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EXPERT HISTORIES

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Attorneys and experts often worry that being excluded in a case will have negative ramifications on an expert's future admissibility. This symposium contribution seeks to highlight this phenomenon, as well as evaluate its normative desirability and empirical validity. Promoting the use of expert histories, for example, may create long-term incentives that help control adversarial experts. The article further develops a statistical "frailty" model to analyze a dataset of expert admissibility rulings collected and provided by Expert Profiler, LLC. The results suggest that recent exclusions may have a robust, if small, negative effect on an expert's odds of being admitted in a future case.

I. INTRODUCTION

Testifying experts often express concern about being excluded in a case. Notably, this worry is not only because of the negative ramifications of exclusion in the current case but also because of its effect on *future* cases. Some experts recount stories in which their expert "adversaries" were excluded in one case, only to disappear from the expert scene altogether.[1] Other experts note that after being excluded, their attorneys imposed a "cooling off" period or that a single past exclusion became a frequent point of contention in future litigation.[2] In the expert business, it is as if there is a dreaded "mark of exclusion," and experts fear and do their best to avoid it.

The case law provides some basis, albeit a less dramatic one, for these tales. In expert admissibility rulings, courts do indeed discuss whether an expert testified in previous cases, and more ominously, whether an expert was previously excluded. Yet nothing in the evidentiary rules explicitly charges courts with accounting for an expert's prior history.

What are we to make of these uses of an expert's history? Empirically, are the experts' fears and suspicions correct? Does a prior exclusion indeed mark an expert as damaged goods? Or is the "mark of exclusion" more akin to urban legend, the

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[1] Email from Edith Beerdsen to Edward K. Cheng, Sept. 13, 2024) (on file with author).

[2] Conversation with David Madigan, Provost and Senior Vice President of Academic Affairs, Northeastern U. (Nov. 8, 2024).

product of the overactive imaginations of paranoid experts and their lawyers? Relatedly, when courts cite an expert's prior history, is that mere rhetoric used to justify decisions made on other substantive grounds, or do courts really use expert history as a kind of quasi-precedent that helps determine admission or exclusion?

This symposium contribution explores this largely neglected phenomenon of expert histories.[3] Part II provides a brief background on the use of expert histories in practice. Part III assesses the desirability of using expert histories and whether the practice fits with existing evidentiary norms. In particular, I will argue that expert histories are a potentially important mechanism for controlling experts and the expert evidence presented to courts. Part IV offers some preliminary empirical evidence about whether the phenomenon actually occurs in practice. To answer the empirical question, I analyze a database extract from Expert Witness Profiler, LLC, a consulting service hired by litigants to research the prior admissibility records of experts. Part IV also discusses (at a conceptual level) the "frailty" models used to empirically study the effect of prior exclusion and then reports the results. The analysis suggests that prior exclusion has a statistically significant, albeit practically small, effect on an expert's probability of exclusion. Part V then discusses possible explanations for the results, their limitations, as well as future directions for research. A brief conclusion as well as a Technical Appendix follows.

II. BACKGROUND

Anecdotally, stories about the import of an expert's prior history abound. Experts and their attorneys frequently express fear over even a single exclusion, worrying that even a single negative outcome may adversely affect their admissibility in the future. Thus, experts are invested in avoiding exclusion as well as the accuracy of their admissibility history,[4] and lawyers report avoiding experts with prior exclusions.[5]

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[3] I should emphasize that the focus of this article is on the use of a specific *individual* expert's history and not the effect of prior rulings about the same methodology or forensic technique, which has been discussed elsewhere. *See, e.g.*, Brandon L. Garrett & M. Chris Fabricant, *The Myth of the Reliability Test*, 86 FORDHAM L. REV. 1559, 1568, 1576, 1580 (2018) (observing that judges tend to follow precedent and prior rulings on different types of forensic evidence); Katie Kronick, *Forensic Science and the Judicial Conformity Problem*, 51 SETON HALL L. REV. 589, 619-20, 629 (2021) (arguing that the continuing admission of questionable forensic expert testimony is due to conformity bias, in which judges decide cases in conformity to their peers); Brett Murphy, *They Called 911 for Help. Police and Prosecutors Used a New Junk Science to Decide They Were Liars*, PROPUBLICA (Dec. 28, 2022, 6:00 AM), https://www.propublica.org/article/911-call-analysis-fbi-police-courts [https://perma.cc/5M5B-CCV8] (reporting that the developer of a controversial 911 call analysis technique sought to avoid creating any negative Daubert precedent).

[4] *See, e.g.*, Bibbs v. Molson Coors Bev. Co., No. 4:22-cv-00200-P, at 1 (N.D. Tex. July 15, 2024) (denying expert's motion to reconsider exclusion when "pro-se plaintiff did not give him notice of the pending motions for summary judgment and to strike his expert testimony"); *see also* Mot. to Strike Reversal Request at 1-2, Bibbs v. Molson Coors Bev. Co., No. 4:22-cv-00200-P (N.D. Tex. filed July 8, 2024) (expert's motion challenging court's factual inaccuracies regarding his qualifications).

[5] Conversation with Edith Beerdsen at the Columbia Science and Technology Law Review Symposium: Judging Science (Nov. 8, 2024).

Courts also appear interested in an expert's prior history.[6] Legal practice guides suggest that "surviving a challenge can add to [an] expert's credentials," while exclusion "can be damaging to that expert" going forward.[7] The few academic articles that mention the phenomenon observe similarly. Irving Prager and Kevin Marshall, for example, suggest that trial and appellate courts "routinely [accept] inquiry into past expert qualification/disqualification."[8] Maxine Goodman reports that courts have substantively relied on previous admissibility decisions, "treating those prior decisions as precedent."[9]

A quick look at the case law confirms these impressions by commentators. As just one example, consider the discussion of the district court in *Littlejohn v. Solar*:[10]

> [In excluding Hendricks, the expert,] this Court joins a litany of other courts to have done the same. See, e.g., Brown, 2020 WL 1479079, at *3 ("Hendricks is not qualified to opine regarding Plaintiffs' emotional or physical damages or the emotional and physical damages that generally arise from FCRA violations"); Valenzuela v. Equifax Info. Servs. LLC, No. 13-cv-2259, 2015 WL 6811585, at *3 (D. Ariz. Nov. 6, 2015) ("Hendricks is not qualified to address physical, emotional, or economic effects of an inaccurate credit report"); Anderson v. Equifax Info. Servs., LLC, No. 16-cv-2038, 2018 WL 1542322, at *5 (D. Kan. Mar. 29, 2018) ("[Hendricks'] opinions regarding Plaintiff's damages amount to little more than speculation as to the injuries Plaintiff

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[6] *E.g.*, Posting of Jules Epstein to sectev.aals@lists.aals.org (Dec. 14, 2020) (on file with author) ("I have seen instances [in the *voir dire* of an expert witness] where it is shown (a) how many times the expert has been permitted to give testimony as an expert in various courts and (b) that a different court previously rejected the person as an expert."); Posting of Martha Hochberger to sectev.aals@lists.aals.org (Dec. 14, 2020) (on file with author) ("In my experience as a litigator, judges want to know the answer to both these questions [prior times testifying and whether the expert has been excluded] before making their determination.").

