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Comment: the doctrine of chances, brides of the bath and a reply to Sean Sullivan

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1. Introduction: what is the doctrine of chances and what is the thesis of this comment?

The ‘Doctrine of Chances’ is a doctrine of probability that purports to solve an apparent logical conundrum or contradiction in the law of Evidence.

On the one hand, the law of Evidence purports to ban evidence which invites the fact-finder to reason that because a criminal defendant was involved in certain other or former events, he has a propensity to engage in such acts and therefore engaged in the similar act charged in the indictment. Yet, on the other hand, Evidence law admits evidence of other very similar acts to prove the commission of the charged act under the rubrics ‘motive, opportunity, intent, preparation, plan, knowledge, identity, or absence of mistake or lack of accident’ or the like (‘M.O.I.P.P.K.I.M.A’ for short).¹ Under these ‘MOIPPKIMA’ or similar rubrics, evidence such as the following is commonly admitted,² which evidence plainly seems in each case to depend on propensity reasoning for its probative value:

- Other drownings of defendant’s wives in the bathtub received to prove the charged culpable tub drowning at the hands of defendant (where money or property was inherited by defendant each time) (admitted under rubrics like ‘motive’, ‘intent’, ‘plan’, ‘design’, ‘pattern’, ‘lack of accident’)³;
- Defendant’s previous lascivious rubbing up against a person of the opposite sex and secretly taking their wallet, received to prove the correctness of the current charge of doing exactly the same thing (admitted as showing ‘plan’, ‘system’, ‘systematic course of conduct’)⁴;

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¹ For one version of the rule, see Fed. R. Evid. 404(b), which is a fairly typical articulation of the rule in a considerable number of jurisdictions. Other words are sometimes added to the MOIPPKIMA list, such as ‘design’, ‘pattern’, ‘system’, ‘systematic course of conduct’, ‘common plan or design’, ‘distinctive modus operandi’, ‘distinctive “signature”’, etc. The list of factors is not meant to be exhaustive and is usually preceded, as it is in the Federal Rule, by the phrase ‘such as’. The traditional rule does not say the evidence inevitably comes in if it is relevant to a MOIPPKIMA or similar catchword. The judge is called upon to decide if it is genuinely probative of that and if there is a risk of prejudice, unjustified delay, and the like, that on the facts, substantially outweighs the probative value of the extrinsic act evidence offered. This screening is done pursuant to the *ad hoc* power given the judge to screen evidence that is relevant and admissible under other rules for risks of this sort. See, e.g. Fed. R. Evid. 403.

² Admitted into evidence, which does not necessarily mean it is sufficient to convict. The evidence is submitted to the jury to decide how much, if any, it weighs, in combination with the other evidence, towards guilt of the charged offense. Submission to the jury means, however, that an inference towards guilt can permissibly be drawn.

³ *Rex v. Smith*, 114 L.T.R. 239 (Crim. App.), 11 Ct. App. R. 229, 84 L.J.K.B. 2153 (England, 1915).

⁴ *Jones v. State*, 376 S.W.2d 842 (Tex. 1964).

- Previous fires afflicting defendant’s property resulting in his collection of fire insurance proceeds, received to prove defendant purposely burned his present barn down to collect insurance (admitted as showing ‘motive’, ‘intent’, ‘knowledge’)⁵;
- Defendant post office worker’s previous possession of credit cards not belonging to him received to prove coins he was found with were stolen by him from the mail rather than being returned by him because they fell out of an envelope in the mail (admitted as showing ‘intent’)⁶;
- In a prosecution for knowingly purchasing goods with a check backed by insufficient funds, or purchasing them with a forged check or counterfeit money (found in a store’s till at the end of the day; could have come from any customer), prior such purchases by defendant accomplished by such means have been admitted to prove guilt (‘identity’, ‘motive’, ‘opportunity’, ‘plan’, ‘knowledge’, ‘intent’, ