

专家证言的概念性挑战

[美] 罗纳德·J·艾伦 著 汪诸豪 译*

【摘要】本文重点考察了专家知识与案件审理模式之间的关系。总体而言，案件审理是一种教育性活动，其间，事实认定者应能够理解、处理和思考证据，并得出理性的结论。这一过程反映了审理中准确事实认定的根本重要性，若没有准确的事实认定，权利和义务便是空谈。专家证据通常涉及一种遵从性而非教育性的诉讼程序模式，从这一点上来说其有悖于常规的审判理想状态。本文讨论了这一发展过程、其形成原因及其后果。若要实现审判的理想状态，那么替代性措施（即所有证据应以教育性模式呈现）则更为优越。如果证据无法以此种方式（教育性模式）呈现，那么在审理过程中通过证据所展现的待证事项便无法与常规的审判理想状态保持一致。

【关键词】专家证言；事实认定准确性；遵从模式；教育模式；审判的理想状态

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【Abstract】The relationship between expert knowledge and the trial pattern is examined. In general, trials are educational events in which the fact finder is expected to comprehend, process, and reflect on the evidence, and to reach rational conclusions as a result. This process reflects the fundamental importance of the accuracy of fact finding at trial, without which rights and obligations are essentially meaningless. Expert evidence often involves a deferential rather than an educational mode of proceeding and to that extent can be in opposition to the normal aspirations of trials. This article discusses the development process, forming reason and its consequences. The alternative is advanced that all evidence should be presented in an educational mode if the aspirations of trials are to be realized. If evidence cannot be presented in such a pattern, then the matter to which the evidence is pertinent plausibly cannot be litigated consistent with the normal aspirations of trials.

【Key Words】expert testimony, factual accuracy, deferential mode, educational mode, aspirations of trials

每次回到中国与学生们相聚，看到他们所取得成绩，我都会倍感欣慰。正如我今天所要谈的，学习证据法和诉讼法的你们对于中国的持续发展而言至关重要。本文的主题关于专家证言的概念性

* 罗纳德·J·艾伦：美国西北大学约翰·亨利·威格莫尔特座教授，中国政法大学证据科学研究院外国专家咨询委员会主席，诉讼法研究院研究员。感谢西北大学法学院学生蒋雨佳对我研究的帮助。

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挑战。这个议题本身很重要,因为如果不能理解专家证言所引发的问题,你们就无法很好地运用这项规则。但同时这意味着你们必须要深入地思考法律制度的本质,以及专家证言会如何推进或者挑战法律制度的理想状态。我将尝试对所有这些问题以某种系统的方式进行讨论。

各国法律中关于法律争议解决的信息都有着相对复杂的分类法。举例来说,美国证据法涉及科学、技术及其他专业知识。¹《联邦证据规则》进一步增加了这个问题的复杂性,明确规定了专家资格的各种要求,其中包括通过任何方式所获得的“知识、技能、经验、训练或教育有助于案件事实认定者理解证据或决定某项事实争点”。²如果上述条件中有一或多项得以满足,在依据相关行业标准行事的前提下,专家便可在法庭上就案件中争点发表自己的意见或评论。

相较于《联邦证据规则》在认识论上的复杂性(因为不胜枚举的知识类型或关乎争议的解决),实际操作中的复杂性有过之而无不及。巨大的资源耗费在了分析和评断一份显然无法穷尽的专业知识类型清单上,用于判断专家证言的可采性,并确保专家的确会基于某种知识作证。如果满足了条件,专家便可出庭作证,但事实上却不被要求要以其专业知识作证。比如说,专家亦可基于有关案件关键主张上的知识来提供意见。³然而,对方的专家证人也可以这么做——并且在一般情况下,如果没有反方专家证人,也就没有了诉讼的争点。因此,在将巨大的精力耗费在规制诉讼中的专家证言后,事实裁判者也许会发现自己所面对的是两种截然相反的专家意见,且其关乎于超出一般事实认定者认知范畴的问题。

刚才的描述有许多非常规之处,揭示了不同类型的知识之间存在着显著的差异,而一旦其被认定符合了专家证人可对所擅长专业领域与案件争点间联系发表看法之标准后,这些差异是可以为了诉讼目的通过对证据的内在分析而予以调和的。我认为,这种描述是怪异的,因为上述每一个命题都有问题,且总体来看,尽管其合乎传统,却与诉讼的核心目标背道而驰。为了证实我的观点,我将首先对诉讼的核心目标进行界定,然后会分析规制专家证人的传统方法会给此诉讼目标造成的遗憾影响,最后会提出一个替代性解决方案。我将在下文中对此三点依次进行讨论。

自由法律制度的理性状态

关于诉讼的目的尚存争议,尤其是在那些拥有陪审团制度的司法体系中(陪审团制度或造成了违法事实裁决可能性的上升)。⁴但可以肯定的是,缺少了合理准确的事实认定,诉讼便毫无意义。岂止是毫无意义,其是对自由社会基石的践踏。为那些忽视准确事实认定重要性的诉讼所进行的辩解都受一种错误认知的影响。这种错误的认知认为启蒙运动中的根本政治观点,以及西方政府所赖以存在的根本要件,都与权利和义务有着某种重要联系。从孟德斯鸠到卢梭,法学界盛行着对政治哲学家的讨论。诉讼确实与此有关,其是众多权利——譬如辩解、对质以及反对的权利——得以行使的工具。在拥有陪审团的国家,个人可以通过诉诸于陪审团的良知和人道主义精神来直接对抗政府。

显然,权利和义务至关重要且必不可少,但仅仅停留在权利义务上是不够的。启蒙运动对法律制度更为基本的贡献在于认识论上的革新,以经验性知识取代了教条性知识。其改变了人们对知识的认识。在过去,知识被认为是关于宗教和政治权威的学说,而启蒙运动让人们逐渐接受了内心之外的世界可以通过证据来客观认识。⁵毫不夸张的说,若没有准确的事实认定,权利和义务便失去了意义;因此,可以说现代西方文明最为重要的组成部分即是准确的事实认定。请注意我这里所说的是“现代西方文明”。关于中国的经验我会在下文中进行讨论。

¹ 美国《联邦证据规则》702。

² 美国《联邦证据规则》702。

³ 美国《联邦证据规则》702, 703。

⁴ 参见:罗伯特·伯恩斯,《审判的理论》(1999年)。

⁵ 对于启蒙运动的介绍,请见《斯坦福哲学百科》,详见:<http://plato.stanford.edu/entries/enlightenment>。

事实上,即便是“陪审团否弃权”概念在脱离了准确事实认定的情形下也会变得毫无意义;否弃权是准确事实裁决规则的一种例外情况。⁶更深层次而言,无论考察哪一种权利,人们都会很容易发现权利是附生在其认识论基础上的。请考虑在西方一项曾经并且仍然是最为根本的权利——财产权。为了让讨论更加生动,就以你手中的手机为例。你对手机的所有权赋予了你“权利”去拥有、使用、并处置该财产。但现在假设我走向你,夺走了你所谓是属于你的手机并拒绝归还,并声称该手机为我所有。你会怎么做?你会去找那些拥有裁决权的人,譬如法官或者陪审团,然后你会怎么做?要求归还你的手机?那样行不通,因为我自然也会声称该手机属于我。你会出示有关你是如何得到这部手机的证据,提供来自于手机公司的发票或者账单,以证明这部手机与你(而非我)相关。然后你也许会开机演示手机中各种内容,譬如手机中保存着的那些发送给你而非我的短信或邮件,以便说服理性人这部手机的确属于你而非我。

若能成功证明这些事实,裁决者将会切实赋予你拥有、使用和处置该部手机的权利——将其归还至你手中,同时施加于我相应的义务。但此处的关键在于,财产权完全依附于认定了什么样的事实,并且是事实认定的连锁反应。这一点的重要性毋庸置疑,并且颠覆了传统概念上事实与权利二者的关系。事实决定权利和义务。决断事实的人决定着权利的内涵与外延,无论是财产权还是生命权。

一种潜在的怀疑观点认为——即使事实认定确如我所讨论的那般重要,将其称之为现代自由民主之基石是不是有些夸大其辞了?我想说这非但毫不夸张,而且西方民主的成功正是与这样的司法安排有着紧密关联。将法律与真实的世界紧密联系在一起会将权利和义务锚定于可知事物之上,并且摆脱了冲动和反复无常。享用财产的权利并不取决于易犯错误的人类所拥有的慈悲、情绪或偏见。你无需受到他人的特殊照顾以便以你认为最好的方式去拥有房子、享受假期或培养孩子。这些权利植根于任何人内心世界之外的客观存在,并且正如伟大的启蒙运动认识论所预言的那样,⁷这一点可以通过不依赖于任何个人思想而存在的证据予以高度规律性的证明。

除了确定权利所有者,将权利系于事实之上也使得人们能够围绕着权利在许多不同且重要的方面进行谈判。植根于事实中的权利为所有者与其他人提供了清晰的界定,将权利在法律上的潜力与限制告知于每个人。基于这种认识,人们可以做出选择并将更有保障地来安排生活。同等重要的是,权利的事实基础保障使得其下市场的出现成为可能——权利可以通过市场经济所认可的各种方式转让出去——这让世界上那些恪守该原则的国家在财富上取得了惊人的增长。

当然,有时候证据会缺失,有时候错误难以避免,但在通常情况下,世界在向前发展的过程中总能留下一些蛛丝马迹,可以用来重建过去——足以用于当前案件审理中的过去构建。这就是为什么尽管诉讼的数量越来越多,现代社会却仍运转得很好。这就是为什么你可以购买并预期享用商品,比如手机或者房子。这就是为什么在任何尊重我上述所谈基本概念的国家,你可以合理地预期不会受到来自政府的干涉。这就是为什么绝大多数时候生活是有章可循的而不随机。这也就是为什么相关性和实质性的概念对于一个自由法律系统的构建而言具有根本性的重要意义。⁸这二者将法律系统附着于事实准确性的基石上,并随之生成如上所述的连锁反应。

基于我刚才所谈思路,请回顾中国过去发生的一段历史。西方观察家们从中国文革中得出的最直观推论是:当法律制度遭到破坏时,经济也会随之遭受毁灭性打击,而这正是当时真切发生的情况。随着70年代末和80年代初开始的经济改革,中国进入了一场天然的试验,事关强劲的经济在缺少有效法律体系保驾护航的情况下能否予以维持,结果显然是否定的。这也就是为什么今天的中国政府如此专注于建立诸如西方法治理念的原因。但是建立法治的前提是要认识到准确事实认定在司法裁判中的重要性。这也就是为什么我说正在对中国证据法快速发展做出贡献的你们正

⁶ 应注意陪审团虽然可以拒绝使用法律而赦免被告人,但同样也可以拒绝使用法律而认为被告人有罪。参见 托马斯·安德鲁·格林《根据良心来断案:英国刑事审判陪审团角度》,第1200-1800页(1988年)。

⁷ 参见脚注6。

⁸ 例如,参见《联邦证据规则》401,402和403。

是中国持续发展的关键组成部分。若没有你们正在开展的工作,中国的法律制度改革就会失去意义,并将无疾而终。因为,没有准确的事实认定就没有权利可言。⁹

总而言之,权利和义务取决于事实,并且只有在对实际、相关的事实情况了解的前提下,权利和义务才能系统地落实——这个结论无论在美国或中国都适用。至于法律系统如何规定事实认定,何种方法最为准确且/或有效,哪些政策考虑可以削减事实认定准确性的重要性,那都是可以存在合理分歧的领域。因此,在任何法律传统下要理解专家证据所带来的问题,就必须要先考量审判的基本概念以及其下知识构建的途径。接下来,我将描述我所最熟知的审判体系——英美模式。请允许我再快速重申一遍,尽管英美模式在一些方面有其独特性,知识对于权利的重要性则是普世的。我将在英美法传统的框架下详细地探讨该问题,但是正如我将在本文末尾中提及的——这个探究过程中所收获的经验教训具有普遍的意义。

从最直观的方面说,审判在英美传统中所解决的是社会争议。这些争议多为常规性的,而非高度复杂,因为社会本身便是如此。实际上,作为陪审团制度的发端,原始模式的审理是将那些通晓本地事物的人聚集在一起,请他们根据已有的知识和经验来对争议进行决断——而与传统相悖的观点却错误地认为现代陪审团事先必须要对诉讼相关的情况完全不知情。悬而未决的争议本身就是社区情况的一部分。更为重要的是,同样,为解决这些争议所必备的知识也是其中一部分。举例来说,许多争议涉及譬如道路权、地役权等当地惯例,意味着这些争议很有可能就是相关社区中人们茶余饭后的谈资。类似的,关于社区中某人对他人做了什么之类的情况也会在小范围内广为人知,加上对当地习俗的了解,共同构成了解决争端的基础。

然而,即便是在相对早期的发展阶段,偶尔也会有不涉及公众常识的案件,其中证人开始被传唤,但这更像是例外情况而非主流规则。随着社会的进化,尤其是经济的发展,问题变得越来越复杂,认知也开始被区分出更多层次。随着商业的发展,案件的审理开始走向专业化和规范化,比如说,需要提供关于当地习俗的证据。外语可能需要翻译,或者案件可能会涉及某些近似于外语的技术性词汇,必须要让那些没有相关专业知识的案件审理人设法理解。有趣的是,在陪审团日益剧增的政治影响力下,尽管这些复杂案件越来越普遍,英美法系统仍然遵循着传统意义上的事实认定模式。案件双方需要做的仅仅是稍加解释,以便事实认定者可以理解证人陈述,明智地裁决案件,但是说到底,案件事实仍然是需要本地人士不偏私地以常识来进行认定。

随着审判中开始引入证人制度,理想状态是事实认定者可以接触到每位证人的背景和经验,以便事实认定者清晰地理解证人证言。在对案件事实做出了最接近于真实发生的认定后,¹⁰ 责任义务便可以依法进行判定。因为天衣无缝地将证人与事实认定者的思想合二为一是不可能完成的任务,普通法系设计了一套方法来缩小这二者在思想上的差异,以便接近于达到合二为一的最佳状态。这正是证人意见规则的来源,即要求证人只对自己的观察进行作证,而不能给出其推论(意见)。“事实”与“意见”的区别在理论上非常难界定,¹¹ 但作为一项准则其给证人施加了压力,迫使证人尽可能地就自身感知作证,以便事实认定者能够身临其境般地去决断案件事实。同样,这也解释了为何交叉盘问规则会允许对证人证言形成的基础进行探究。

在诸多方面,这套规则实现了设计初衷,尽管也付出了一定的代价。通常而言,审判中各方(法官、陪审员、证人)会共享充分的背景信息,使得有效的交流和理解成为可能。交流与理解的可行性会随着案件审判成员规模的扩大而增长,因为每一个新增成员都会给审理团队评判证据带来自己的经验和知识。而另一方面,小规模的人员组成则具有更为精确的信息处理能力。总之,任何决策组织形式都伴随有相应的成本代价。

⁹ 参见:罗纳德·艾伦著,张保生、张月波译:“证据法的理论基础和意义”,载《证据科学》,2010年第4期。

¹⁰ 参见:罗纳德·J.艾伦,“司法证明的本质”,《卡多佐法律评论》第13期,第373页,1991年。

¹¹ 参见:罗纳德·J.艾伦、理查德·B.库恩斯、伊琳诺·斯威夫特、大卫·S.施瓦茨,《证据:文本、问题与案例》,第609至620页,第四版,2006年。

最终,证人与陪审员(证人与法官)被鲜明地进行了区分,而这在普通法审判发端之际并不存在。陪审员仅可根据审判中所呈现的证据(而非其个人知识)作出裁定。有人也许会质疑这样的描述在今天是否仍然准确,尤其是在美国这样充分运用陪审员审判的国家(传统媒体常常报道在一些案件中,尤其是那些臭名昭著的丑闻案件中,要找到预先不知情的陪审员是多么困难)。对于这种质疑,简短的回答是:传统上认为潜在陪审员必须要对案件(预先)不知情的观点是错误的。而这种传统观点错误的原因对于理解专家证言的概念性挑战至关重要。

从技术层面而言,传统观念的错误在于,对诉讼事件拥有知识并不意味着就失去了担任陪审员的资格;只有当这些知识会使得陪审员满足了作为证人的条件后其才会失去陪审员资格。¹²在更深层次且更为重要的意义上,传统观念认为陪审员必须要对案情不知情的观点也是错误的。正如我上文中提及的,认识到此错误对于理解专家证言的真正概念性挑战极为重要。一个必要的预备性概念要点是:事实认定者都是带着已有的知识体系、信念以及推理方式进入审判程序,而这恰恰是快捷、高效交流的前提。(在美国)只要每个人的英语都合格,除了例外情况,用词不需要进行定义。全体审判参与者都被假定已经悉知了关于现实本质与因果关系存在的传统信念,几乎从来不会是证据所证明的对象。每个人都被假定在进行有序推理,使用各种必要或合适的推理形式——演绎推理、归纳推理、回溯推理以及统计推理。通过某种共通的语言,或者必要的翻译,对证人的理解也被假定,同样被假定的还有对证据与审判之间联系的感知能力。每个人都被假定了解人证的弱点与潜在偏见的负面影响,并能够判断证言的可信性。相对而言,不那么广为人知的是,每个人都期望能够通过自身知识推论来填补审判中的证据性空白(这些证据性空白源自于诸多因素,包括个体证人所知道的事情却不一定能够完整表达出来)。

事实上,“证据”的准确概念不能简单地理解为就是审判中呈现的证人证言和展示件,而是还应当包括人与其所观察到情况之间的互动,此种互动将审判的“自我知会”本质推进到了更深的层次。我曾经对此做过如下总结:

假设某个证人开始作证,事实认定者必须要判断能从该证言中得出什么结论。相关的变量都有哪些呢?首先,有各种常规的可信性问题,但是要考虑到这些问题的复杂性。言谈举止不仅仅是表面化的举止行为,其背后是复杂的变量集合。证人在作证时是否有流汗或颤抖的状况?如果有的话,这是由于无辜的紧张?还是出于搪塞的压力?是药物作用?还是仅仅是在不幸的童年所养成的不良习惯?肢体语言是表明了真实情况还是一种逃避?无精打采是说谎的证据,还是说出真实情况的坦然表现?证人是否在直视检查官的眼睛?如果是的话,此种证据所表达的是值得称道的品格还是油腔滑调的自信呢?语调的起伏体现了正直的品格还是牵强附会的态度?牵强附会的声音所表明的是证人在捏造证言,还是一种对案件结果的顾虑呢?诸如此类。

相关变量的清单远超出了可信性的范畴,言谈举止仅是其中一项而已。当证人提出某种主张,事实认定者要判断该主张所要表达的是什么,以及事实认定者从中所得出的又是什么。这项任务也同样包含了大量的变量。此外,事实认定者基于自身观察会产生一些特定知识,先于证人所作陈述,例如从律师那里获取的知识。还有许多类似的例子。为了法律(以规则为基础方式)的执行,许多这些变量需要在演绎推理结构中以必要且充分的条件予以说明。然而我们不可能创造出这样的结构,因为其过于复杂了。¹³

事实认定者的重要属性并非是预先要对案件不知情,正如我们所见,那是不可能的。真正重要

¹²这是由《联邦证据规则》规则 606禁止陪审员作为证人所解释。

¹³罗纳德·艾伦,“事实的模糊性与证据理论”,《西北大学法律评论》第88期,第604页;第625至626页,1994年。道格拉斯·沃顿,《法律论证与证据》,第200页,2002年,此书论述了相似的法律证据分析。真实生活的复杂性是人工智能与法研究者所面临的中心问题,参见罗纳德·艾伦,“人工智能与证据过程:形式主义与计算的挑战”,《人工智能与法》第9期,第99页,2001年。早期关于人们可能对于证据所推导出事实持不同意见的哲学讨论,参见G.波利亚,《数学与似真推理:似真推论的型式》第二版,1954年。

的是事实认定者无私、公正的心态,能够以开放的心态全盘考虑证据。我所描述的这两方面可以合并为一个融贯的标准,其描绘了任何自由法律系统中最为深刻的愿景,即:将裁决权交给有能力、无偏私的事实认定者,由其对证据进行处理和审议以便对案件事实做出理性的判断,进而对当事人各方的权利和义务做出准确的判决。

专家证言相悖于审判的理想状态

当对证言的理解需要运用到事实认定者们所不具备的知识或技能时,事实认定者对于这种证人证言所欲表达之意的理解力就几乎为零,或至少无法有效地评估其所述内容之真伪性。我们现在接触到了专家证言所带来的核心概念性困境,而且对此只有两种可能的解决途径——要么必须以某种方式提供出必要的背景信息,要么事实认定者必须要遵从于他人的判断。此处“遵从”是指采纳他人的意见作为正确的意见,并非因为你对该意见表示理解或赞同,而仅仅是由于你将事实认定的决定权移交给了他人。通常,英美法系会选择要求以可理解的方式向事实认定者提供信息。如果证人说的是外语,那么将提供翻译。如涉及常规性商业操作或惯例,那么需要提供与该主题相关的证据以便事实认定者能够自行判断该常规操作或惯例的实际情况。要求证据与社区中一般成员的背景和经验相对接是一种近似于理想的审判模式。

专家证言的核心概念性问题在于其在审判中的应用常常有悖于审判的一般概念。专家们往往接受过多年的专业化训练,而这种经历反而可能会使其很难就审判中的相关争议对事实认定者进行教育。尽管有关专家证言的争议常见于可靠性方面的顾虑,但实际上的争议在于当证人以专家的身份作证时,事实认定者是否应直接遵从其意见而非采用传统性的教育模式。下文中将着重探讨解决这个问题。¹⁴

显然,首先要提出的问题是这种对专家证人的“遵从”是否为绝对必要?是否存在任何传统模型(教育模式)所不能兼容的情况?某些案件中所呈现的争议是否为事实认定者认知能力所不能企及的?应该来说,对于这些问题的回答都是否定的。事实认定者的缺陷并非源自其认知能力上的不足而是信息量的不足。法官和陪审员对许多事物都缺乏相关的知识,比如科学和技术领域,但是没有理由认为他们就不能充分掌握这些相关领域的知识。这并不意味着事实认定者非要成为诸如肿瘤学家、放射学家之类的专家。事实认定者无需全盘通晓特定专业领域的知识,反之,其目标在于掌握足够多的知识从而能够理性地对当前案件进行审议。从这个角度来说,多人组成的决策团队(陪审团或者由法官组成的合议庭)实际上优于个体的决策者。决策团队中的每一个成员无须都能深入地理解案件中的每一个争议。真正需要关心的问题在于决策团队作为一个整体是否充分理解了争议。如果一个案件的事实部分超出了从社会大众中即兴挑选出的决策团队认知能力,那将是令人震惊的,更何况法官和陪审团成员都是经过严格甄选的。

超出当前普通理解力的观念或领域的确是真实存在的。物理学中的许多概念在社会大众中的普及速度十分缓慢,甚至在科学家群体中也是如此。或许对于事实认定者而言,要求其学习狭义相对论或者量子理论实属过分,然而据我所知,这些理论都未曾切中过任何过往的诉讼。无可否认,物理学并非是唯一难以掌握的学科。很多人认为高等数学也难以掌握(或许这就是为何他们认为物理学很难)。微积分和概率论是高等数学领域中与现代审判有关的两个例子。尽管有人认为其很抽象,但其他人并不这么认为——更为重要的是,有些人不认为其抽象到了无法学习以便做出理智决策的程度。这恰恰又是多人决策团队的价值。正如我上文中所述,真正重要的不在于每个决策者是否都能理解,而是在于作为一个整体,决策团队是否拥有或者能够学习掌握做出理智决策所需要的知识。

¹⁴ “教育—服从”模式的区别由罗纳德·艾伦和约瑟夫 S. 米勒首先提出于“专家的普通法理论:服从还是教育”,《西北大学法律评论》第 87 期,第 1131 页,1993 年,以及罗纳德·艾伦,“专门知识与道伯特决策”,《刑法与犯罪学杂志》第 84 期,第 1157 页,1994 年。本文是这些论文的进一步补充。

对事实认定者进行教育的真实障碍并非在于其无法实现，而是这样做的代价过于昂贵。如果审判中涉及统计学，那么就不得不对其进行解释以便事实认定者能够理解，在某些案件中甚至需要耗费可观的资源。在医学等其他众多领域中同样也是如此。在某些案件中，这样的教育过程并非难以承受，但在另一些案件中，这种教育过程则异常困难并且需要大量指导。所以，综上所述，该教育过程十分昂贵，但在实际操作中我本人并没有遇到过无法（对事实认定者）进行教育的案件。

一个待思考的重要问题是，对事实认定者就“专家”证言基础进行教育的额外成本是否足以构成了我们放弃理想审判模式而以遵从模式取而代之的理由？这个问题反映出了关于专家证人证言之传统论述的不合理之处。在大量并不涉及科学或者技术问题的案件中，证人证言的提取亦需数月的时间。在我所熟知的西方法律系统中，此类案件审理中对证人并没有采用遵从模式；当事人双方都被要求以事实认定者可以理解的证据去证明案件事实。仅仅因为当事人一方所供证据被标榜为“专家证言”便要采用遵从模式诉讼程序，这是令人费解的。两类案件中的认知性问题的本质上是相同的，经济上的考量也是相同的。在所有案件中之于所有证人，提出主张的当事人一方应负责承担证人出庭作证及回应对方当事人提问的成本。就这一点而言，专家证人不具有特殊性。耗费在长年累月涉及放射学之审判中的公共补贴与耗费在长年累月证券诉讼中的公共补贴并没有实质区别。事实上，如果的确存在差异的话，这种差异反而有利于放射学公共补贴，因为与那些全然无用的证据相比，学习放射学还可能给事实认定者带来实实在在的收获。因此，反对教育事实认定者的“成本说”存在着自相矛盾之处。

解决方案

若要实现审判的理想状态，当事人就必须要在所有情形下对事实认定者进行教育。这样一来可以消除有关“专家”证言的法律问题，因为此分类将不复存在。这看起来像是在定义上做手脚来解决问题，其实不然；其所触及到的要深刻的多。伴随“遵从”模式审判的一个可悲结果就是：如果事实认定者选择遵从于所谓的专家，而该专家事实上并未基于专业知识作证而是在法庭上提供了在美国被称作是“垃圾科学”的信息，那么错误就会发生。当事实认定者不理解专家的证言基础时，垃圾科学和不可靠的专家就会引爆法律的信息性弱点。让所有的证人（包括所谓的专家证人）对其证言进行解释，将会在很大程度上消除这个问题，因为要对虚假主张进行清晰的解释是件极其困难的事情。我不是说弄虚作假没有了可能，而是这样一来呈现不可靠证据将会变得困难得多。

然而，这枚认识论的硬币还有其另一面。我所主张的事实认定者之主要限制来自于信息而非认知的观点也许存在缺陷；或许有一些案子中涉及法官和陪审团确实无法理解的严格意义上“知识”（真实合理的信念）。显然，现实中的确有一些与法律争议相关的，涉及诸多领域（如数学和医学）的专门性非常规知识。一旦存在这样的知识但在审判中却无法被传递理解，那么在任何一种强调由利益无涉个人来理性地处置分析证据之法律传统中，开展涉及这些知识的审判便会失去意义；这种理想的审理状态不可能发生在遵从专家证言的模式中。相反的做法是，如果审判涉及专业的知识形式但却无法在审理中予以表述的话，解决的办法就是不要去审这些案子。如果专业知识存在，并且能够以确定的方式进行表述（比如我们确定知道自己现在在中国），这种教育就值得在法庭上进行并作为定案的依据。然而，如何操作却是另一个问题，通常会是通过制定法律或规则来完成。

相比之下，毫不夸张地说，维持现在这种涉及到事实认定者无法理解之专门知识的审判模式没有意义。在案件审理中，双方当事人都会提供事实认定者可遵从的专家意见；而这些专家意见几乎总是截然相反的，倾向于各自的当事人方。如果不存在相反的意见，那就不会有可裁判的争议，拥有无懈可击（或是最少受到攻击的）专家的一方将会赢得审判。当专家们的意见不一致时，“遵从”模式中的事实认定者们不会将注意力集中在事实上，而仅仅会去决定该采纳哪一方专家的意见。现在，关键的问题是：在对相关领域缺乏了解的情况下，事实认定者又如何能明智地决定该遵从哪一方专家的意见呢？本质上来说，得以确认该相信哪一方专家的唯一途径就是：先充分地了解该领域，

再结合案件中的具体情况来评价专家意见。在对相关领域知识缺乏探究的情况下,事实认定者对于选择该遵从哪一方专家的判断就缺少了理性的基础。这一点贯穿于审判中对专业知识的使用,并强调了当前的专家证言形式是对英美法制度之最深层次愿景的背离。重申一下这种显然性:缺乏足够背景知识来通过证据得出正确推理的事实认定者(或其他任何人),无法就该选择遵从哪一方专家意见进行理智的判断。反之,如果事实认定者能够理智地判断该相信哪一方专家证人,那么对于专家意见的遵从也就没有必要了。在该种情况下,事实认定者能够自己理解专家的思路,即通过案件中所提供的证据,基于专门知识来得出最后的结论。

理性决策可能性的降低违背了审判的深层次愿景(即通过理性的思考以追求事实认定的准确性)。当然,这里面有着很重的讽刺意味。审判法官在不要求专家对观点进行解释的情况下就采纳不一致或相互矛盾的各种专家意见,其做法是不理性的。只有当事实认定者能够清楚地认识到一方专家意见为正确而另一方为错误时,其才能做出理性的决定。但如此一来,法官就会仅采纳一方专家的意见,同时排除另一方专家意见。如果理性人在究竟哪方专家是正确的问题上存有合理分歧,那么就说明他们能够理解其背后的争议,这样一来,遵从模式也就没必要了。另需注意的是,证据相关性原则的条件限制在遵从模式下也会大打折扣。通常来说,在当事人一方解释证据相关性的过程中需要将证据与事实认定者的理解进行充分对接。但是,在对证言基础缺乏理解的情况下这是不可能做到的。

还有一种说法称:从分析的角度来说,遵从和教育并没有区别,而只是同一个范畴的两极;原始数据几乎从来不会在庭审中出现(偶尔会在法庭上进行演示,但是这种情况极其罕见);在决定一位证人是否真实作证时,都需要一定意义上的“遵从”。但在我看来,即便遵从和教育都是普遍存在的变量,其是能够以不同程度进行呈现的。请比较听闻感官经历证据(“被告打了原告”)和做出推理(“根据这些研究,我认为吸烟会导致癌症”)。关键的变量在于事实认定者是否能够理解证人从观察到得出结论之间的推理过程。如果没有此等理解,那么就不可能理性地评价证据。在有专家证人出席的场合,人们往往不会期待其推理过程能够被普通人所理解。因此,人们往往无法通过行使自身判断力来决定接受或排除一项专家意见,在这一点上,可以说,对专家证人的遵从有别于决定是否要相信外行证人的遵从。

总而言之,处理专家证据的方法仅有两种,再退一步说,处理证据的方法只有两种。第一种就是把专家证言作为一般证言对待,即采纳专家证言的前提须为事实认定者能够对其理解。要理解专家证言,则需要对事实认定者就相关事项进行教育。困难之处在于成本,尤其是,高昂的成本可能会使得判决的结果倾向于拥有更多资源的一方当事人。因为一方当事人越是贫穷,则越没有能力向事实认定者提供必要的教育,或回应对方当事人的主张。该问题也反映出了美国法律体系的一个缺陷,即未能实现当事人真正承担本方在案件中的成本费用,尤其是对方就本方主张进行回应的费用。若不能转嫁成本,则更富有的当事人一方可将诉讼的成本费用故意推高,致使对方当事人无法承受。采用常规方法来对待专家证言,会因涉及到专业知识而致使案件审理拖延,进而加剧上述问题。¹⁵然而,该方法保持了由利益无涉的个人来处理 and 考量证据,并以此做出决定。

另一种替代方法就是遵从模式:事实认定者可以被要求选定信任一位专家,即便其并没有能力理性地做出这样的选择;或者,政府可以明确决定一个结果。审判中采用遵从模式的唯一可能优点在于费用开支的降低,但是随之而来的是非理性决策几率的上升。

通过制定法律或规则等确定性政府方案,处置专家证言的决定权与事实认定者相脱离,转而有希望交给那些真正有能力理性决策的人,并可提高决策的一致性。如果对于专业知识的判断是正确的,那么最终判决的准确率也能够相应提高。但此种模式有两处缺陷:第一,该模式视官方的说法

¹⁵尽管这一问题太复杂现在难以深究,为了部分抵消这方面的因素,提高诉讼费用是一个值得赞赏的做法,或者采取同样值得赞赏但更为经济一些的讨论会方式。如何在这些问题中寻求平衡是现代法律制度的最大挑战之一。

为真理，但什么能够保证官方的答案就一定是正确的呢？诉讼的优点之一就在于其允许人们在某一时刻对各种信念的真实性进行反复的考量。如果存在官方的结论且该结论是错误的话，决策的结果仍然会具有一致性，但却会是一直错下去。当然，诉讼的这种优点只有在教育模式而非遵从模式中才能得以体现。

也许有人会认为我所叙述的并非是一个真正的问题。在美国，关于对抗制和社会争议私了化的强调使得当事人可以自主选择是否要教育事实认定者或是转而说服他们去遵从专家的意见。（这个问题由当事人双方自行决定，而仅将证据可采性的决定权留给法官。）当事人双方比其他任何人都更清楚他们自己的争议及所掌握的资源，并且处于做出优化其自身利益选择的最佳位置。然而，需要指出的是，遵从模式通过引入功能性成本转嫁，加剧了成本费用问题。如果审判法官采纳了一方当事人的专家证言并且该方当事人仅展示了专家的结论或者意见，那么事实上对这些专家结论或意见进行解释的成本费用将会转嫁给另一方当事人。这会增加对方的交易成本，并加剧（诉讼中的）策略性博弈，破坏当事人承担自身费用这一诉讼基本原则。