[7] Avidan J. Stern, *Challenging an Expert's Opinion and Testimony*, in PRACTICING LAW INSTITUTE, FEDERAL CIVIL PRACTICE UPDATE 2011: A PRACTICAL GUIDE TO NEW DEVELOPMENTS, PROCEDURES, & STRATEGIES 101, 104 (Practicing L. Inst., 2011) (noting that experts must disclose past instances of exclusion in future engagements and must acknowledge such exclusions if asked during a future deposition); *see also* Kat S. Hatziavramidis, *Challenging Expert Testimony in Federal Court*, FORENSIS GROUP (Nov. 6, 2015), https://www.forensisgroup.com/resources/expert-legal-witness-blog/challenging-expert-testimony-in-federal-court [https://perma.cc/3NHA-C4ZH].

[8] Irving Prager & Kevin S. Marshall, *Examination of Prior Expert Qualification and/or Disqualification¬(Questionable Questions Under the Rules of Evidence)*, 24 REV. LITIG. 559, 566-67 (2005).

[9] Maxine D. Goodman, *A Hedgehog on the Witness Stand – What's the Big Idea: The Challenges of Using Daubert to Assess Social Science and Nonscientific Testimony*, 59 AM. U. L. REV. 635, 650, 652, 669 (2010) (noting that at least in the case of one expert, "the courts routinely backtrack to prior admissibility decisions as a means of assessing [the expert's] reliability").

[10] Littlejohn v. Solar, No. 1:16-CV-9446-NLH-JS, 2020 WL 2520418 (D.N.J. May 18, 2020).

incurred"); Malverty v. Equifax Info. Servs., LLC, No. 17-cv-1617, 2019 WL 5549146, at *2 (M.D. Fla. Oct. 28, 2019) (Hendricks' opinions "about the types of damages that are common to plaintiffs in comparable circumstances would not assist the jury, as it will be instructed on the proper measure of damages").[11]

Notably, court opinions suggest that an expert's history can cut both ways. Prior exclusions of course suggest a lack of qualification or reliability.[12] But prior admissions also suggest that it is reasonable for the court to admit the expert's testimony.[13] As some courts have observed, however, the ultimate decision is specific to facts of the case.[14]

III. NORMATIVE ASSESSMENT

Having identified the phenomenon of using expert histories, it is worth taking a moment to consider their desirability. Expert histories occupy a curious place in evidence law. Common sense suggests that an expert's admissibility record is useful information that courts can and should use to decide whether that expert's testimony is reliable. The incentive structure may also help rein in experts, who at times have been criticized for being hired guns.[15] On the other hand, previous admissibility decisions technically have little or no actual precedential weight.[16] They are rulings on an expert's opinion on a specific set of events, parties, and legal issues. Further, using expert histories smacks of character evidence. They invite the inference of "once unreliable, now unreliable," and such inferences are disfavored in the legal system and appear unseemly (at least on first blush).[17]

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[11] *Id.* at *3–4; *see also* Nunez v. Allstate, 604 F.3d 840, 848 (5th Cir. 2010) ("Four other judges in the Eastern District of Louisiana have excluded Mr. Hitchcock's testimony under Rule 702 . . . .").

[12] *E.g.*, United States v. Felix, No. 1:17-CR-009, 2019 WL 2744621, at *3 (S.D. Ohio July 1, 2019).

[13] *Hutch Enters., Inc. v. Cincinnati Ins. Co.*, No. 16-CV-01010-WMS-JJM, 2019 WL 5783574, at *4 (W.D.N.Y. Aug. 12, 2019); *In re ResCap Liquidating Tr. Litig.*, 432 F. Supp. 3d 902, 922-23 (D. Minn. 2020).

[14] *E.g.*, *Blair v. Coney*, 340 So. 3d 775, 781-83 (La. 2019) (reviewing the expert's admissibility record, though noting that ultimately "the decision in each case is fact specific"); *United States v. Felix*, No. 1:17-CR-009, 2019 WL 2744621, at *3 (S.D. Ohio July 1, 2019) ("While the findings of other courts are not determinative, the Court does note that they appear to share a common theme, which mirrors precisely what this Court found in the instant case . . . ."); *cf.* Emma Cunliffe & Gary Edmond, *Gaitkeeping in Canada: Mis-Steps in Assessing the Reliability of Expert Testimony*, 92 La. Rev. du B. Can. 327, 354 (2013) (noting a similar argument in Canadian and UK courtrooms— "repeated experience as an expert witness is no guarantee of the reliability of opinions offered by that expert").

[15] *See, e.g.*, Christopher Tarver Robertson, *Blind Expertise*, 85 N.Y.U. L. REV. 174, 177-78 (2010) (noting that adversarial incentives create the appearance of biased "hired gun" experts, undermining credibility).

[16] *See* discussion *infra* Section III.B.

[17] *See* FED. R. EVID. 104(a).

