What a specific sensible quality is called is therefore important only because the perceptual purpose for which a thing is offered must be generally and uniformly intelligible to the tribunal, to both judge and jury; and this will be the case only if the quality is named not only by a common name but also by one which is unambiguous in the sense that it is commonly used by men of ordinary linguistic habits with a uniformity sufficient for all the practical purposes of unambiguous communication. And it will not be such a name unless it has substantially the same connotation for such men.[100]

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such sentences. We shall treat them as expressing a single proposition of the form "This—is characterized as—appearing to the jury to be red." Nor shall we distinguish between a proposition of that form and the sentence by which it is signified.

97. See note 95a, *supra*. The abstraction must, of course, be prior in time to the knowledge of which it is an element; in other words, we must understand redness before we can make the judgment that this appears to us as red. We are not saying that we must *understand* red before we can *see* red; rather the reverse is true, that is, we must see red before we can understand what redness is. But "seeing red" is not knowledge; it is merely the having of a sensation, and we can sense qualities before we can actually understand them as qualities of a specific kind. In short, the word "red" names a particular sensation and a kind of quality, and the proposition "This appears to me as red" is sensitive knowledge in which there are both sensational and intellectual components. See ST. THOMAS AQUINAS, SUMMA THEOLOGICA, pt. I, Q. LXXXIV, A. 6, 7, 8 and Q. LXXXV, A. 1, 2.

98. If the knowledge were purely intellectual, it would be a general proposition and would contain no references to particular things or qualities as these are known by sense, but only to kinds of things or qualities, thus "To be red is to be visible."

99. It is the same apparent color whether it is called "red" or "rot" or "rouge"; it would be the same apparent color even to an English-speaking person who, through ignorance of the vocabulary or mischeviously, called it "blue."

100. In other words, the name of the quality in question must have substantially the same meaning for ordinary men; and it will, only if it evokes the same concept in the minds of all of them. The name of a quality, or of anything else, is unambiguous and commonly intelligible to two men when its significance for both of them is substantially the same conception of that which is named. We shall, therefore, use the phrase "common concept" to refer to that which must be present in the minds of two or more men if they are to use a word unambiguously and with common understanding of its meaning. As

An immediate singular proposition is thus seen to be direct knowledge of particular things and of their qualities, immediate knowledge that a thing appears to be of a certain sort or to possess a quality of a certain sort. But how can such a proposition be asserted?

If it is said that a thing appeared to someone to have a certain quality, the assertoric value[101] of the proposition so expressed depends upon who is asserting it. Thus, if we, the authors, say, "This page appears to you, the reader, to be white," we are not reporting an observation of ours. We cannot observe the event of a thing's appearing to you to have a certain quality.[102] We can observe this page as white; we can know that both you and we are men of ordinary linguistic habits, normal sensitivity and common understanding; and we can therefore infer that if you look at this page under the same conditions that we did, you too will see it as white. Whether we say that this now appears or that this will appear to you to be white, the knowledge which we are expressing is indirect or inferential. In the same way, a judge's knowledge that a thing will appear to a jury to possess a certain quality is a matter of inference, but a juror's knowledge that the thing does appear to him to possess that quality is a matter of observation. In trials by jury, it is the jurors and not the judge who answer material issues. It is they who must acquire the knowledge needed to answer them by the exercise of their sensitive and rational powers. It is they who are to be instructed by the

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we shall see, whether or not the offer of a thing names a quality of which the jurors can reasonably be expected to have a common concept, can become an important consideration in determining the admissibility of the thing; this is, of course, a question of fact to be decided by the judge. We have chosen "red" in the supposititious case which we have been discussing because it so obviously involves a common concept. We shall return to this problem later in Part IIIA, in which we will discuss the epistemic condition of admissibility