以上我在试图说明，专家证言的使用对于任何司法审判体系来说都是根本性的挑战。这也在一定程度上解释了为什么当专家证言在审判中的应用更为普遍时，相关争议也日益增多。潜藏其中的是当前涉及到专家之诸多操作中所遭遇尴尬的问题：理性的思考在审判中究竟有多重要？在何种程度上人们可以期待事实认定者会倾听、处理、仔细思量证据，并依据对事实的真实认定来裁定合法权利和义务？任何专注于权利和义务的体制均暗示或明示地采用了这种司法模式。事实上，这也正是本文开头所述，强调事实认定的准确性对于所有专注于法治的体系都具有根本重要性。在某种程度上，无法应对所有困难的深层次原因（即对专家证言所采取遵从模式与审判的理想状态之间不兼容）加剧了有关专家证言的争议。接下来我将会就这一点展开讨论，但在此之前还是要先带大家来感受一下过度依赖教条式的知识论断是个多么严重的问题。请考虑下列美国案件审理中曾被习惯性采纳的证据，其后都被陆续证实要么存在问题、要么高度不可信：

- 摇晃婴儿综合症——是否存在有效的标记可以将无辜的婴儿猝死症和虐待行为区分开来？
- 笔迹分析——这个领域存在真正的专家吗？专家们自己对笔迹的判断均可保持一致吗？
- 指纹分析——其独特性从未经受过实践的检验，专家的准确性也从来没有被认证过。
- 危险预测——不可靠、未经证实的精神病证言把人送入监狱遭受长期监禁。
- 被压抑的记忆——同样，不可靠、未经证实的精神病证言把人送入监狱遭受长期监禁。
- 毛发和纤维分析已被证明是不可靠的。
- 对疾病起因的鉴定——往往是不可靠的
- 硅对自体免疫系统的有害影响——完全错误
- 纵火调查使用了完全不可信的方法论
- 数十年来，显示吸烟会引发癌症的科学证据已被禁止使用

美国的经验表明，在对待专家证言的问题上出现了严重的谬误。¹⁶ 我认为其主要问题在于：美国法律忽视了专家证言中的核心概念性问题。美国法律一直在尝试对专家证言的遵从模式进行修补以求对其完善，而没有直接正面地去处理问题。修修补补的动力是可以理解的。许多专门性知识在解决争议时非常有用。但是，即便其并非无法被事实认定者所理解，也常常会带来认识上的挑战和困难。如果能够正确处理好遵从模式的问题，我们就可以低成本且高效地将专家知识引入审判，从而提高裁决的准确性。

然而，正如上文所举例子表明的，对于遵从模式的修补并没有很成功。也许有人会认为这是由于“科学性”知识与普通外行人知识之间的不兼容性，但这并非是造成困难的真正原因。不同形式

¹⁶为了系统地讨论有关科学证据和法律的问题，参见美国国家科学院，国家研究委员会《加强美国法庭科学之路》（2009年）。

的知识之间并不存在所谓的不兼容性,仅存在是或者不是知识的界分。诚然,在很多已知领域内对知识的探究只是概然性的,但确实会以普通和专业的形式出现。许多“科学性”知识是高度复杂的,然而,日常生活也是如此——事实上,常规的生活比任何专业知识体系都要复杂。科学的进步就在于对可以研究的事物进行简化和学习。¹⁷ 科学探究与诉讼最大的区别就在于法律体系无法为了等待知识的精进而延迟做出判决——总是在做出偏向于某一方当事人利益的判决——但是这一点对于在审判中应用专家证据而言不存在程序性的影响。

在我看来,美国法律体系在引入专家证言问题上的挣扎,很大程度上是由于忽视了审判中遵从和教育模式之间的不兼容性,而非科学性知识与其它形式知识之间的不兼容性。这一点对世界上许多其他法律系统也有教育意义,尤其是对中国而言。美国专家证言采纳的一系列测试标准在中国也受到了广泛的探讨,如弗莱伊案和多伯特案测试标准。然而,在审判中使用专家证据所带来的概念性挑战方面,我还没有在中国见到任何相关的讨论,目前对其重要性的理解也还不够。¹⁸ 中国的法院和法学家有待于去探究专家证言的概念性基础及其困境。如果不这么做,你们便无法明智地决定该如何最优化专家证据的使用,也无法去评价作为解决方案的弗莱伊案或者多伯特案之优劣。事实上,正如我接下来要展示的,这两个案件判决都不能算是好的解决办法。相较于弗莱伊案标准而言,多伯特案标准稍好一些,但也是在回避而非解决了最核心的问题。在中国,你们不应仅停留在探讨这些途径的优劣性上,或是否有其它更好的途径。你们应当紧扣中国法律体系的概念性基础,并追问处理专家证言的各种不同模式如何才能与中国法律体系之理想状态相协调。所以,在此我的主要观点就是,美国所使用的两种主要测试标准均未能很好地解决专家证言与法律体系理想状态之间的冲突。这对中国来说是种警示。

弗莱伊案和多伯特案测试标准在中国都有很高的知名度,所以有关其内容的介绍我就尽量简短一些,而用更多的时间来解释其缺陷。众所周知,在美国,对科学证据的系统化处理始于弗莱伊诉合众国案。该案中,辩方试图引入某种早期型号测谎仪所做的测试结果作为证据——某种血压收缩压测试。在维持审判法院对证据的排除决定时,本案上诉法院采用了一套决定科学证据可采性的专门规则,规定如下:

当一项科学原理或发现同跨实验和论证两个领域时,其界限就很难界定。在这个模糊的区域中,该原理具有怎样的证明力须予以确定;尽管法院需要经历复杂的过程才会采纳从受到普遍认可的科学原理或发现中推导出的专家证言,推理所得之事必须是充分成立的,并且已经获得其所属领域的普遍认可。[本案,第1014页]

弗莱伊案并未说明必须获得“普遍认可”的“事”确切指什么。是说真话与血压之间的关系吗?还是专家测量、解释血压变化的能力?或者两者的结合?但该案意见终被证明具有强大的影响力,美国多数法院采用了这种“普遍认可”(或称“弗莱伊”)测试标准。

从上文我所描述的认识论架构视角来看,弗莱伊案测试标准的吸引力显而易见。我们确信,的确存在一些经过整理的知识体系超出了日常生活知识的水平;我们也明白,司法程序中需要有途径能获取这些知识以便正确地裁判案件。然而,我们假定司法事实认定者们并没有预备的途径接触到这些知识。这便是我先前所提及的法律信息性弱点——我们知道我们亟需某些所不了解的知识,因此,对于那些声称已经掌握有这些知识的人来说,我们是脆弱的。在此情形下,认定已获认可的知识体系并随之遵从于那些真正掌握有该些知识的专家是非常明智之举——如果你们确有那样做

¹⁷ 罗纳德·艾伦:“事实的模糊以及一项证据理论”,载《西北大学法学评论》第88期,第604页,第616-630页,1994年。

¹⁸ 参见易延友:“英美证据法上的专家证言制度及其面临的挑战”,载《环球法律评论》2007年第4期,第67页。刘晓丹:“如何建立我国鉴定结论采纳规则”,载《现代法学》2009年第4期,第187页。(讨论了联邦证据规则702条、弗莱伊测试和杜伯特测试,并就中国如何从美国的实践中受益提出了建议,但是没有讨论认识论的问题。)爱德华J.伊姆文考瑞德:“从过去30年美国使用专家证言的法律经历中应吸取的教训”,王进喜、甄秦峰译,载《证据科学》2006年第6期,第181页。(对专家证言体系的一般介绍,而没有讨论认识论的问题。)

的话。这恰恰是弗莱伊案测试标准(及其对“普遍接受”原则的强调)规定的内容。该测试标准试图辨别出无争议的专家知识,并安排那些掌握有这些知识的专家作为相关事实的裁判者。该问题同样也是法律的弱点——对未知一无所知,因此只能听从他人的说法。然而,那些提供援助的人却有着自己的动机,有别于利益无涉的事实追求。这也就是为什么弗莱伊案测试标准非但未能实现其总体设计目标,反而招致了相当的不满。

美国联邦最高法院在多伯特诉梅里尔道制药有限公司一案¹⁹中否定了弗莱伊测试标准,在其影响下,弗莱伊案测试标准在美国许多司法辖区中也相继被否定了。²⁰该测试标准最根本的问题在于,如果拥有着骄人资历的专家们能够被雇佣来就任何事项作证的话,那么遵从模式也就彻底失败了。与此同时,该测试标准也饱受业内人士的批评,指出其无法顺应现代科学的进步,对新兴学科或者交叉学科领域的研究存有偏见,并对复杂领域内的普遍一致认可有着过于严苛的要求。在一个诸多学科正在以惊人速度增长并细分出更多精细专业的时代,弗莱伊案标准的提出显然不合时宜。在将该标准适用于专业化的非科学性学科过程中,法院也遭遇到了困境。

最高法院恰如其分地总结道:形式化的标准不合适;取而代之,审判法院需要在实质层面上经手所提供的证言,确保只有相关并可靠的证据才在审判中被采纳。用眼下时髦的术语来说,审判法院要扮演好“守门员”的角色以确保审理在认识上的稳健性。

尽管多伯特案在要求审判法院实质性接触专业知识领域的问题上走上了正确方向,但其所表明得要遵从公认专家的做法为美国的法律体系蒙上了阴影。最高法院在阐述“科学知识”标准时的业余努力突显了这一点。事实上,多伯特案的“科学知识”标准与弗莱伊案的普遍接受标准大同小异。最高法院在该案中确认了决定专家证言可采性的四个相关因素,其中三项直接来源于弗莱伊案:

- 主要内容是否已经过证伪实验的检测?证伪实验需要按照常规普遍接受的科学标准进行。
- “理论或技术是否经受过同行的审查并已公开发表”?很少有不符合普遍接受标准的结果能够得以发表。
- 在决定数据是否充分可靠以便采纳时,法院也会参照普遍接受原则。在这一点上明确适用普遍接受标准。

最高法院所确认的第四项标准仅仅是在说科学技术中存在的错误发生率应当被予以考虑。毫无疑问,不考虑错误发生率势必会严重损害任何科学性工作。

最为令人惊讶的是,在否定科学证据采纳之形式化旧标准的过程中,法院退回到了某种同样形式化的怪圈之中。换句话说,这正是我先前所提到的信息性弱点之直接结果。要求审判法院要接触科学基础是一回事,可实际操作起来却是另一回事,且绝非易事。在任何真正的专业领域中,只有通过长期的学习研究和努力才能成为专家。最高法院的这份清单含蓄地默认了其对下级法院所提要求的难处,并建议通过遵从模式来简化所需付出的努力。

有意思的是,下级联邦法院将多伯特案解读为最高法院的一种引导(引导众法院在采纳专家证言的问题上应采取更为谨慎的态度),并积极地进行了回应。鉴于此,多伯特案显著地改变了专家证言在联邦诉讼中的应用。此外,最高法院还认定了“多伯特案四要素”仅为建议而非命令,并明确了多伯特案规则适用于所有形式的专业性证据;审判法院必须要提防采纳不可信的证据,无论专业知识的性质是什么。²¹

审判法院该怎么做取决于待决事项的性质;简而言之,只要是可采性问题,最高法院便不允许遵从模式,而是坚持审判法院必须要接受相关主题的充分教育,直到法院能够独立地判定专家证言

¹⁹ 509 U.S. 579 (1993)。

²⁰ 绝大多数人拥护“多伯特案规则”。参见克里斯托弗 B. 穆勒,莱尔德 C.柯克帕特里克《证据法》(2009年第四版),第 639页。需要牢记的是美国各州有其各自的证据法。美国联邦最高法院仅为联邦法院系统决定证据性问题。

²¹ 后续案件判决明确表明了多伯特案标准仅仅是建议,库赫莫轮胎公司诉卡迈克尔案,526 US 127(1999),并且应用可靠性测试的责任主要在下级法院。通用电气公司诉结合者案,522 US 136(1997)。

是(或不是)真正基于知识而做出。对于关注于实现事实认定准确结果的审判核心愿景而言,这毫无疑问是一项积极的进步。²²

但是,最高法院的做法存在着一个明显的问题,而且该问题同样存在于联邦法院使用专家证言的程序中。别忘了美国案件审理中陪审团的使用频率是很高的,而多伯特案及后续案例中却并未要求审判法官坚持专家要像教育法官一样的去教育陪审团。许多专家仍然只是就他们的结论进行作证而非在真正意义上教育陪审团(《联邦证据规则》实际上鼓励这么做)。²³这就把陪审团留在了原地,面对着无法理解的专家意见去不理性地决定选择相信一方或者另一方(专家证言)。这是美国在处理专家证言问题上的一个巨大错误。多伯特案有一个好的开始,但却没有一个好的结局。最高法院意识到了认识论的深邃,弥合了其中一部分,但却在一项要求面前停了下来,即证据只有在能够被理解的基础上才可以被采纳。如果证言没有在充分的细节上进行解释以便事实认定者进行理解,那么审理中的裁决就不可能是理性的。

有趣的是,或许中国能够避免目前美国所犯的错误,而这恰恰是因为你们不使用陪审团制度。即便如此,中国法官依然会对要去学习其他学科的知识而感到不适,并会本能地被遵从模式吸引,因为从其角度出发遵从模式将问题简化了。对此,你们应当予以抵制。你们应当坚持,无论诉讼标的是什么,庭审中所呈现的信息都应该是能够被理解的。只有当审判成为真正意义上的教育性活动时,其理想状态才能实现。

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²²美国联邦法院的经验也许不同于州法院。一些观察者认为从弗莱伊案测试到多伯特案测试的变化在若干州内并未引起实践中的不同。特别参见:爱德华·成,阿尔伯特·尹:“弗莱伊测试或者多伯特测试重要吗?关于科学的可采性标准研究”,《弗吉尼亚法律评论》,2005年。

²³例如,参见《联邦证据规则》703、703、705。

CONCEPTUAL CHALLENGE OF EXPERT TESTIMONY

Ronald J. Allen*

It is a great pleasure each time I return to China to see my many students and how well they are doing. As I will discuss later in this paper, those of you studying evidence and procedure are critical to the continued progress of your country. My lecture tonight involves the conceptual challenge of expert testimony. This is important in its own right, because you cannot decide how to use expert testimony without understanding the difficulties that it poses, but that in turn means you must think about the nature of the legal system and how expert testimony advances or challenges the deepest aspirations you should hold for your legal system. The challenge will be to address all these issues in a systematic way, so let us begin.

The law of all countries of which I am aware contains relatively complex taxonomies of the types of information that conceivably may be pertinent to the resolution of a legal dispute. For example, American evidence law refers to scientific, technical and other specialized knowledge.¹ The Federal Rules of Evidence, compounding the complexity, go on to specify various ways in which a person might become an expert, which involves the acquisition in any manner of “knowledge, skill, experience, training, or education” that may “assist the trier of fact to understand the evidence or determine a fact in issue.”² If at least one of these criteria is met, an expert may express opinions or otherwise comment about the issues in a case, so long as the expert does so more or less consistently with the standards of the particular expert’s field of knowledge.

The suggestion in the Federal Rules of significant epistemological complexity because of the numerous forms of knowledge that might be pertinent to resolve a dispute is matched if not exceeded by complexity in practice. Enormous resources are spent analyzing and critiquing an apparently endless list of purported forms of expertise to determine the admissibility of testimony, to ensure that the expert is indeed going to testify on the basis of knowledge of some sort or another. If so, the expert is allowed to testify, but is not required actually to testify to that specialized knowledge. Instead, the expert may offer an opinion based on that knowledge about material propositions in the case.³ Unfortunately, opposing experts can do the same thing—and normally if there is not an opposing expert there is not a triable issue. Thus, after all the effort put into regulating expert testimony at trial, the trier of fact might find itself with two opposing opinions

* Ronald J. Allen: John Henry Wigmore Professor of Law, Northwestern University, President, Board of Foreign Advisors, Evidence Law and Forensic Sciences Institute, Fellow, Procedural Law Research Center, CUPL. I am indebted to Jiang Yujia, a law student at Northwestern University, for her research assistance.

¹ Federal Rules of Evidence (FRE) 702.

² FRE 702.

³ FRE 702, 703.

about what to do about matters that are beyond the knowledge of the typical fact finder.

The picture I painted above is odd in many respects. It suggests that there are critical differences between different forms of knowledge, that those differences can be accommodated for trial purposes by taking an internal perspective on the evidence being offered, and if that passes muster letting the expert opine about the relationship between the expert's field and the issues being tried. This is odd because each of these propositions is high problematic, and collectively, while conventional, are quite counterproductive to the central purpose of trial. To justify that assertion requires that the central purpose of trial be identified, that the regrettable consequence of the conventional approach to expert testimony on that purpose be identified, and an alternative offered. I discuss these three points in turn below.

THE FUNDAMENTAL ASPIRATION OF LIBERAL LEGAL SYSTEMS

There is controversy about the purposes of trial, especially in those jurisdictions with juries which may increase the possibility of a verdict against the law,⁴ but trials without reasonably accurate fact finding are pointless. They are worse than pointless; they are destructive of the foundations of liberal societies. The justifications of trials that neglect the significance of accurate fact finding are uniformly influenced by the misconception that the fundamental political insight of the Enlightenment, and thus the critical element upon which modern western governments rest, has something important to do with rights and obligations. Discussions of the political philosophers from Montesquieu to Rousseau are quite prevalent in legal scholarship. Trials bear upon this because they can be the vehicle by which various rights can be exercised, such as the right to be heard or to confront or resist. In countries with juries, an individual can defy government directly by appealing to the jury's common sense and humanity.

Obviously rights and obligations are important and necessary, but they are not sufficient. The more fundamental contribution of the Enlightenment to the legal system was the epistemological revolution that supplanted dogmatic knowledge with empirical knowledge. It replaced knowledge as the doctrines of the religious and political authorities with the concept that the world external to our mind may be known objectively through evidence.⁵ It is not an exaggeration to say that without accurate fact finding, rights and obligations are meaningless, and thus it is not an exaggeration to say that the most critical component of modern western civilization is accurate fact finding. Note that I say "modern western civilization." I will discuss below the Chinese experience.

In fact, even the concept of jury nullification is literally meaningless without generally accurate fact finding; nullification is the exception to the rule of factually accurate verdicts.⁶ The point presses considerably more deeply. Examine any example of a right and it becomes immediately apparent that it is parasitic upon its epistemological foundation. Consider what was originally and still is one of the most fundamental rights in the West, the right to property. To make the exercise concrete, consider the simple case of ownership of your cellphones. Your ownership of a cellphone allows you the "right" to possess, consume, and dispose of those assets, but suppose I walk up to you and grab what you say is your cellphone and refuse to return it, claiming that it is mine. What will you do? You will go to someone with the power

⁴ See Robert P. Burns, *A Theory of the Trial* (1999).

⁵ A good introduction is Enlightenment, Stanford Encyclopedia of Philosophy, available at <http://plato.stanford.edu/entries/enlightenment>.

⁶ It also neglects that a jury that can acquit against the law can equally well convict against it. Thomas Andrew Green, *Verdict According to Conscience: Perspectives on the English Criminal Trial Jury, 1200-1800* (1988).

to adjudicate rights, to be sure, a judge or a jury, but what will you do next? Demand the return of your cellphone? No, of course not because I will respond that the phone is mine. You will present evidence about how you came into possession of that cellphone, by presenting a receipt or a bill from the phone company that associates you with that cellphone instead of me. Then you might turn it on and demonstrate all kinds of things that would convince a reasonable person that it is your cell phone rather than mine, such as text messages or emails addressed to you and none to me, and so on.

If successful in this effort to show the facts, the decision-maker will grant you the right to possess, consume, and dispose of the cellphone—return it to your possession, in other words—and that will impose upon me reciprocal obligations. But here is the absolutely critical point: the right to property is completely and utterly dependent upon the facts that are found and are derivative of them. This point cannot be overemphasized, and it inverts the conventional conception of the relationship of facts and rights. Facts determine rights and obligations. Whoever finds the facts determines the meaning and scope of a right, whether it is the right to property or the right to life.

A potential skeptical note—even if fact finding is important in the way I have described, isn't it a rather large stretch to suggest that it is one of the most fundamental planks of modern liberal democracies? Not only is it not a stretch, but the success of the western democracies is intimately tied to this set of juridical arrangements. Tightly binding the rule of law to true states of the world anchors rights and obligations in things that can be known and are independent of whim and caprice. The right to the enjoyment of property does not depend upon the good graces of fallible human beings, or on their moods or prejudices. You do not have to be in someone's favor to possess a house or travel on a vacation or raise your children in the manner you think best. Quite to the contrary, these rights are grounded on things that have an existence outside the mind of any particular human being and that, as the great Enlightenment epistemologists saw,⁷ can be proved with a high degree of regularity by evidence that itself tends to exist without regard to the mind of any particular individual.

In addition to securing rights for their holders, grounding rights on facts permits people to negotiate around them in many different and important senses. Rights grounded in facts provide clear landmarks for both the holder and others, informing every one of the legal potentiality and limits of rights. Choices can be made and lives planned with greater security with such knowledge. Equally important, the secure foundation of rights makes possible the emergence of markets in them—they can be alienated in the various ways permissible within market economies—which has led to the astonishing growth of wealth in those parts of the world that adhere to such commitments.

To be sure, sometimes evidence is lacking and other times mistakes can be made, but normally the progression of the world leaves very traceable marks that permit the reconstruction of the past that is more than adequate to establish the past for the purpose of adjudicating the present. This is why, notwithstanding the complaints about ever increasing litigiousness, modern life works so amazingly well. It is why you can buy and expect to enjoy the use of your cellphones, houses, whatever. It is why you can reasonably expect not to be harassed by government in any country that actually aspires to the fundamental concepts that I have been discussing. It is why life is orderly for the most part rather than random. And this is why relevance and materiality are so fundamentally important to the construction of a liberal legal system.⁸ They tie the legal system to the bedrock of factual accuracy, and generate the consequences identified above.

Consider China's recent history from the perspective I have just developed. The most obvious

⁷ See n. 6, *supra*.

⁸ See, e.g., FRE 401, 402, 403.

inference any western observer would draw from the destruction of the legal system as occurred during the Cultural Revolution is that the economy would die with it, which is precisely what happened. With the unleashing of economic reform in the late 70's and early 80's, China engaged in a natural experiment about whether robust economic growth could occur and be sustained without a functioning legal system, and again the verdict was clear that it cannot. That, of course, is why your Government is so concerned with establishing something that approximates the western concept of the rule of law today, but establishing the rule of law requires a recognition of the primacy of factual accuracy in adjudication. This is why people like you in this room who are contributing to the fantastic growth of the field of Evidence in China are one of the most important components of China's continued progress. Without the work that you are doing, the reform of China's legal system is pointless and will be of no consequence whatsoever. Without factual accuracy, there are no rights.⁹

In sum, rights and obligations depend on facts, and can only be implemented systematically with knowledge of the actual, relevant states of affairs—and this is true whether we are talking about China or the United States. How legal systems find facts, what is the most accurate and/or efficient methodology, and critically what policies may offset the significance of factual accuracy, can be matters of reasonable disagreement. Thus, to understand the problems posed by expert evidence in any legal tradition, one needs to address the basic conception of a trial and the way in which knowledge is constructed in that conception. I will thus next describe the system of trials that I know best, the Anglo-American approach. Let me hasten to reiterate that, although there are aspects of the Anglo-American approach which are idiosyncratic, the significance of knowledge for rights is universal. I will explore that problem in detail within the context of the Anglo-American tradition, but the lessons of that exploration generalize, as I will briefly discuss at the end of this lecture.