A.   Advantages

One reason for promoting the use of expert histories is that treating past determinations of admissibility as *persuasive* precedent carries many systemic advantages. It encourages greater uniformity and consistency among courts, at least when an expert testifies on similar issues. It is also efficient. Expert issues are frequently difficult, technical, and time-consuming for judges, so quasi-precedent prevents relitigating the same issues repeatedly and allows judges to borrow strength across cases.[18]

Expert histories also potentially impose a moderating influence on expert testimony. Party-appointed experts have long had an uneasy relationship with the legal system. Structurally, the adversarial process pushes experts toward their party's position because experts are selected by, compensated by, and work with only one side.[19] The prospect of future expert opportunities with the same employers only exacerbates this issue.[20] Accounting for expert history counteracts

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[18] The transformation of repeated applications of a legal standard into something more rule-like evokes Justice Holmes's (albeit failed) prediction that the negligence standard in tort would eventually evolve into judicial rules on liability. As Holmes asked in *The Common Law*:

> [S]upposing a state of facts often repeated in practice, is it to be imagined that the court is to go on leaving the [negligence] standard to the jury forever? . . . Either the court will find that the fair teaching of experience is that the conduct complained of usually is or is not blameworthy . . . or it will find the jury oscillating to and fro, and will see the necessity of making up its mind for itself. . . . A judge who has long sat at *nisi prius* ought gradually to acquire a fund of experience which enables him to represent the common sense of the community in ordinary instances far better than an average jury.

OLIVER WENDELL HOLMES, JR., THE COMMON LAW 112-13 (Harvard Univ. Press 2009) (1881); *cf.* Joseph Sanders, *The Bendectin Litigation: A Case Study in the Life Cycle of Mass Torts*, 43 HASTINGS L.J. 301, 386-91 (1992) (discussing "substantive rationing" where courts start stabilizing decisional outcomes in cases involving the same or similar facts); Michael D. Green, *The Road Less Well Traveled (and Seen): Contemporary Lawmaking in Products Liability*, 49 DEPAUL L. REV. 377, 396 (1999) ("[At] some point, courts are prepared to act on [issues common to all cases] and make substantive determinations in individual cases based upon knowledge drawn from the congregation as a whole."). *But see* Kenneth S. Abraham, *Individual Action and Collective Responsibility: The Dilemma of Mass Tort Reform,* 73 VA. L. REV. 845, 880-83 (1987) (discussing the failure of Holmes's prediction because of the heterogeneity of cases).

[19] David E. Bernstein, *Expert Witnesses, Adversarial Bias, and the (Partial) Failure of the Daubert Revolution*, 93 IOWA L. REV. 451, 453-57 (2008) (describing three types of adversarial bias); *see also* Christopher T. Robertson & David V. Yokum, *The Effect of Blinded Experts on Juror Verdicts*, 9 J. EMPIRICAL LEGAL STUD. 765, 766 (2012) (noting studies that suggest that after interactions with a partisan actor, experts present more biased opinions); Robertson, *supra* note 15, at 185 (suggesting that interactions cause an expert "to identify with the lawyers on her side and to become a partisan member of the litigation team").

[20] Robertson, *supra* note 15, at 187-88 (discussing experts' incentives to render opinions favorable to their employers due to the possibility of future business); Mark R. Patterson, *Conflicts of Interest in Scientific Expert Testimony*, 40 WM. & MARY L. REV. 1313, 1337-38 (1999) (same); Lester Brickman, *On the Relevance of the Admissibility of Scientific Evidence: Tort System Outcomes Are Principally Determined by Lawyers' Rates of Return*, 15 CARDOZO L. REV. 1755, 1791 (1994) (arguing that experts have a de facto contingency fee arrangement because of the possibility of future expert roles).

these pro-party incentives by increasing the downstream costs of exclusion. Theoretically and practically speaking, exclusion is a relatively rare remedy reserved for extreme cases.[21] Thus, use of expert history will discourage experts from pushing the envelope or staking out extreme positions, since doing so may endanger their future livelihoods. Indeed, we might expect experts to temper their opinions and follow more mainstream approaches. In a sense, widespread use of expert history means that experts become not just repeat players with their employers, but repeat players with the courts, which creates incentives to maintain their reputations for honesty and competency.[22]

B.   Disadvantages

Most of the concerns about the use of expert histories flow from their seemingly uneasy fit with the evidentiary rules. The most common objection is that expert history is irrelevant,[23] or perhaps more precisely, has low probative value.[24] Because expert testimony is highly case-specific,[25] it is unclear how much a court can learn from prior admissibility determinations. The expert may be the same, but the context, underlying facts, and specific methods used are often not.

Expert history also seems to violate the propensity rule. Using expert history invites the inference that because an expert previously was deemed unqualified or unreliable, the same is true now. Such propensity inferences are heavily regulated under the rules of evidence, and a character for competency or reliability fits under none of the established exceptions.[26]

There are, however, strong rejoinders to these concerns. Most fundamentally, expert history evidence is normally used by the *judge* to determine admissibility, and the court is "not bound by evidence rules" when deciding such preliminary

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[21] Robinson v. GEICO Gen. Ins. Co., 447 F.3d 1096, 1100 (8th Cir. 2006) (citing FED. R. EVID. 702 Advisory Committee's Note to 2000 Amendments) ("A review of the caselaw after Daubert shows that the rejection of expert testimony is the exception rather than the rule.").

[22] *E.g.*, Richard A. Posner, *An Economic Approach to the Law of Evidence*, 51 STAN. L. REV. 1477, 1537 (1999) (suggesting that the repeat nature of expert arrangements creates incentives for "being honest and competent"); *cf.* Bruce A. Green, *The Market for Bad Legal Scholarship: William H. Simon's Experiment in Professional Regulation*, 60 STAN. L. REV. 1605, 1617-18 (2008) (arguing that because experts with questionable opinions will be impeached or embarrassed, and thus less likely to be hired in the future, they have incentives to preserve their reputations).

[23] Ferrara & DiMercurio v. St. Paul Mercury Ins. Co., 240 F.3d 1, 8 n.4 (1st Cir. 2001) (ruling that the views of prior judges about an expert's qualification "would be largely irrelevant," in part because "[a] presiding judge has broad discretion").

[24] Prager & Marshall, *supra* note 8, at 572-74 ("That a judge in a prior case stated that a witness was or was not qualified to render an expert opinion in that case simply is not very probative of the witness's qualifications to testify as an expert in a different case.").

[25] Blair v. Coney, 340 So. 3d 775, 781-83 (La. 2019) (noting that ultimately "the decision in each case is fact specific," although still considering the expert's history).