101. All propositions are actually either true or false. A proposition is true if what it states to be the case *is* the case; it is false if what it states to be the case is *not* the case. Thus, the actual truth or falsity of a proposition can be determined only by reference to what is actually the case. The assertoric value of a proposition is the value which we assign to it in the light of our knowledge. But our knowledge is always expressed in propositions; consequently, we cannot make a direct comparison of what is the case in some respect and our knowledge of what is the case in that respect. The assertion of a proposition is a psychological act; it is an act of judgment constituting knowledge. We may be either certain or dubious in our judgment, according as our knowledge is adequate or inadequate. Thus, depending upon the state of our knowledge we can assert a proposition as certainly true or false or as probably true or false. Just as the assertion of a proposition as true or false is a judgment of certainty, so the assertion of a proposition as probable is a judgment of doubt; the extent of the doubt is indicated by the degree of probability which the proposition is asserted as possessing. In short, probability is the opposite not of truth or falsity but of certainty; and, just as propositions have only two actual values, truth and falsity, so they have only two assertoric values, certainty and probability. And while the actual value of a proposition is determined only by reference to what is actually the case, its assertoric value is determined by reference to the state of our knowledge about what is actually the case. See notes 23, 43, *supra; TIF,* 1249, 1254.

102. As Vaughan, C.J., said in Bushell's Case, Vaugh. 135, 148, 124 Eng. Rep. 1006, 1013 (C.P. 1670), "A man cannot see by anothers eye, nor hear by anothers ear, no more can a man conclude or inferr the thing to be resolv'd by anothers understanding or reasoning; . . . "

evidence and proofs. It is they, therefore, who acquire and possess the knowledge formulated by evidential propositions. But to possess the knowledge is to assert the propositions. Accordingly, it is jurors and not judges who assert propositions of real evidence, propositions of the form "This appears to the jury to be such and such"; and it is for that reason that such propositions can be asserted as true.[103] Not only are they knowledge possessed by the jurors but they are the kind of knowledge which cannot be probable. To put the matter differently, that a proposition of real evidence cannot be probable follows from its being an immediate proposition.[104] An immediate proposition is indemonstrable, and since the probability of a proposition is always relative to the probabilities of other propositions which are probative of it, an immediate proposition cannot be probable; a proposition which cannot be proved by other propositions cannot be probable.[105] The proposition "This appears to the jury to be red," asserted by the jurors, is for them indemonstrable and, hence, not probable. This can be simply understood as follows: You, the reader, know directly that you do or do not see this page as white; no propositions can possibly be adduced to prove to you either that you do or do not.[106]

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103. See note 101, *supra.* We know, of course that this is not a *description* of the behavior of juries. We know that only rarely does a jury consciously assert a proposition of real evidence as true and then infer its proximate probandum. (See note 90, *supra.)* But that does not affect the validity of our analysis because, even though no jury ever asserted a proposition of real evidence, a jury's perceptual knowledge of an exhibit is necessarily such a proposition, and to possess the knowledge is to assert the proposition.

104. See note 101, *supra.*

105. This does not mean that propositions which *can* be proved by other propositions can never be asserted as true. If their premises can be asserted as true, they can be asserted as true, but if one of their premises can be asserted only as probable they can be asserted only as probable. See note 101, *supra.*

106. In short, your knowledge is adequate and, hence, you can be certain in your judgment. But it should be noticed that in the statement attributed to you, you do not say that this *is* red, but rather that it *appears to you* as red, that you see it as red. The singular proposition "This appears to me to be red" is the kind of knowledge that has been traditionally called a sensitive intuition; it is immediate in the same sense that axioms, which are intellectual intuitions, are immediate and indemonstrable general propositions. For this analysis of immediate propositions as sensitive and intellectual intuitions, see ARISTOTLE, NICHOMACHEAN ETHICS, bk. VI, cc. 6, 11; and POSTERIOR ANALYTICS, bk. II, c. 19; LOCKE, ESSAY CONCERNING HUMAN UNDERSTANDING, bk. IV, cc. 2, 11; and WILLIAM JAMES, PRINCIPLES OF PSYCHOLOGY, c. 28 (1890). For the analysis of sensitive judgments, see also Kant's distinction between judgments of perception and judgments of experience in his PROLEGOMENA TO ANY FUTURE METAPHYSICS, pt. II, §§ 18, 19 and 20. *Cf.* CHIEF BARON GILBERT, EVIDENCE 2, 3 (1795 ed.): "All certainty is a clear and distinct perception: and all clear and distinct perceptions depend upon a man's own proper senses: Thus, this in the first place is certain, and that which we cannot doubt of it if we would, that one perception or idea is not another; . . . and when perceptions are thus distinguished upon the first view, it is called self evidence, or intuitive knowledge. . . . Now most of the business of civil life subsists on actions of men that are transient things, and therefore often times are not capable of strict demonstration; which, as I said, is founded on the view of our senses: and therefore the rights of men must be determined by probability. Now, as all demonstration is founded on the view of a man's own proper senses by a gradation of clear and distinct perceptions, so all probability is founded upon views "partially, or in some degree," obscure and indistinct, or upon report from the sight of others."