To begin with the obvious, trials in the Anglo-American tradition resolved social disputes. These disputes were conventional and not highly complicated because society itself was not highly complicated. Indeed, the original mode of trial, from which trial by jury emerged, gathered together individuals with knowledge of local affairs to decide disputes based on their pre-existing knowledge—the exact opposite of the conventional, although, mistaken belief that modern juries must be completely ignorant of anything connected to the litigation. Ongoing disputes were part of community knowledge. More importantly, so was the knowledge of the facts necessary to resolve them. Many disputes, for example, involved truly local conventions, such as rights of way or easements, which meant they were known throughout the relevant community. Similarly, knowledge of who did what to whom was likewise notorious and, along with knowledge of local conventions, formed the basis of dispute resolution.

Even at a relatively early stage of development, situations arose that did not involve common knowledge, and witnesses began to be heard, but this was more the exception than the rule. As society, and in particular the economy, evolved, matters became more complex and knowledge began to be more stratified. As commerce developed, cases could turn on the practices of professions, for example, which require evidence of those conventions. Foreign languages may need translation, or the case may involve a technical vocabulary that, like a foreign vocabulary, must be made accessible to those lacking the pertinent knowledge. Interestingly and under the influence of the growing political importance of the jury, as such cases became more common the Anglo-American legal system continued to adhere to the traditional model of fact finding. The parties were merely obligated to

⁹ See Ronald J. Allen, Baosheng Zhang & Yuebo Zhang trans., *The Theoretical Foundations and Implications of Evidence*, 18 Evidence Sci. 485, 487 (“Facts are prior to and determinative of rights and obligations. Without accurate factfinding, rights and obligations are meaningless.”).

explain a little bit more, to put the fact finder in a position to understand what the witnesses were saying, and thus to decide the case in an intelligent fashion, but the facts were still to be found by the disinterested application of common sense by members of the community.

With the introduction of witnesses at trial, the ideal would be to give the fact finders access to the background and experience of each witness so that the fact finder would know precisely why a witness testified as he or she did. After determining the most plausible account of what actually happened,¹⁰ liability would be determined consistent with the law. Because it is not possible literally to merge the minds of witness and fact finder, the common law systems developed methods to approximate that result. This is the source of the opinion rule that requires that witnesses restrict testimony to their observations and not the inferences (opinions) witnesses may draw. The distinction between “fact” and “opinion” is analytically insupportable,¹¹ but as a guideline it puts pressure on witnesses to relate as much as possible their sensory impressions, leaving the fact finder to decide the facts as though the fact finder had actually observed them rather than just heard about them. This also explains the rise of liberal rules of cross-examination that allow witnesses to be probed concerning the basis of their testimony.

In many respects, these rules accomplish their purposes, although with certain costs, of course. Typically, everyone at trial—judges, jurors, witnesses—have shared enough backgrounds so that effective communication and comprehension are possible. The probability of both increases with the size of the body deciding a case, because each person added to the group brings a lifetime of experience and knowledge by which to judge the evidence. Small groups of people are enormously powerful and accurate processors of information, although again there are costs attached to any form of decision-making.

Eventually, a sharp distinction was made between witnesses and jurors (and judges for that matter) that did not exist in the common law origins of trials. Jurors were to base decision solely on the evidence presented at trial, and not on their own private knowledge. Some may be wondering how accurate this description is today, especially in the United States where a fairly robust use of jurors continues and the conventional media are filled with stories about how difficult it is in some cases to find jurors who are ignorant of a case to be tried—a difficulty that compounds dramatically with notorious or scandalous cases. The short answer is that the conventional view that potential jurors must be ignorant of the case is false. Why it is false is very important to understanding the conceptual challenge of expert testimony, however.

The conventional belief that fact finders must come with a blank slate is false in every respect save one. The belief is false in the technical sense that knowledge about the litigated event is typically not a disqualification; only knowledge that would qualify a person as a witness disqualifies the person as a juror.¹² The conventional belief about the necessary ignorance of jurors is false in a deeper and more important sense, and as I say one that is essential to understanding the true conceptual challenge of expert testimony, to which I will soon turn. Here is the necessary preliminary conceptual point: Fact finders come to trial with a vast storehouse of knowledge, beliefs, and modes of reasoning that are necessary to permit communication to occur simply and efficiently. So long as everyone is qualified in English (in the United States), words are not defined except in exceptional cases. Conventional beliefs about the nature of reality and the existence of causal relationships are just assumed to be held by all participants, and virtually never are the subject of evidence. Everyone is just assumed to engage in orderly reasoning, employing all the necessary forms—deductive, inductive, abductive, statistical—as necessary or appropriate. Given

¹⁰See Ronald J. Allen, *The Nature of Juridical Proof*, 13 Cardozo L. Rev. 373 (1991).

¹¹See Ronald J. Allen, Richard B. Kuhns, Eleanor Swift, David S. Schwartz, *Evidence: Text, Problems, and Cases* 609-620 (4th ed. 2006).

¹²This is implied by FRE 606's prohibition on jurors being witnesses.

a common language, or translations if necessary, comprehension of witnesses is just assumed, as is the ability to perceive the connection between the evidence and the trial. Everyone is assumed to know about the foibles of human testimony and the perverse effects of potential biases, and thus to be able to judge the credibility of the testimony. Less well known, everyone is expected to be able to fill in the evidentiary gaps at trial that result from many factors (including that individual witnesses always know more than they can express) by drawing inferences based on one's own.

In fact, the very concept of "evidence" cannot be understood as simply the testimony and exhibits produced at trial, and instead must involve an interaction between a human being and their observations, which presses the self-informing nature of the trial to an even deeper level. I once summarized this point in the following way:

Suppose a witness begins testifying, and thus a fact finder must decide what to make of the testimony. What are some of the relevant variables? First, there are all the normal credibility issues, but consider how complicated they are. Demeanor is not just demeanor; it is instead a complex set of variables. Is the witness sweating or twitching, and if so is it through innocent nerves, the pressure of prevarication, a medical problem, or simply a distasteful habit picked up during a regrettable childhood? Does body language suggest truthfulness or evasion; is slouching evidence of lying or comfort in telling a straightforward story? Does the witness look the examiner straight in the eye, and if so is it evidence of commendable character or the confidence of an accomplished snake oil salesman? Does the voice inflection suggest the rectitude of the righteous or is it strained, and does a strained voice indicate fabrication or concern over the outcome of the case? And so on.

The list of relevant variables goes far beyond credibility issues, of which demeanor is only one. When a witness articulates a proposition, the fact finder must determine what the proposition is designed to assert and what the fact finder believes it asserts. That task, too, involves an immense number of variables. In addition, the fact finder will possess some knowledge based on its observations leading up to the first articulated proposition by a witness, acquired from the lawyers for example. And there are many more examples. For the law to proceed [in a rule-based fashion] would require that many of these variables be in a deductive structure with their necessary and sufficient conditions spelled out. No such structure could be created; it would be too complex.¹³

The critical attribute of fact finders is not that they are ignorant, for as we have seen that is impossible; rather, it is that they are disinterested and fair minded, and thus will consider the evidence with an open mind. These two strands of what I have described so far can be pulled together into a coherent whole that describes the deepest aspirations of any liberal legal system, and that is to vest decision in competent, disinterested individuals able to process and deliberate upon the evidence to reach a rational judgment as to what occurred—and thus reach an accurate judgment as to the rights and obligations of the parties.

EXPERT TESTIMONY AS A REPROACH TO THE ASPIRATIONS OF TRIALS

But what if testimony can only be understood with knowledge or experience that the fact finder

¹³Ronald J. Allen, Factual Ambiguity and a Theory of Evidence, 88 NW. U. L. REV. 604, 625–26 (1994). DOUGLAS WALTON, LEGAL ARGUMENTATION AND EVIDENCE 200 (2002), has articulated a similar analysis of legal evidence. The complexity of real life is the central problem that AI and the law researchers face. See Ronald J. Allen, Artificial Intelligence and the Evidential Process: The Challenges of Formalism and Computation, 9 ARTIFICIAL INTELLIGENCE & LAW 99 (2001). For an early philosophical discussion to the effect that people can disagree about the implications of evidence, see G. POLYA, 2 MATHEMATICS AND PLAUSIBLE REASONING: PATTERNS OF PLAUSIBLE INFERENCE (1954).

lacks so that the chances are virtually zero that the fact finder will understand what the spoken words are intended to convey, or at least will be unable to intelligently appraise the truth of what is spoken? We have now gotten to the central conceptual difficulty posed by expert testimony, and there are only two possible solutions to it. Either the necessary background information must be provided somehow, or fact finders must defer to the judgment of others. Here “to defer” means to adopt someone else’s views as correct, not because you understand and agree, but because you are simply delegating that decision to someone else. Virtually always, the Anglo-American legal system has chosen to require that information be provided in a comprehensible fashion to the fact finder. If a witness speaks a foreign language, translations will be provided. When routine business practices or conventions matter, for example, evidence is adduced on the topic so that the fact finder may judge what the actual routine practices or conventions are. Requiring that the trial evidence be connected to the background and experience of typical members of the community approximates the ideal vision of a trial.

The central conceptual problem of expert testimony is that its use at trial is often inconsistent with the normal conception of a trial. Experts often engage in years of specialized training, which can make it difficult to educate the fact finder about the relevant issues at trial. Although the controversies over expert testimony explicitly are typically about such things as reliability, they in fact are controversies over supplanting the norm of education by deference when someone qualified as an expert speaks, and thus can only be resolved by addressing that issue.¹⁴

The obvious first question to ask is whether deference is ever an absolute necessity, whether there any cases that cannot be accommodated within the traditional model. Do some cases present issues for decision that defy the ability of fact finders to understand them? Perhaps the answer to these questions is “no.” The deficits of juridical fact finders are not cognitive; they are informational. Judges and jurors lack knowledge about many things, like science and technology, but there is no reason that they could not adequately master the relevant fields. This does not mean that a fact finder would have to become an oncologist or radiologist, or whatever. The objective is not to understand any particular field in its entirety. Rather, the objective is to learn enough so that rational deliberation can occur. In this respect, multi-body decision makers—either juries or panels of judges—are actually superior to single person decision makers. Not every member of a panel needs to understand deeply every issue. The question is whether the panel adequately understands. It would be astonishing if a legal case actually defied the cognitive capacities of a small group even randomly picked from society at large, let alone vetted as both judges and jurors are.

Obviously, there are examples of ideas and even fields of inquiry that may defy common understanding at present. Many ideas in physics seep only slowly into the general population, even the general population of scientists. Maybe it would be asking too much for a judicial fact finder to learn special relativity or quantum theory, but to my knowledge these theories are not pertinent to any litigation that has ever occurred. Admittedly, physics is not the only difficult science to learn. Many individuals find higher mathematics difficult (which is probably why they find physics difficult). Examples of two areas of somewhat higher mathematics that are pertinent to modern trials are calculus and probability theory. Still, while some people do, others do not find mathematics at this level obscure—or more importantly would not find it impossible to learn sufficiently for intelligent decision. Here again is the value of a multi-body decision maker. As I said above, what matters is not whether everyone understands but whether the body as

¹⁴The education-deference distinction was first introduced into the literature in Ronald J. Allen & Joseph S. Miller, *The Common Law Theory of Experts: Deference or Education*, 87 Nw. U. L. Rev. 1131 (1993), and Ronald J. Allen, *Expertise and the Daubert Decision*, 84 J. Crim. L. & Crim. 1157 (1994). This article is an extension of those articles.

a whole does or could learn what is needed for intelligent decision.