[26] The closest fit is probably character for truthfulness under Rule 608, but reliability is not truthfulness. *E.g.* FED. R. EVID. 608.

questions.[27] Perhaps it might be important to prevent the jury from hearing this information during *voir dire* of the expert, but that is merely a courtroom management issue, not a substantive objection to using expert histories.[28]

Even setting aside the procedural issues, the rationale of the relevance and character objections do not withstand scrutiny. With regard to relevance, the proposal is not to use expert histories indiscriminately or that a previous exclusion is automatically disqualifying. Judges are obviously discriminating consumers of information, and they can assess whether the conditions of a prior ruling are sufficiently similar to treat it as persuasive precedent. With regard to character, expert histories, while perhaps evocative of character, are not *actually* character evidence. Expert qualifications (i.e., sufficient training and experience) are empirical attributes of a person and are not about propensities.[29] So are claims about unreliability, which tend to target an expert's methods and not the expert's person.

The one potentially character-like inference in this context is the idea that an expert who has used unreliable methods in the past is likely to choose unreliable methods now. But most of the time, the methods themselves will be transparently available for judicial inspection, so the judge can check their similarity (as discussed above regarding relevance). So long as the focus stays on the methods and applications themselves, there is no character danger.

And even if character reasoning occurs, it is not clear that character evidence is harmful in the expert context. As previously noted, making an expert's reputation salient can help moderate expert testimony by making courts treat experts as the repeat players they are. In addition, character evidence can help level the playing field among experts of diverse backgrounds by forcing courts to emphasize actual performance rather than falling back on more dubious markers of expertise.[30]

IV. EMPIRICAL STUDY

Having considered the normative desirability of using expert histories, this Part now turns to the empirical question of whether courts actually use them. More precisely, it asks: Does an expert's past exclusion actually negatively affect the

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[27] FED. R. EVID. 104(a) (establishing that "the court is not bound by evidence rules, except those on privilege" when deciding "any preliminary question about whether a witness is qualified . . . or evidence is admissible").

[28] *See* Posting of D. Michael Risinger to sectev.aals@lists.aals.org (Dec. 14, 2020) (suggesting that judges "are inclined to collapse [*voir dire*] into a single procedure in front of the jury, especially if no one objects, so the issues of improper bolstering and improper admission of another person's evaluation of the value of the testimony may be lost in the shuffle") (on file with author).

[29] *See* FED. R. EVID. 404(a) ("Evidence of a person's character or character trait is not admissible to prove that on a particular occasion the person acted in accordance with the character or trait").

[30] *See* Teneille R. Brown, *The Content of Our Character*, 126 PENN. ST. L. REV. 1, 1-2 (2021) (describing how juries, if deprived of character evidence, are likely to simply substitute their own stereotypes).

expert's future admissibility? Or is the concern of a "mark of exclusion" just paranoia and fearmongering among experts and their attorneys?

A. Data

To empirically study the use of expert histories by courts, I was able to obtain an anonymized database extract from Expert Witness Profiler, LLC (EWP).[31] EWP is a consulting service that researches the background of expert witnesses in the United States, typically at the behest of litigating parties.[32] Their database contains the results of these consulting efforts, which scour the public record (and not just the published case law) for previous proffers and challenges of selected experts.[33] For each *Daubert* challenge, the EWP dataset contains fields listing, among other things, the type of legal claim (tort, contract, etc.), court name, date of challenge, an anonymized expert identification number, the area of expertise, and the outcome.

The dataset includes admissibility rulings from 2000 to 2020.[34] Since our study focuses on the effect of past exclusions on outcomes, I culled the dataset of observations with missing outcomes,[35] along with experts with fewer than three appearances.[36] After the cull, there were 17,010 challenges involving 2,057 different experts. The majority of the observations were from federal courts (55%), whose decisions tend to be better reported and more readily available compared to state courts (45%).

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[31] The EWP database is of course proprietary but was provided for free and without restrictions except that it be used only for academic purposes by the author.

[32] *About*, EXPERT WITNESS PROFILER, https://expertwitnessprofiler.com/about-us (last visited Feb. 4, 2025) [https://perma.cc/832Q-FQAG].

[33] *See Products*, EXPERT WITNESS PROFILER, https://expertwitnessprofiler.com/products (last visited Feb. 4, 2025) [https://perma.cc/3THB-B5HG].

[34] To keep the legal context relatively similar, the study only used challenges starting in the year 2000. Obviously, there is no period of expert evidence doctrine that is truly "stable," but the period immediately after the *Daubert* decision in 1993 was especially turbulent, both in federal and state courts. *See* David E. Bernstein & Jeffrey D. Jackson, *The Daubert Trilogy in the States*, 44 JURIMETRICS J. 351, 354 (2004). However, in 1999 the Supreme Court's decision in *Kumho Tire Co. v. Carmichael*, 526 U.S. 137 (1999), capped the so-called Daubert trilogy, and arguably ushered in a period of relative stability. *See* Bernstein & Jackson, *supra*, at 354-55 (noting that *Kumho Tire* offered clarity by extending Daubert to expert testimony generally). Individual state courts have continued to modify their approaches to expert evidence, but the basic questions and structure of argument have remained largely the same since 2000. *See also* Bernstein & Jackson, *supra*, at 355-56.

[35] One guess is that many of these missing outcomes are cases in which experts were proffered but the case settled before a formal determination on admissibility. Naturally, simply removing the missing data requires an assumption that such data are missing at random. This assumption, however, is arguably reasonable as there is no reason to believe that missing dispositions are biased toward exclusion or admission. In addition, because EWP searches the entire public record and not just the published case law, publication bias concerns are reduced. *See generally* Edward K. Cheng, *Detection and Correction of Case Publication Bias*, 47 J. LEGAL STUD. 151 (2018) (discussing why in some contexts, we should expect the published case law to be biased in favor of exclusion).