It may nevertheless be objected that although immediate singular propositions cannot be asserted as probable, they can be asserted either as true or as false, and hence that their assertion as true may be incorrect. There are only two ways in which the statement "I see this as red" can be false. (1) The speaker may be lying, that is, he may be telling you that he sees as red what he knows he sees as orange. But he cannot be mistaken as to what he knows himself as seeing; if he did not know the truth privately he could not lie socially. One cannot lie to oneself about one's own sensitive intuitions.[107] We need not take account of this possible aberration. For although jurors can lie socially by giving answers to material issues which involve a denial of their perceptual knowledge of evidence, the analytical point which we have made is nevertheless valid. Consequently, our analysis of the problems of real proof can ignore the possibility of such prevarication by a jury. (2) The other way in which the statement can be thought of as false is not genuinely a case of falsity, but rather a case of ambiguous communication. Thus, if you misuse the common name "red" to name what you see as blue, you are not lying if you say that you see it as red. It is true that you do see it as "red" in your peculiar use of that word, although anyone else will be misled if he understands that you see it as "red" in the *common* use of that word. But since, as we will see, a thing should not be exhibited to jurors so that they can observe one of its qualities unless the quality is named by an unambiguous name,[108] this possible aberration can also be disregarded. Even if a judge committed an error in this respect the proposition of real evidence would not become probable.

We can conclude, therefore, that propositions of real evidence of the form "This appears to the jury to have a quality of a certain sort" have the status in a trial of propositions which can be and are asserted as true.

§ 2. *The Evidential Hypothesis*

A jury can never decide a material issue by asserting a proposition of real evidence.[109] This is to say (1) that a proposition of real evidence is never a material proposition and (2) that at least one step of proof must follow upon its assertion, a step of proof in which it is employed as a probans. That the first of these two statements is true follows from the nature of materiality. It can never be *legally* significant, although it may be *logically*

107. Hence, when a person says to you that he sees this as red, you can assert as probable the proposition 'He sees this as red' on the basis of his assertion as true of 'I see this as red'; but only as probable because you can never know that it is true that he is not lying. Your knowledge in that respect is necessarily inadequate.

108. For the sense in which the word unambiguous is here used, see pp. 371-76, 373 n.100, *supra*.

109. See p. 358, *supra*.

significant, that during the trial of a material issue a jury perceives something in a certain way, that a thing *appears* to the jury to have a quality of a certain sort, although it may be legally significant that it *has* a qualtiy of that sort. It is for that reason that material propositions are always demonstrable, and never immediate, singular propositions. The truth of the second of these statements is involved in the truth of the first, and is understood as soon as the nature of an evidential proposition is understood. In a single litigious controversy a singular proposition can have a dual status: It can be both a material proposition and an evidential proposition, that is, a proposition which can be employed in the proof of some other material proposition. If a proposition is an evidential proposition it must be used probatively, whether or not it is also a material proposition. But since a proposition of real evidence is never a material proposition, its status can only be that of an evidential proposition, which is to say that it is admitted because and so that it can be used in proving a material proposition. It is for that reason that, as we have said, whenever a thing is admitted as evidence not only is a proposition of real evidence admitted but at least one step of proof occurs in which this proposition is employed probatively. This step will almost always[110] be a step of real proof, which is characteristically different from a step of testimonial or of circumstantial proof, and it requires further analysis.

For the sake of simplicity, let us assume a case in which the proximate probandum of a step of real proof of the first type is also an ultimate probandum, a material proposition which has been denied. The proximate probandum of a proposition of the form "This appears to the jury to have such and such a quality" is always a proposition of the form "This has such and such a quality"; in the case we have been supposing it is "This is red." But "This is red" cannot be inferred from "This appears to the jury to be red" except in the context of an evidential hypothesis, a general proposition with which the proposition of real evidence must be conjoined[111] as a premise.[112] The indispensable general proposition can be expressed in various ways: "Appearing to a jury to be red implies being red" or "To appear to a jury to be red is to be red" or "If a thing appears to a jury to be red, it is red." This example indicates that the general propositions which can be employed as evidential hypotheses in real proof of the first type are of the form "If a thing appears to a jury to have a sensible quality of a certain

110. We do not say "always" because, as we have seen, a proposition of real evidence is capable of being employed as a probans in a step of circumstantial proof.

111. "Conjunction" is the relation of any two propositions by "and"; just as "is" symbolizes the relation of predication (see note 95, *supra*), so "and" symbolizes the relation of conjunction. But "and" does not here have an additive connotation; it means neither alone but both together. It is thus seen to be a material and not a formal relation between propositions.

112. For a fuller understanding of the formal conditions of the validity of a step of real proof, see *TIF*, 1271 *et seq.*

sort, it has a quality of that sort." A proposition of that form, conjoined with a proposition of the form "This appears to the jury to have a sensible quality of a certain sort," yields a proposition of the form "This has a sensible quality of that sort." But although a step of proof is not valid unless its premises formally yield its conclusion, the satisfaction of the logical conditions of formally valid inference does not by itself accomplish a step of proof. An inference is not actually accomplished until premises are asserted as the basis for the assertion of a conclusion.[113]

We have seen that an admitted proposition of real evidence, one of the premises of a step of real proof, can be and is asserted as true because it is a jury's perceptual knowledge. But what is the basis for the assertion of the other premise, the evidential hypothesis, and how can it be asserted? In order to answer these questions we must state more explicitly the form of the general propositions which can be employed as evidential hypotheses in this type of real proof; and this requires us to interpret the proximate probandum of such a real inference.

What does it mean to say that this has a quality of a certain sort? What, for example, does it mean to say that this is red? If redness is a kind of sensible quality, then to be red is to be capable of being sensed as red by some sensitive animal. Redness is thus the potentiality of a quality to be sensed as red; this potentiality is actualized when the quality appears to someone to be red. To say that this appears to a jury to be red is to say that the jury actually perceives this as red, that this has *for the jury* that sensible quality. We shall use the words "apparent" and "non-apparent" to qualify the phrase "sensible quality," according as we wish to indicate that such a quality has or has not actually been perceived by someone.[114] We can summarize what we have just said in this way: The non-apparent being, the being *in itself,* of a sensible quality, is its potentiality of appearing to be; its apparent being, its being *for sensitive animals,* is the actuality of its appearing to them to be.

But what we have said indicates that "This is red" means more than that this has the potentiality of being perceived as red; it indicates that its meaning must include a reference to the kind of animal which, by perceiving this, has actualized the potentiality. If this appears to some human being to be red, it has the potentiality of so appearing to other human beings. But

113. See p. 355, *supra,* and *TIF,* 1272-73.

114. Only sensible qualities can be either apparent or non-apparent. If a thing has qualities which are not sensible, they do not have the potentiality of being sensed and, hence, can never be apparent. Thus, the physical property of a thing which is called density is not a sensible quality of it and hence can never be apparent; but sensible qualities may either be apparent or non-apparent. Thus, the color of a thing in a dark room is a non-apparent sensible quality of it under that condition.

men differ, absolutely or in degree, with respect to their linguistic habits, their sensitive powers, the range of their understanding, and the conditions under which they make observations of various sorts; and consideration of these differences suggests further qualifications of the inference. Men differ, for example, with respect to the sensitive power called "vision." If this appears to be red to normal eyes, the inference that this is red means that this has the potentiality of appearing to be red to normal eyes; but if this appears to be grey to color-blind eyes, it cannot be inferred that this is grey in the sense that it has the potentiality of appearing to be grey to normal eyes. Moreover, just as the normality of the sensitive powers is involved in the inference and restricts the meaning of its conclusion, so the character of the conditions of observation affects the inference and the meaning of its conclusion. If under certain conditions of illumination this appears to us to be red, the conclusion that this is red must be interpreted to mean that under similar conditions of illumination it has the potentiality of so appearing to similarly constituted individuals. In brief, the proximate probandum of a real inference of the first type cannot be interpreted except in terms of the conditions of observation and the character of the observers. "This is red" always means that this has the potentiality of appearing to be red to someone under some conditions, but to whom and under what conditions? We can answer these questions only if we know the character of the person who perceived this as red and the conditions under which he did so.

A thing is offered during the trial of a material issue so that the jurors can observe a sensible quality of the thing; it is they by whom the quality's potentiality of appearing to be a quality of a certain sort is to be actualized. But jurors are or, in any case, are presumed to be men of ordinary linguistic habits,[115] normal sensitive powers[116] and common experience;[117] and, as we

115. BUSCH, LAW AND TACTICS IN JURY TRIALS § 58 (1949): "Speaking generally, [the qualifications which jurors are required to possess] relate to age, . . . ability to read, write, speak or understand the English language, mental capacity, possession of one's 'natural faculties' (or 'health' or 'having no bodily infirmity'). . . ." As to the ability to communicate and to receive communications in English, see, for example, State v. Pratt, 114 Kan. 660, 220 Pac. 505 (1923); Sullenger v. State, 79 Tex. Cr. 98, 182 S.W. 140 (1910). See also BUSCH, *op cit. supra* § 96.

116. BUSCH, *op. cit. supra* note 115, § 97: "Impairment of the faculties of sight and hearing to such a degree as to seriously interfere with a person's seeing and hearing the participants in a trial . . . are grounds for a challenge for cause." As to the sense of sight, see Rhodes v. State, 128 Ind. 189, 27 N.E. 866 (1891); State v. Norman, 135 Iowa 483, 113 N.W. 340 (1907); Guthrie v. State, 87 Okla. Cr. 112, 127, 194 P.2d 895 (1948). As to the sense of hearing, see Higgins v. Commonwealth, 287 Ky. 767, 155 S.W.2d 209 (1941); State v. Reed, 206 La. 143, 19 So.2d 28 (1944); Lindsey v. State, 189 Tenn. 355, 225 S.W.2d. 533, 15 A.L.R.2d 527 (1949); Black v. Continental Casualty Co., 9 S.W.2d 743 (Tex. Civ. App. 1928); *Ex parte* Lovelady, 152 Tex. Cr. 93, 207 S.W.2d 396 (1948).

In Rhodes v. State, *supra*, the court said: "One of the jurors made affidavit that his eyesight was so defective that he was unable 'to distinguish one from another of the faces of the witnesses; that he did not see the face of the defendant; and that he did not see the expressions of the witnesses testifying, nor observe their deportment

shall see, a thing is inadmissible unless it is offered for a perceptual purpose which can be accomplished by such persons under the observational conditions which a trial can provide. If a thing is offered so that jurors can observe one of its qualities, it is inadmissible unless the quality named by the offer is not only a sensible quality but a kind of sensible quality which can be apparent to men like jurors, that is, men of ordinary linguistic habits, normal sensitive powers and common understanding, and unless it can be exhibited to them under appropriate conditions of observation.[118] It follows that the meaning which must be assigned to "This is red," as the proximate probandum of a step of real proof, is that under appropriate conditions of observation this has the potentiality of appearing to men of ordinary linguistic habits, normal sensitive powers and common understanding to be red. It follows also that, stated fully, the form of the general propositions which can serve as evidential hypotheses in the first type of real proof is "If under appropriate conditions of observation a thing appears to men of ordinary linguistic habits, normal sensitive powers and common understanding to possess a sensible quality of a certain sort,[119] it has a quality of that sort"

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or demeanor.' We think that the juror was not competent to sit, even in cases where the testimony consists entirely of the statements of the witnesses. Again and again have verdicts been allowed to stand because of the effect declared to be exerted by the demeanor and deportment of witnessses; and, surely, no one who can not see the expression of faces, nor observe deportment and demeanor, can justly weigh testimony. But in this instance various articles were placed before the jury, and used as illustrative of the testimony, none of which were seen by the juror. Clearly, his unfortunate infirmity incapacitated him from properly observing the evidence." 128 Ind. at 196-97, 27 N.E. at 868.

Cf. Blume, *Jury Selection Analyzed*, 42 MICH. L. REV. 831 (1944): "In order to render efficient jury service, a juror should be able to see clearly, hear clearly, and speak with sufficient clarity to make himself understood. He should . . . be free from every bodily condition likely to impair the quality of his thinking. Beyond these simple requirements physical qualifications need not go." This overlooks that jurors often have to observe evidence not only by seeing and hearing it, but also by smelling, tasting or touching it. See, for example, Enyart v. People, 70 Colo. 362, 201 Pac. 564 (1921); Martin v. Shell Petroleum Corp., 133 Kan. 124, 299 Pac. 261 (1931); Sampson v. St. Louis & San Francisco Ry., 156 Mo. App. 419, 138 S.W. 98 (1911); McAndrews v. Leonard, 99 Vt. 512, 134 Atl. 710 (1926). *Cf.* Gex, *Real Evidence in Mississippi*, 17 MISS. L. J. 180 (1945): "The presentation of [real evidence] is a mode of enabling the court to reach a conclusion through the *sense* of actual sight, hearing, or taste. Some argument has been raised as to whether the senses of smell and feel may properly be used in the process of determining what is real evidence, and this question has never been definitely settled."

117. In Mathews v. Caldwell, 5 Ga. App. 336, 339, 63 S.E. 250, 252 (1908), the court said: "Jurors are chosen, not only for uprightness, but also for intelligence. They are supposed to bring into the box, as a part of that intelligence, experience and a knowledge of the common things of life. They are supposed to know what a pistol is and what it is designed for. Presumably they are qualified to look at this mechanical contrivance and to say whether it is a firearm or not." See also BUSCH *op. cit. supra*, note 115, §§ 58, 96; *Ex parte* Lovelady, *supra* note 116.

118. The conditions of admissibility of things offered as evidence, and especially the epistemic condition, are nowhere explicitly formulated as we formulate them, but that they are the conditions of admissibility is apparent from the rulings of the courts upon questions of admissibility. These we will discuss in Part III.

119. If the judge has ruled correctly upon the question of admissibility, the quality will be of a sort which such men can sense and which they understand.

(in the sense that under similar conditions of observation it has the potentiality of so appearing to similar men).

A general proposition can be asserted and employed as an evidential hypothesis during the trial of a material issue, either as the result of its being proved or as the result of its being judicially noticed; whether as the result of the one or the other will usually depend upon whether it is special or common knowledge.[120] It is, we think, obvious that propositions of the form which we have just stated are common knowledge; consequently, they are always judicially noticed. But they are uncertain rather than certain knowledge. Our incertitude arises from the inclusion in them of the words "appropriate," "ordinary," "normal," "common," and "similar." Such words signify either a mean in a graded distribution of degrees (that is, more or less appropriate, more or less ordinary, and so on) or an ideal that can only be approximated. As used in the evidential hypotheses of real proof, they signify the former, averages representing groups of similar conditions and of similarly constituted men.[121] If they were not imprecise in this way, then these general propositions could be asserted as true. For, in that event, the subsequent clause—"it has that quality"—of such propositions would have to be interpreted to mean "it has the potentiality of so appearing to identical men under identical conditions." So interpreted, such propositions would be true self-evidently; in the best sense of the word they would be tautological. But they cannot be so interpreted. It is common knowledge that no two men are precisely alike in sensitivity and understanding and that no two observations can be made under precisely the same conditions. At the most, observers and conditions of observation can be more or less alike; and

120. If the knowledge formulated by a general proposition is special knowledge, it will be possessed only by men of special experience, that is, by specialists or experts. [*Cf.* Mathews v. Caldwell, 5 Ga. App. 336, 339, 63 S.E. 250, 252 (1908): "Expert and opinion evidence is useful only where the juror's range of personal intelligence, so far as some particular branch of knowledge is concerned, fails to reach. . . ."] The chief function of the expert witness is to impart to juries, composed of men of common experience, the generalized, specialized experience, formulated by general propositions, which they need in order to be able to make circumstantial inferences. Frequently, if not usually, the expert will himself make the inference and his testimony will take the form of the singular proposition which is the conclusion of the inference, rather than of the general proposition which is the special knowledge which he used as one of his premises. But even in such a case he is reporting that knowledge to the jury implicitly. In many, if not in most, such cases the juries could themselves perform the inferences if they were provided with the necessary evidential hypotheses. Indeed, it is only when casuistry, which is the art of applying generalities to concrete cases, is needed in order to make the inferences, that the expert must make them for the jury; in such cases he must function as casuist as well as specialist. In those jurisdictions which recognize the exception to the hearsay rule which Wigmore calls the exception for learned treatises (see 6 WIGMORE §§ 1691-1700), a general proposition which is special knowledge can be asserted as the result of a step of hearsay testimonial proof, but it is obviously a step of expert testimonial proof nevertheless. Moreover, to some extent judges judicially notice general propositions which are special knowledge. These qualifications of the statement in the text will be elaborated in subsequent articles on judicial notice and testimonial proof.

121. See the cases cited in notes 115-17, *supra*.

therefore we cannot avoid the imprecision involved in the application of the concepts of appropriateness, ordinariness, normality, commonness and similarity to particular conditions and to particular men.

The fact is that the evidential hypotheses of real proof are empirical generalizations and as such can never be asserted as more than probable, no matter how high the degree of probability.[122] We know as the result of common experience that we are sometimes deceived by the appearances of things; that they are not always as they appear to us to be; that they appear to us differently at different times and in different circumstances; and that they appear differently to different men even in the same circumstances. It is this knowldge which informs us that it is only probable that this is red if under suitable conditions it appears to men of normal sensory capacity and common understanding to be red. But although it can be asserted only as probable, it can be asserted as *highly* probable[123] that if under appropriate conditions of observation a thing appears to men of ordinary linguistic habits, normal sensitive powers and common understanding to have a quality of a certain sort, it has a quality of that sort in the sense that it has the potentiality of so appearing to similar men under similar conditions. The high probability of propositions of that form is due, in the first place, to the linguistic, sensory and intellectual capacities that jurors are required or pre-

122. In one sense, all generalizations from experience can be called "empirical"; but in the theory of induction, which is the process of generalizing from particular experiences, we customarily distinguish between those products of induction that can be asserted as true and those that can be asserted only as probable. (See note 101, *supra.)* The latter are usually called "empirical generalizations"; the former are usually called axioms or self-evident truths. Axioms or self-evident truths, as the names indicate, are immediate propositions that need no proof; indeed, they cannot be proved. For example, that a physical whole is greater than any of its physical parts, is an axiom or self-evident truth; it cannot be proved. Empirieal or probable generalizations, on the other hand, are said to be capable of and to need inductive proof because, without it, their probability cannot be ascertained. Yet, although a probable proposition, unlike an axiom, can be proved, it is not the case that all the highly probable empirical generalizations on which men rely, are established by a process of inductive proof, or have their probability determined in the light of the evidence that would have to be marshalled in order to make such a proof. Many are assumed to be highly probable; they are asserted by assumption rather than by proof; their high probability is assumed rather than calculated in the light of particular instances. Their assumption is not incompatible with their being inductively proved; nor does it mean the total absence of relevant knowledge of particulars, but only that this relevant knowledge is not organized into a set of probative propositions and used in a formally valid process of proof. Nevertheless, it is possible to state the conditions under which men of sound judgment can and do *assume* empirical generalizations to be highly probable. Aristotle formulated those conditions in a manner that is strikingly pertinent to the circumstances of judicial notice and of expert testimonial proof. A general proposition can be assumed as highly probable, he tells us, "if it is probable to all, or to most men, or to the wise, either to all or to most or to the most expert, provided it is not contrary to common opinion; for anyone would admit what is held by the wise, so long as it is not contrary to the opinions of most men" (TOPICS, bk. I, c. 10, 104a 8-12).

123. We cannot here explain the degrees of probability, beyond saying that a proposition is highly probable if it is more probable than its contradictory, and very highly probable if it is much more probable than its contradictory. See *TIF,* 1284 *et seq.,* particularly nn.93, 97.

sumed to possess and to the manner in which juries are formed.[124] It is due, in the second place, to the epistemic condition of the admissibility of a thing, the condition that the jurors be capable of accomplishing the perceptual purpose for which the thing is offered. The factors which the judge must consider in determining the question of admissibility,—whether the quality named by the offer is one which men of ordinary linguistic habits, normal sensitive powers and common experience can sense and understand, and whether the thing can be exhibited to the jurors under appropriate conditions of observation,—are the very factors which make such propositions highly probable.

§ 3. *The Proximate Probandum*

We have seen that the conclusion of a step of real proof of the first type is a singular proposition of the form "This has a quality of a certain sort," by which is meant that this has the potentiality of appearing under appropriate conditions of observation to men of ordinary linguistic habits, normal sensitive powers and common understanding to have a quality of that sort. We have also seen that before it is proved it is a demonstrable proposition, and that after it is proved it is an inferred or derived proposition which, if material to the controversy, is an ultimate probandum, and if not, an intermediate probandum and probans. Finally, we have seen that if it is a compound proposition it can be used as an evidential proposition in either a step of testimonial proof or in a step of circumstantial proof, but that if it is a simple proposition it can be used as an evidential proposition only in a step of circumstantial proof. It remains only to ask what its assertoric value is.