The real objection to educating the fact finder is not that it is impossible but that it would be too costly. If statistics plays a role in the trial, it would have to be explained so that the fact finder can understand, which in some cases might require some considerable instruction. The same would be true of various areas of medicine, and so on. In some cases, this educational process would not be terribly burdensome, but in others it would be difficult and require extensive instruction. So, yes, it would be costly, but I literally do not know of any cases actually litigated that would seem to defy this educational process.

The important question is whether the increased cost of educating the fact finder about the basis of “expert” testimony is a good enough reason to forego the normal ideal of a trial and substitute a form of deference. The very question is one of the bizarre aspects of the conventional discourse over expert testimony. There are many cases without scientific or technical questions that nonetheless involve months of testimony. No legal system in the west of which I am aware defers to experts in such cases; the parties are required to prove the case with evidence that is comprehensible to the fact finder. It is difficult to understand why a deferential procedure should be followed merely because a party produces something labeled “expert testimony.” The cognitive questions are essentially identical in both sets of cases, and the economic issues are truly identical. In all cases and for all witnesses, the parties in fashioning strategy account for the costs of presenting witnesses and responding to the other side. There is nothing unique about expert witnesses in that regard. An objection on the ground that the public subsidy to trials should not be wasted by requiring more detailed examination of the basis of expert testimony highlights the bizarre nature of the controversy. The public subsidy to a year long trial involving radiology is not substantively different from the subsidy to a year long securities trial. Indeed, if there is a difference, it favors the subsidy for radiology, as the fact finder might actually benefit from learning about radiology, as compared to the utter uselessness of the evidence that fact finders have to process about the unique and idiosyncratic facts of various disputes. The objection on the ground of cost to educating the fact finder has it exactly backwards.

THE SOLUTION

If the central aspiration of trials is to be achieved, the parties must educate the fact finder in all instances. This would eliminate the legal problem of “expert” testimony, because the category would no longer exist. That may seem like solving a problem by definitional fiat, but it is not; the point cuts much more deeply than that. The lamentable consequence of conducting trials through deference is that mistakes will be made because fact finders choose to defer to a purported expert who is in fact not testifying on the basis of knowledge but instead is providing what is called in the United States “junk science.” Junk science and unreliable expertise exploit the informational vulnerability of the law, the necessary condition of which is that the fact finder does not understand the basis of the expert’s testimony. Making all witnesses, including what are now called expert witnesses, explain their testimony will largely eliminate this problem because false propositions resist comprehensible explanations. I do not say make them impossible, but the presentation of unreliable evidence would be made considerably more difficult.

But there is another side to this epistemological coin. Perhaps I am wrong that the primary limitation of fact finders is informational rather than cognitive; perhaps there are cases that involve “knowledge” in a strict sense—true justified belief—that judges and jurors are not able to comprehend. Obviously, there is specialized nonconventional knowledge pertinent to legal disputes about many fields such as mathematics and medicine. If such knowledge exists and cannot be conveyed at trial, then it is pointless to hold trials involving it in any legal tradition that emphasizes decision by disinterested individuals who rationally

process the evidence; that simply cannot occur with a deferential mode of presenting evidence. Quite the contrary, if there are forms of expertise that are pertinent to trials but cannot be explained at trial, the solution is to not try those cases. If expertise exists and can be identified with the certainty that we know that we are presently in China, its lessons should be embraced and the case so decided. How to do so is a different question, and it would usually be done through legislation or regulation.

By contrast, maintaining the present form of trial that involves expertise that is not comprehensible to the fact finder is, literally, nonsensical. In trials, both sides offer expert opinions to which fact finders can defer; these opinions are virtually always diametrically opposed, with one favoring one party and the other favoring the other. If there are not opposing opinions, there is not a triable dispute, and the side with the unassailable (or at least unassailed) expert wins. If there are competing experts, fact finders in a deferential process do not grapple with the facts but simply decide which expert's opinion to accept. And now the critical question: How can fact finders defer intelligently without understanding the relevant fields? Essentially the only way that one could know which expert to believe is by knowing the field adequately enough to appraise the opinion in light of the facts of the particular case. Without knowledge of the field of inquiry, the fact finder has no rational basis to defer to either expert. This point reverberates over the use of expertise at trial, and emphasizes how much the present form of expert testimony is a reproach to the deepest aspirations of the Anglo-American legal system. To restate the obvious, fact finders (or anyone else) who do not know enough to draw the correct inferences from the evidence cannot decide intelligently which expert opinion to choose as correct. If, by contrast fact finders can decide intelligently about which expert to believe, deference to the expert is not necessary. The fact finders could see for themselves the progression of the expert's thought leading from the specialized knowledge through the evidence of the case to the conclusion being offered.

The reduction in the likelihood of rationality is at odds with the deepest aspirations of trials, which again is the pursuit of factual accuracy through rational deliberation. Indeed, there is a high irony here. The mere admission by the trial judge of competing expert opinions without requiring an explanation of the experts' views, including testimony on the underlying field of inquiry, ensures that decision will be arational if not irrational. Only if a fact finder could see clearly that one side was right and the other wrong would decision be rational; but if that were so, the judge would admit only the one version and exclude the other. If reasonable people could rationally disagree about which expert is right, they would be able to understand the underlying dispute, and thus deference would not be needed. Note also the dramatic qualification of the normal rules of relevancy that deference entails. Normally a party must explain the relevance of evidence by adequately connecting the evidence to the fact finder's understanding, but that is simply not possible without an understanding of the basis of testimony.

An important qualification to explain one possible objection: deference and education are not analytically distinct but opposite points on a spectrum. Raw data is almost never presented at trial (once in a while a demonstration will occur in court, but such things are rare). There is an element of deference in deciding that a witness has testified truthfully. Even if deference and education are ubiquitous variables, they can be present in differing concentrations. Compare hearing the evidence of sensory experience ("The defendant hit the plaintiff.") to the drawing of inferences ("In light of these studies, I am of the opinion that smoking causes cancer."). The key variable is whether the fact finder understands the reasoning process that led the witness from observation to conclusion. Without that understanding, appraising rationally the evidence is literally impossible. Often with experts there is no expectation that the reasoning process can be understood. Thus, acceptance or rejection of an opinion cannot occur by the exercise of judgment, and in precisely that way deferring to an expert differs from the deference involved in deciding whether to believe a lay witness.

In sum, there are only two ways expert evidence can be dealt with because there are only two ways evidence can be dealt with. The first is to treat expert testimony just like any other testimony, which means for it to be admissible it must be understandable by the fact finder. To make an expert's testimony understandable will require the fact finder to be educated about the relevant matters. The difficulty is cost, and especially that cost may skew decision toward those with greater resources. The more impecunious a party, the less able he or she will be to provide the necessary educative function, or to respond to an opponent's case. The latter point is an aspect of the U.S. system's failure to make parties bear the true cost of their cases, which includes the opponent's cost of responding. Without cost shifting, a wealthier party can make the cost of suit too high for the opponent. Adopting the normal approach to expert testimony would exacerbate this problem by tending to make cases involving expertise more protracted.¹⁵ It would, however, maintain decision by disinterested individuals who have processed and deliberated upon the evidence.

The alternative to education is deference: Fact finders can either be asked to choose which expert to believe even though the fact finder is incompetent to do so rationally, or the state can definitely determine an outcome. The only possible advantage of a deferential model at trial is the potential reduction of cost, but those savings are secured by increased irrationality in decision.

Removing issues from fact finders through definitive state resolution through legislation or regulation has the potential to vest responsibility in those with the ability to decide rationally and consistency in decision is advanced. If the decisions about expertise are correct, accuracy in decision should be advanced as well. There are two disadvantages to this approach. First, it amounts to imposing an official orthodoxy on truth, and what guarantees does one have that the official answer—the official dogma, as it were—is correct? One of the advantages of litigation is that it permits a constant evaluation and reevaluation of the truth of various beliefs that are at certain moments in time taken for granted. If there is an official orthodoxy and that orthodoxy is incorrect, consistency of decision will remain, but the decisions will be consistently wrong. Of course, this advantage of litigation requires an educational, not a deferential, mode of trials.

Some may think that what I have been describing is not really a problem. The great emphasis on the adversary system and the privatization of social disputes in the United States let parties choose whether to educate the fact finders or convince them to defer to an expert. This leaves the whole matter up to the parties, save only for the admissibility decision of judges. The parties know their dispute and their resources better than anyone else, and are in the best position to make choices that optimize their interests. There is one last critical point, though. A deference model exacerbates the problem of cost by introducing functional cost-shifting. If the trial judge admits one party's expert testimony, and that party simply presents the expert's conclusions or opinions, the actual cost of explaining those opinions can be shifted to the other side. This raises the opponent's transaction costs, and facilitates strategic game playing by undermining the normal rule that parties bear their own costs.

I have tried to demonstrate that the use of expert testimony poses fundamental challenges to any system of adjudication, which explains in part the growing controversy over expert testimony even as expert testimony is becoming ever more prevalent at trial. Lurking here is the question embarrassing to much current practice involving experts: To what extent is rational deliberation the hallmark of adjudication? To what extent are fact finders supposed to listen to, process, deliberate upon the evidence, and decide legal rights and obligations consistently with true determinations of facts? Any system dedicated to rights and

¹⁵ Although the matter is too complicated to pursue now, offsetting this factor in part is that higher costs are a laudable disincentive to sue or an equally laudable incentive to agree to resolution in other, less costly, forums. How to balance these matters is one of the largest challenges of modern legal systems.

obligations implicitly if not explicitly adopts just such a juridical model. Indeed, that is precisely why I began this article as I did, with an emphasis on how fundamentally important factual accuracy is to any system dedicated to the rule of law. In part, the controversy over expert testimony is fueled by failing to treat the underlying cause of all the difficulties, which is the incompatibility of the deferential mode of treating expert testimony with the fundamental aspirations of trials. I will develop that point below, but first to get a sense of just how big a problem the unreflective reliance on dogmatic assertions of knowledge can be, consider some of the categories of evidence that have been routinely admitted at trial in the United States, only subsequently to be shown to be anywhere from questionable to highly unreliable:

- Shaken baby syndrome—are there effective markers sorting out innocent Sudden Infant Death Syndrome from abusive behavior?
- Hand writing analysis—is there truly an expertise here? And are experts even consistent in their judgments about hand writing?
- Finger prints analysis—uniqueness has never been subjected to
- Predictions of dangerousness—unreliable and unvalidated psychiatric testimony has sent people to jail for extensive periods of time
- Repressed memories—again unreliable and unvalidated psychiatric testimony has sent people to jail for extensive periods of time
- Hair and fiber analysis has been shown to be unreliable
- Identification of causation of diseases—often unreliable
- Silicone’s deleterious effect on the autoimmune system—completely false
- Arson investigation used completely discredited methodologies
- For decades, the scientific evidence showing smoking causes cancer was suppressed

The experience in the United States suggests that something is seriously amiss in its treatment of expert testimony.¹⁶ I believe and will attempt to demonstrate that the major problem is that the U.S. law has neglected the central conceptual problem posed by expert testimony. Rather than directly dealing with the deferential aspects of expert testimony, the law in the United States has tried to tinker with deference to improve it. The impulse lying behind the tinkering is understandable. Much specialized knowledge is useful in resolving disputes, but even if it is not impenetrable it is often challenging and difficult. If we could just get deference right, we could cheaply and efficiently import that knowledge into trials and improve the accuracy of verdicts.