[36] Removing these infrequent experts removed approximately 480 experts from consideration.
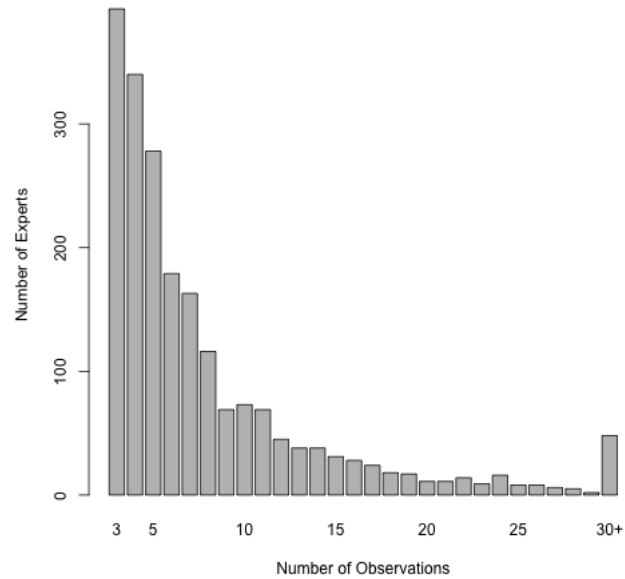
Figure 1: Distribution of experts by number of observed proffers

Figures 1–4 illustrate some additional attributes of the dataset. Figure 1 shows the distribution of experts by the number of observations or proffers in the dataset. As might be expected, the vast majority of experts only appear a handful of times, although there are clearly some prolific experts. Again, the distribution only contains experts with three or more observations by design.
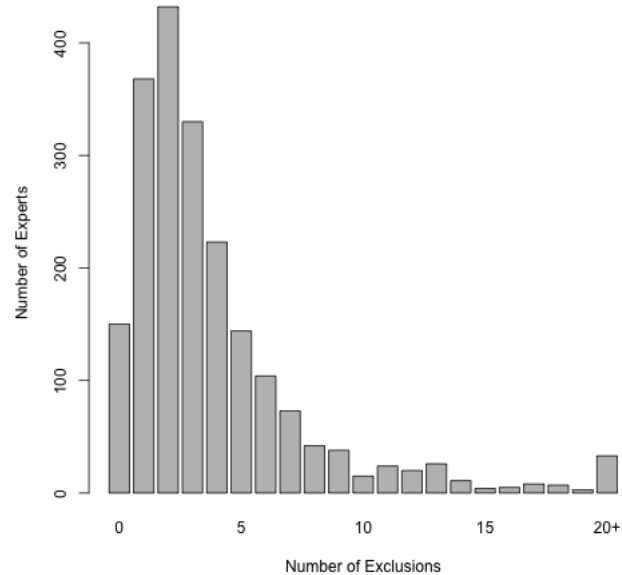
Figure 2: Distribution of experts by number of exclusions
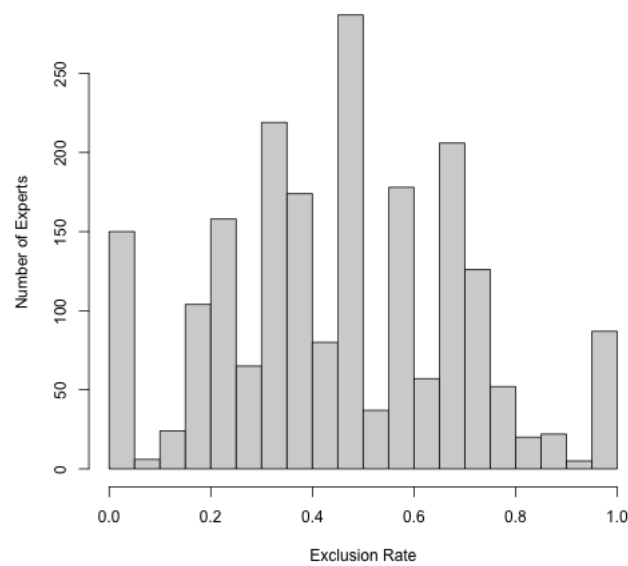
Figure 3: Distribution of experts by exclusion rate

Figure 2 shows the distribution of experts by number of exclusions, with the vast majority of experts having five or fewer exclusions. Figure 3 shows the distribution by exclusion *rate*. The granularity of the histogram in Figure 3 is likely a function of the large number of experts with a small number of observations. For example, an expert with four observations can only have an exclusion rate of 0, 0.25, 0.5, 0.75, or 1.

Figure 4: Distribution of observations by area of law

Figure 4 shows a breakdown of the observations by case type. As might be expected, the majority of cases are in torts (64%). The next highest category is civil rights (7%), perhaps because statistical evidence is frequently used to prove discrimination claims.
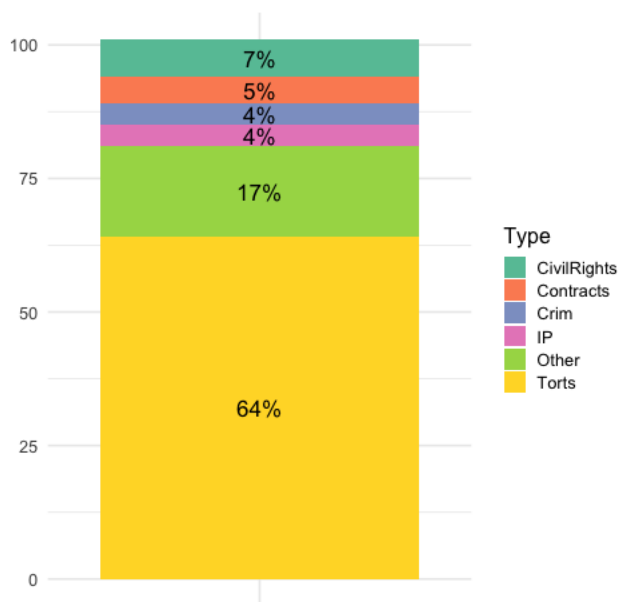
The proffered experts had all kinds of different expertise, including medicine, business, finance, and engineering. The subject area fields, however, were coded in a descriptive way and could not be easily used as control variables without considerable recoding.

B.   Methods

The most basic question is whether the presence of a past exclusion increases the chance that an expert will be excluded in a future case. In answering this question, the immediate problem is that experts have different rates of exclusion based on their individual characteristics such as background, expertise, and skills. Thus, the more precise question is: controlling for each expert's individual risk of exclusion, does a past exclusion (however measured) increase the likelihood of future exclusion? The null hypothesis is that each expert's probability of exclusion is constant, in the sense that the expert's own underlying reliability drives admissibility determinations, independent of any prior determinations. The alternative is that the likelihood of exclusion (controlling for the expert's baseline reliability) is influenced by prior exclusions—in other words, that the ordering of exclusions matters.