Although one of its probantia, the proposition of real evidence, can be asserted as true, the probandum itself can be asserted only as probable because the other of its probantia, the evidential hypothesis, can be asserted only as probable. But it can always be asserted as highly probable. The probability of the probandum of a step of proof of any sort, real, testimonial or circumstantial, is determined in part by its own prior or antecedent probability, and in part by the probability of the conjunction of propositions that are its probantia.[125] When we discuss the probative force of real proof,[126] we

124. Here we have especially in mind the qualifications which jurors are required to possess, the *voir dire* examination of members of the panel, and challenges for cause.

125. The assertoric value of a conjunction of propositions is the product of the assertoric values of the propositions comprising the conjunction. (1) If the conjunction contains only two propositions and if each of them can be asserted as true and if we let the number 1 represent the assertoric value of truth, then the conjunction will have the assertoric value of 1, signifying certitude. (See note 101, *supra.)* (2), If, however, one of propositions which are the proximate prabantia of the probandum of a step of real proof tbe proposition "This appears to the jury to be red" the probantia of the proposition "This is red" include the following evidential propositions: (1) "The conditions under bility, then the conjunction can be asserted only as probable but the degree of its probability will be the same as that of its probable component. (3) But if both propo-

shall explain how the probability of the conclusion of a real inference is calculated. We shall then see that whatever its antecedent probability, the probandum of a step of real proof of the first type can be asserted as highly probable because the conjunction of probantia by which it is proved consists of an evidential proposition which can be asserted as true and of an evidential hypothesis which can be asserted as highly probable.[127]

There are, however, additional factors which influence its probability, the number of the jurors and the independence of their observations. Assuming a jury of twelve, what is meant when it is said that this appeared to the jury to be red, is that it so appeared to each of the twelve jurors. If one person sees this as red, it is probable that it is red, that is, that it has the potentiality of appearing to other persons to be red. This probability is increased if two persons independently see this as red, because each provides a test of the appropriateness of the conditions under which the other observed this, of the normality of his vision, and of the extent of his understanding. And if twelve persons independently see this as red, it becomes much more probable that they are a fair sampling of the adult population with respect to visual power and understanding, and hence much more probable that under similar conditions similar members of the population will see this as red or, in other words, that this is red.[128]

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sitions can be asserted only as probable, not only can the conjunction be asserted only as probable, but the degree of its probability will necessarily be less than that of either of its components, since the product of two fractional values is always less than that of either of its factors.

126. As we shall, in Part IV.

127. It is arguable that in addition to the proposition of real evidence the conjunction of proposition which are the proximate probantia of the probandum of a step of real proof of the first type includes other evidential propositions. For example, if a thing is exhibited to a jury so that they can and they do observe it as red, it is arguable that in addition to the proposition "This appears to the jury to be red" the probantia of the proposition "This is red" include the following evidential propositions: (1) "The conditions under which the jury observed this were appropriate to the observation of the color of this", (2) "The linguistic habits of the jurors are ordinary"; (3) "The vision of the jurors is normal"; and (4) "The jurors possess common understanding." But we do not think so. These are demonstrable singular propositions which, if proved, could be asserted only as probable to some degree, but during the course of the trial of a material issue they need not be proved and may not be disproved. For the purposes of the trial the appropriateness of the conditions of observation is conclusively established by the judge's ruling upon the question of admissibility, and the empanelling of the jury forecloses all questions regarding the qualifications of the jurors. Whether the conditions of observation were appropriate and whether any of the jurors was disqualified are questions which may be raised only upon a motion for a new trial or upon an appeal. See, for example, Nuchols v. Commonwealth, 312 Ky. 171, 226 S.W.2d 796, 13 A.L.R.2d 1478 (1950); Lindsey v. State, 189 Tenn. 355, 225 S.W.2d 533, 15 A.L.R.2d 527 (1949); and the annotations to those cases in 13 A.L.R.2d 1482 (1950) and 15 *id.* 534 (1951).

128. It is possible that the observations of the jurors may not be uniform. If only a few observe this differently from the rest, the discrepancy can be taken to mean that in the selection of the jury some individuals were chosen who had sensory or other disabilities. But if there is general disagreement among the jurors, it is most readily explained by an error on the part of the judge in permitting the jurors to observe what he should have known such men cannot observe. He must have incorrectly judged their capacity to accomplish the perceptual purpose of the offer.