As the above examples indicate, however, tinkering with deference has not been terribly successful. Some may think this is because of the incompatibility between “scientific” knowledge and lay knowledge, but that is not the cause of the difficulties. Incompatibilities between forms of knowledge do not exist; there simply is or isn’t knowledge. To be sure, knowledge in many organized fields of inquiry is probabilistic, but this is true of general and specialized forms. Much of “scientific” knowledge is highly complicated, but so, too, is ordinary life—indeed, ordinary life is more complicated than any specialized body of knowledge. Science proceeds by simplifying and studying what is amenable to study.¹⁷ The biggest difference between scientific inquiry and litigation is that the legal system cannot delay decision while it waits for knowledge to advance—maintaining the status quo is a decision on the merits for someone—but this has literally no programmatic implications for the use of expert evidence at trial.

¹⁶For a systematic discussion of the problems with forensic sciences and the law, see the report of The National Academy of Sciences, National Research Council, Strengthening Forensic Science In The United States: A Path Forward (2009).

¹⁷Ronald J. Allen, Factual Ambiguity and a Theory of Evidence, 88 Nw. U. L. Rev. 604, 616-630 (1994).

In my opinion, the struggle of the American legal system to domesticate expert testimony is largely if not entirely due to its neglect of the incompatibility of deference and education at trial rather than the incompatibility of scientific and some other form of knowledge. This, though, is a lesson that generalizes to many other legal systems, and in particular China. There is considerable discussion in China about the various tests for the admission of expert testimony in the United States, such as the *Frye* and *Daubert* tests, but there is literally no discussion of the conceptual challenge posed by the use of expert evidence at trial, nor so far as I can tell much comprehension of its significance.¹⁸ Your courts and legal scholars have yet to probe the conceptual foundations and difficulties of expert testimony. Without doing so, you cannot intelligently decide how best to accommodate expert evidence, nor can you appraise how good a solution either *Frye* or *Daubert* is. In fact, as I will show, neither is a very good solution. *Daubert* is slightly better than *Frye* but it, too, avoids rather than resolves the central problem. You in China should not just be having a discussion as to which of these approaches is best, or whether some other approach is better still. You should be grappling with the conceptual underpinnings of your legal system and asking how different models of handling expert testimony can be reconciled with the aspirations you have for your system. So, my main point here is going to be that neither of the main tests used in the United States satisfactorily resolve the conflict between expert testimony and the aspirations of the legal system, which should be a cautionary lesson for you in China.

Both the *Frye* and *Daubert* tests are well known in China, so I can be quite brief in their description and spend a bit more time explaining their limitations. As is well known, the systematic treatment of scientific evidence in the United States began with *Frye v. United States*. The defendant sought to introduce into evidence the results of an early type of lie detection device—a systolic blood pressure test. In upholding the trial court’s exclusion of the evidence the Court of Appeals adopted a special rule for the admissibility of scientific evidence, stating:

Just when a scientific principle or discovery crosses the line between the experimental and demonstrable stages is difficult to define. Somewhere in this twilight zone the evidential force of the principle must be recognized, and while courts will go a long way in admitting expert testimony deduced from well-recognized scientific principle or discovery, the thing from which the deduction is made must be sufficiently established to have gained general acceptance in the particular field in which it belongs. [Id. at 1014.]

The *Frye* opinion is unclear about precisely what “the thing” is that must have gained “general acceptance.” Is it the relationship between truth-telling and blood pressure, or the ability of an expert to measure and interpret the changes in blood pressure, or both? Still, the opinion eventually proved very influential, and a majority of courts in the United States adopted the “general acceptance” or “*Frye*” test.

The attraction of the *Frye* test is immediately apparent from the perspective of the conceptual framework I have developed above. We are confident that there are organized bodies of knowledge that transcend everyday knowledge, and we know further that the judicial process needs access to that

¹⁸ See Yanyou Yi, YingmeiZhengjuFa Shang de ZhuanjiaZhengyanZhiduJiqiMianlin de Tiaozhan (英美证据法上专家证言制度及其面临的挑战) [Expert Testimony System in Western Evidence Law and Its Challenges], 4 Global L. Rev. 67 (2007) (discussed the *Frye* and *Daubert* tests and the *Kumho Tire Company* case, but did not address the conceptual challenges of expert testimony); Xiaodan Liu, RuheJianliWoguoJiandingJielunCainaGuize (如何建立我国鉴定结论采纳规则) [How to Develop the Rules of Admissibility of Judicial Appraisal Evidence in China], 32 Modern L. Science 187 (2009) (discussed FRE 702, the *Frye* and *Daubert* tests and made suggestions on how China can benefit from the U.S. practices, but did not discuss epistemological questions); Edward J. Imwinkelried, Jinxi Wang & Qinfeng Zhen trans., The Lessons to Be Learned from the Last Three Decades of American Legal Experience with Expert Testimony, 15 Evidence Science 181 (2007) (general introduction to the expert testimony system without any discussion on epistemological issues).

knowledge to decide cases correctly. Yet, by hypothesis, the juridical fact finders do not have ready access to that knowledge. This is the informational vulnerability of the law I mentioned before—we know we need knowledge that we do not have, and thus we are vulnerable to those who claim to possess such knowledge. In those circumstances, it is perfectly sensible to identify accepted bodies of knowledge and then defer to those who in fact do possess that knowledge—if you able to do so. That is precisely what the *Frye* test, with its emphasis on “general acceptance,” does. It tries to identify uncontroversial expert knowledge and sets up those experts in that knowledge as the arbiters of the relevant facts. The problem is again the law’s vulnerability—it doesn’t know what it doesn’t know and can only take someone else’s word for it. Those offering assistance, however, have their own agendas which go beyond a disinterested pursuit of the truth. This is why the test failed in its overall objectives, which in turn led to considerable dissatisfaction with it.

The United States Supreme Court rejected *Frye* in *Daubert v. Merrell Dow Pharmaceuticals, Inc.*,¹⁹ and under its influence *Frye* test has been rejected in many jurisdictions in the United States.²⁰ The most fundamental problem with the test was the painfully obvious point in retrospect that, if purported experts with impressive credentials can be recruited to testify to just about anything, deference fails utterly. The test was also the subject of extensive internal criticism that it was not responsive to modern scientific developments. It was biased against emerging disciplines or cross-disciplinary studies and in one sense had too stringent of a requirement of general unanimity within complex fields. The test was rendered anachronistic by the astonishing increase in and the splintering of disciplines into subspecialties. Courts also struggled to apply it to specialized but nonscientific disciplines.

The Supreme Court, quite appropriately, concluded that a formal standard was inappropriate and that instead the trial courts had to engage substantively with proffered testimony to ensure that only relevant and reliable evidence is admitted at trial. In the now famous phrase, the trials courts are to act as “gatekeepers” ensure the epistemological soundness of trials.

Although the holding in the case goes decidedly in the right direction of requiring the trial courts to engage substantively with fields of expertise, the *Daubert* opinion nonetheless demonstrates the remarkable shadow that the urge to defer to acknowledged expertise casts in the American system. This is most clear in the Court’s amateuristic effort to articulate the criteria of “scientific knowledge,” virtually all of which reflected backwards on *Frye*’s general acceptance standard. The Court identified four factors relevant to the determination of the admissibility of expert testimony, three of which derive directly from *Frye*:

- Has the subject matter been subjected to falsifying tests? Falsifying experiments take place within normal generally accepted scientific canons.
- Has “the theory or technique has been subjected to peer review and publication.” Rarely do results not within generally accepted paradigms get published.
- In determining whether data is sufficiently reliable to be admitted, a court may also look to general acceptance. This adopts general acceptance explicitly.

The fourth criterion identified by the Court is merely that rate of error in scientific techniques should be taken into account. Of course, failing to take into account error rates would seriously undermine any work purporting to be scientific.

What is most startling about this list is that while in the very process of rejecting formal standards for

¹⁹509 U.S. 579 (1993).

²⁰All but a handful have embraced *Daubert*. See Christopher B. Mueller & Laird C. Kirkpatrick, *Evidence* (4th ed. 2009) 639. It is important to bear in mind that each state within the United States provides its own law of evidence. The Supreme Court of the United States only decides evidentiary questions for the federal courts.

the admission of scientific evidence, the Court retreated to a set of equally formal standards—the Court went in a circle, in other words, which is a direct consequence of the informational vulnerability I referred to earlier. It is one thing to say that the trial courts should engage with the underlying science; it is another to do it, and it will not be easy. In any truly specialized field, there are reasons why it takes long study and effort to become an expert. The Court's list implicitly acknowledged the difficulty of what it was asking the lower courts to do, and offered suggestions as to how to simplify the effort through a form of deference.

Interestingly, the lower federal courts saw in *Daubert* the invitation to be much more careful in admitting expert testimony, and they accepted the invitation with some enthusiasm. As a result, *Daubert* has significantly changed expert testimony in federal litigation. The Supreme Court has encouraged this process by recognizing that the *Daubert* factors are suggestions not mandates, and also made clear that *Daubert* applies to all forms of specialized evidence; the trial courts must guard against the admission of unreliable evidence, regardless of the nature of the expertise.²¹

How the trial courts are to do that depends upon the nature of the subject matter; the Court, in short, has rejected a deferential mode of proceeding so far as the admissibility decision is concerned, and now insists that trial courts must be educated enough about the relevant subject matter so that the court can independently conclude that the expert's testimony is actually based upon knowledge. This is unmistakably a very positive development, to the extent one cares about the central aspiration of trials to reach factually accurate results.²²

But there is one glaring and remarkable problem in what the Court has done, and thus in the use of expert testimony in federal court. Remember that juries are still used frequently. The *Daubert* line of decisions most emphatically does not require that the trial judge insist that the experts educate the jury as well as the judge. Many experts still testify to their conclusions without truly educating the jury, a process that is actually encouraged by the Federal Rules of Evidence.²³ That leaves the jury exactly where it was before, with, incomprehensible opinions and the irrational mandate to choose one or the other. This is the great mistake of the United States' approach to expert testimony. *Daubert* started well but ended badly. The Court saw the epistemological abyss, bridged it in part, but stopped short of a requirement that evidence can only be admitted if it was capable of being understood. If testimony is not explained in sufficient detail to allow the fact finder to understand it, trial verdicts cannot be rational.

Interestingly, perhaps China can avoid the mistake so far being made in the United States, precisely because you do not use juries. Still, your judiciary will feel uncomfortable in having to learn about other disciplines and will intuitively be attracted to a form of deference because it simplifies things from their perspective. You should resist this. You should insist that information presented at trial be comprehensible, no matter what its subject matter is. Trials cannot fulfill their aspirations unless they are truly educational events.

²¹ Later decisions made it clear these were only suggestions, *Kuhmo Tire Co. v. Carmichael*, 526 US 127 (1999), and that the responsibility for implementing the reliability test lay primarily in the lower courts. *General Electric Co. v. Joiner*, 522 U.S. 136 (1997).

²² The experience in the federal courts may differ from that in state courts. Some observers think that the change from *Frye* to *Daubert* within various states did not make much of a difference in practice. See in particular Edward Cheng and Albert Yoon, *Does Frye or Daubert Matter? A Study of Scientific Admissibility Standards*, 91 VA. L. Rev. 471 (2005).

²³ See, e.g. FRE 703, 703, 705.