A good starting point for this problem is a frailty model, as previously proposed by Lars Vedel Kessing, Elisabeth Wreford Olson, and Per Kragh Andersen in the

psychiatric literature.[37] In a series of articles, they were interested in the recurrence of psychiatric affective disorders (for example, bipolar disorder) and whether the frequency of recurrence was dependent on the number of previous episodes. Specifically, some in psychiatric literature had posited a sensitization hypothesis, in which "the likelihood of subsequent episodes increases with every new episode that occurs."[38] The question was whether that sensitization hypothesis was true or whether episodes were simply random events that occurred with a constant probability.

The problem investigated by Kessing et al. is of course closely analogous to our expert history question. The primary difference is that the frailty model proposed by Kessing et al. involves continuous time. The expert history problem, however, is more appropriately considered as a discrete-time problem, since each case in which an expert becomes involved is a discrete point at which exclusion or admission can occur. The Kessing model therefore had to be modified to make it appropriate for the discrete-time context. The conceptual idea, however, remains the same. More details of the discrete-time recurrence model and possible alternative variations can be found in the Technical Appendix, but the basic model used in this study is:

$$logit\left(h_i(t_j)\right) = Z_i + \beta^* X_{ij}^*$$

where h_i is the discrete-time hazard function (the probability of exclusion) for expert i at each discrete time t_j; Z_i is a random effect capturing the baseline exclusion risk for each expert i; X_{ij}^* is a measure of past exclusions (see below) for expert i and time t_j; and β^* is the parameter of interest, namely how large an effect the past exclusion measure has on the expert's risk of exclusion.

Note that there are many reasonable past exclusion measures, generically labeled X^*_{ij} in the model above. For example, X^* could be the absolute number of prior exclusions (X_{prev}), whether the expert had any prior exclusions at all (X_0), the rate of exclusion (X_{excl}), or whether the most immediate prior case resulted in an exclusion (X_{immed}). All four of these measures were ultimately investigated.[39]

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[37] Lars Vedel Kessing, Elisabeth Wreford Olsen & Per Kragh Andersen, *Recurrence in Affective Disorder: Analyses with Frailty Models*, 149 AM. J. EPIDEMIOLOGY 404, 406 (1999); Lars Vedel Kessing, *Recurrence in Affective Disorder: II. Effect of Age and Gender*, 172 BRIT. J. PSYCHIATRY 29, 33 (1998).

[38] Kessing, Olsen & Andersen, *supra* note 37, at 404.

[39] X_{immed} was not proposed in the original pre-registration, *see infra*, but seemed like an obvious oversight when it came time to code the analysis.

C.   *Preregistration and Simulations*

In line with current best practices in empirical legal scholarship,[40] this study and its proposed methods were pre-registered on the Open Science Framework (OSF) platform.[41] One significant concern in modern data analysis is the multiple testing problem, where researchers revisit a dataset repeatedly with different models in an attempt to find interesting (and statistically significant) results.[42] These repeated attempts, which are often not reported in published work, invalidate the statistical bases of the tests, and they risk the publication of spurious results.[43] Pre-registration combats these problems by requiring researchers to pre-commit to their research methods and to be mindful of the number of statistical tests they are running on their data.[44]

As a side note, this study was my first experience with the pre-registration process, and I found it to be an excellent disciplining mechanism. Pre-registration demanded careful thought about modelling decisions ahead of time, and it made me run simulations and analyses on simulated data to ensure that the proposed methods would behave as expected. For example, all of the methods here were first tested on simulated sets of experts with admissibility rates similar to the actual datasets but where the influence of prior exclusions were set to known values. Only after I was satisfied with the results on the simulated data did I move to the actual EWP data.

The drawback of pre-registration is that the procedure can be constricting, especially when working with a fixed dataset (as opposed to when more data can be collected). To prevent "contamination" of the study, one tends to take great pains to avoid the actual dataset, which inhibits the researcher from familiarizing himself with its nuances and intricacies. But ignorance about the dataset necessarily means that one cannot be as directed or creative in building models. Obviously, pre-registration is not meant to restrict creativity and investigation, so departures from the pre-registration (transparently recorded) are to be expected, but the psychological constraints are real. Ultimately, good and responsible research requires finding some happy medium between the pre-registration baseline and subsequent departures. Achieving that balance, however, requires time and experience.

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[40] *See, e.g.*, Jason Chin et al., *Improving the Credibility of Empirical Legal Research: Practical Suggestions for Researchers, Journals, and Law Schools*, 3 LAW, TECH. & HUMANS 1, 4, 19 (2021); Edith Beerdsen, *Litigation Science After the Knowledge Crisis,* 106 CORNELL L. REV. 529, 562-64 (2021); Edith Beerdsen, *Unsticking Litigation Science*, 25 COLUM. SCI. & TECH. L. REV. 1 (forthcoming 2025).

[41] For the pre-registration documents, see Edward K. Cheng, *Expert Histories*, CTR. FOR OPEN SCI. (Nov. 27, 2024), https://doi.org/10.17605/OSF.IO/XAVFW [https://perma.cc/X5E7-7WDR].

[42] Chin et al., *supra* note 40, at 4.

[43] *See id.*

[44] *Id.*

D.   Results

Estimation of the frailty models suggest that past exclusions have a statistically significant effect on an expert's likelihood of exclusion in the current case, beyond an expert's own "baseline" rate of exclusion. The phenomenon is observed regardless of whether the mechanism is modeled as the absolute number of previous exclusions (X_{prev}), whether there was ever a previous exclusion (X_0), or whether the immediately previous ruling resulted in exclusion (X_{immed}).[45] The estimation results are shown in Figure 5.

Measure Used in Model	Coefficient (β)
Previous number of exclusions (X_{prev})	0.009583**
Any previous exclusion (X_0)	0.08142*
Previous exclusion rate (X_{excl})	0.005917
Immediately prior exclusion (X_{immed})	0.10004**

* p<0.05, ** p<0.01

Figure 5: Results of frailty model estimation

One immediate observation is that while the results show a statistically significant effect for an expert's past history, the magnitude of that effect is quite small. For example, if the previous number of exclusions (X_{prev}) is used as the measure, each previous exclusion raises an expert's risk of future exclusion by a paltry 0.25%. Alternatively, if immediate prior exclusion (X_{immed}) is the measure, being excluded in the immediately preceding case only increases an expert's risk of exclusion by approximately 3%.[46]

Although small, the observed effect seems quite robust. For one thing, three of the four models found statistically significant effects. In simulation studies using independent datasets of similar size and character (i.e., where the risk of exclusion

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[45] As seen in Figure 5, the coefficient for the exclusion rate (X_{excl}) is not statistically significant. One wonders if an expert's running exclusion rate (i.e., the exclusion rate up to that the point in time) is too highly correlated with the expert's individual exclusion rate (i.e., the random effect term) to be of any additional explanatory value to the model.

[46] The effective changes in probability presented here were estimated through data simulations to get a sense of the change in the underlying probability necessary to generate the coefficients (β) estimated by the frailty model.

was independent of past exclusions), spurious results naturally occurred at times but very rarely with three models simultaneously and almost never at the p-levels that we see in Figure 5.[47] Additionally, analyzing only the tort cases in the dataset (the dominant 64% of the sample), which might be thought more coherent, yields the same results. The effect sizes are somewhat, although not appreciably, larger.

V.   DISCUSSION

A.   Practical Effect Size

The results from the empirical study—showing a small but robust effect for past exclusions—are at first a bit puzzling. One might have thought initially that the two likely outcomes to this study were either: i) no effect, because the fears of experts and their attorneys are unfounded; or ii) a large effect, such as a jump of 25% in the probability of exclusions. Here, we find that judges use prior exclusions, confirming the intuitions of attorneys and experts, but the effect is small.

Despite the small size, there are some reasons to believe that the observed effect is practically important.[48]

1.   Noisy data.

There are many external factors that make detecting any effect difficult from the outset. From one admissibility ruling to the next, the facts and context may vary considerably, making previous rulings of an expert's reliability less relevant or less compelling. If an expert who was previously excluded testifies about the same topic in the same jurisdiction, the effect is likely to be much stronger than if the expert testifies about a different topic, using a different method, in a different jurisdiction. Since the study aggregates all these cases, any large effect in the former cases will be watered down by the minimal effect in the latter cases. In addition, the inclination to look at expert history and the weight given to it, or the inclination to exclude expert evidence at all can vary by judge and by jurisdiction.

In addition, the original dataset contained a lot of missing data. The original dataset contained entries for approximately 50,000 proffers, but only about 17,000 had recorded admissibility outcomes. These missing observations were culled from the dataset. Even if these missing observations are unbiased, however, they create

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[47] Serendipitously, at one point, a coding error accidentally scrambled the time order of each expert's cases, effectively generating a null distribution. Analysis of that scrambled dataset also correctly found no effect.

[48] Statistical significance alone is insufficient because given a large enough sample size, a study can almost always find a "statistically significant" effect, unless there is truly no relationship. The question for the real world, however, is not whether there is *any* relationship, but rather whether there is a practically important one. *E.g.*, Gail M. Sullivan & Richard Feinn, *Using Effect Size—or Why the P Value Is Not Enough,* 4 J. GRAD. MED. EDUC. 279, 279-80 (2012) ("With a sufficiently large sample, a statistical test will almost always demonstrate a significant difference, unless there is no effect whatsoever, that is, when the effect size is exactly zero; yet very small differences, even if significant, are often meaningless.").

noise. They interfere with the ability to count prior exclusions accurately and to determine exactly the most immediate prior results (X_{immed}).

2. External dampeners.

The small magnitude of the observed effect may also be the result of attorney adjustments to the phenomenon. If a negative exclusion history (however defined) indeed increases the risk of exclusion in the future, then we would expect attorneys to decline hiring experts so tarnished or at least to wait until an appropriate "cooling off" period has passed. Such an attorney response would dampen any observable effect of past exclusions because the experts offered in court would already be pre-selected to be less tainted by their previous exclusions, either because the topic is different or because sufficient time has elapsed. It may be possible to test this hypothesis in future work by looking at the amount of time between an expert's appearances and whether that depends on prior exclusions.[49]

In addition to attorney behavior, expert adjustments may also dampen the effect. For example, an exclusion might prompt an expert to rethink his methods or even his presentation style, all of which would reduce the risk of exclusion in the future. One symposium participant recalled that Dennis Carlson, the expert famously excluded in *Kumho Tire Co. v. Carmichael*,[50] recounted later how he changed the way he approached his expert work after being excluded in the case.[51] Such "expert learning" violates a key assumption of the frailty model used in the study, which is that an individual expert's risk of exclusion remains static throughout.

3. Measurement issues.

One might wonder if the four measures of exclusion used to capture the effect of expert history may be too crude to capture the effect fully. For example, it may not just be the *immediate* prior challenge that matters but rather a set of immediately prior challenges, weighted in some way. And surely, the mechanism for accounting for the number of prior exclusions is not linear.

Exploratory attempts to find a better measure of "past exclusion," however, did not result in appreciably different outcomes.[52] For example, instead of looking at the immediately previous challenge, if one looks at a "moving window" of the *n* most recent challenges, with *n* ranging from 2 to 4, all of those models again find a

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[49] *See infra* Section V.C.

[50] 526 U.S. 137, 158 (1999).

[51] *Expert Histories (2024 Symposium Edition Episode 1)*, COLUMBIA SCI. & TECH. L. REV.: PODCAST, at 52:10 (Nov. 8, 2024), https://journals.library.columbia.edu/index.php/stlr/podcast.

[52] These attempts are best characterized as exploratory, because they deviate from the pre-registration document and start creating multiple testing issues. For example, beyond the outcome discussed in the text *infra*, I also tried a past exclusion measure that looked at if there were any exclusions in the preceding *n* cases. With the exception of *n*=1 (part of the original study), all of the other models (*n*=2,3,4) were of even small magnitude and were not statistically significant.

modest, statistically significant effect. Each additional exclusion within the window results in an increase in exclusion probability of approximately 1.2%-1.6%.[53]

B. Limitations

In interpreting the results, one should consider several important limitations to this study. First, the dataset may suffer from selection bias. The Expert Witness Profiler dataset is emphatically not a random sample and is the outgrowth of requests from litigants. If litigants only pay for expert history inquiries when they sense that an expert may be vulnerable, that would make the observed pool considerably different from the population.

Second, what constitutes an "exclusion" is not necessarily straightforward. For example, for purposes of this study, any exclusion of an expert was considered to be an "exclusion." Being admitted in part and excluded in part was considered to be a negative result, because technically, the expert was indeed excluded on some issue. This coding, however, is necessarily imprecise. For example, one might dispute whether an expert who is allowed to testify about the lion's share of proposed testimony but not a few choice issues is indeed "excluded." Relatedly, the study did not consider the grounds for exclusion, which can range from basic qualifications, to methods, to application of those methods, to the "fit" or relevance of the expert conclusion.[54]

Finally, the dataset does not allow for direct observation of when an expert is never hired again. One of the anecdotal fears related by experts is that if they were excluded, their future opportunities would simply dry up. Because Expert Witness Profiler conducts research into an expert's history typically at the request of opposing parties,[55] we only observe experts who are already proffered (or at least proffered at the time of investigation). We are unable to observe subsequent history (or lack thereof).

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[53] The "best" model of the set as measured by the Akaike information criterion (AIC) model selection criterion is a moving window considering the four most recent proffers. That results in a coefficient of 0.06517 (p<0.001), which corresponds to an increase in exclusion probability of 1.6% for each additional exclusion in the window.

[54] FED. R. EVID. 702 Advisory Committee's Note to 2000 Amendments.

[55] A largely unexplored question is whether a proponent should research their own expert's history. One would normally assume that an expert would know their own personal history, but that is not necessarily true. Legal rulings not infrequently occur without an expert's knowledge or further contact from the hiring attorney. In one interesting example, an expert was excluded as unqualified when the plaintiff's attorney withdrew, resulting in a procedural default. *See* Ashish Arun, *James E. Lewis, Transportation Safety Expert Witness Stands Vindicated; Judge Confirms Exclusion was Procedural and Unfortunate*, EXPERT WITNESS PROFILER *(*Sept. 27, 2024), https://expertwitnessprofiler.com/james-e-lewis-transportation-safety-expert-witness-stands-vindicated-judge-confirms-exclusion-was-procedural-and-unfortunate[https://perma.cc/W2YK-3SQB].

C. Directions for Future Research

Perhaps the most fruitful avenue of future research into expert histories would be to focus on attorney behavior in response to exclusions. As noted, if previous exclusions cause courts to become skeptical of an expert, we would expect attorneys to stop using these experts. Courts would therefore be highly unlikely to see such at-risk experts again and would never have the chance to exclude them. Establishing that attorneys indeed shy away from previously excluded experts would provide another perspective on expert histories and also confirm the suspicion that attorney behavior is muting the observed effect of prior exclusions.

One approach to studying attorney behavior would be to consider the time differential between expert proffers. The working hypothesis would be that experts with checkered admissibility histories would be proffered less frequently, something that, anecdotally, lawyers and experts have suggested is true.

VI. CONCLUSION

This brief article has made progress in our understanding of expert histories in three important ways:

First, the article has suggested that accounting for expert history offers potential normative benefits for the legal system. Expert history can help courts process complex expert testimony more efficiently and consistently. More importantly, expert history may exercise a moderating influence on partisan experts, partly ameliorating the so-called "battle of the experts" problem faced by courts.

Second, the empirical study of expert admissibility records suggests a robust and statistically significant effect of past exclusions on later admissibility. The effect size, however, is small, perhaps because of noise in the dataset, but perhaps because of other external considerations. For example, attorneys may be muting the effect of past exclusions by simply declining to hire tainted experts in future litigation. Further work is needed to see if the effect can be better isolated and if the small observed effect size is indeed the result of these factors.

Finally, perhaps the most important contribution of this article is that it has brought the issue of expert histories to light. Experts and their attorneys frequently report that an expert's prior exclusion history influences future admissibility decisions, yet this phenomenon has not previously been the topic of focused academic study. Hopefully, the discussion here will spur future interest in and research on this practice.

TECHNICAL APPENDIX

The frailty model proposed by Kessing, et al.,[56] is an extension of the standard Cox regression model. Its hazard function looks like:

$$\lambda_i(t) = \lambda_0(t)Z_i exp\left(\sum_k \beta_k X_k\right) \qquad (1)$$

where $\lambda_0(t)$ is the baseline hazard function (that can be time-variant), Z_i is the frailty of patient i, and the X_k are various covariates.

As noted in Part IV.B., however, this frailty model assumes continuous time. The expert history problem, on the other hand, is more appropriately considered as a discrete-time problem. To construct a discrete-time frailty model, we can incorporate ideas from the discrete-time survival model proposed by Singer (2003)[57]:

$$logit\left(h(t_j)\right) = \sum_{k=1}^{J} \alpha_k D_{jk} + \sum_{l=1}^{N} \beta_l X_l \qquad (2)$$

where $h(t_j)$ is the discrete baseline hazard function at discrete time t_j, $j = 1, 2, \ldots, J$. D_k are a set of indicator variables that equal 1 when $k = j$, so that in combination, the α_k's form a completely general baseline discrete-time hazard function. The X_l's are covariates with coefficients β_l.

Combining the ideas of Kessing (1999) and Singer (2003), we can construct a discrete-time frailty model:

$$logit\left(h_i(t_j)\right) = \sum_{k=1}^{J} \alpha_k D_{ijk} + Z_i + \sum_{l=1}^{L} \beta_l X_{il} \qquad (3)$$

where $h_i(t_j)$ is the hazard (or probability of exclusion) for individual i at time t_j. Z_i is a random effect for the baseline frailty of individual i, and the α_k's once again form a general baseline time-varying hazard function. The X_{il}'s are covariates of individual i and have coefficients β_l.

We can now simplify this general frailty model to study the expert history problem. Since the baseline hazard for each expert is assumed to be constant (i.e., time-invariant), we can dispense with the summation of α's. Any variance among the experts is captured with the random effect term Z_i. We have one covariate of

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[56] Kessing, Olsen & Andersen, *supra* note 37.

[57] JUDITH D. SINGER & JOHN B. WILLET, APPLIED LONGITUDINAL DATA ANALYSIS: MODELIGN CHANGE AND EVENT OCCURRENCE 330- 339 (1993).

interest, the chosen measure of an expert's previous exclusions, which we will call X^*. The resulting model looks like:

$$logit\left(h_i(t_j)\right) = Z_i + \beta^* X_{ij}^*$$
(4)

where X_i^* is the exclusion measure for expert i at time t_j, and β^* is the parameter of interest.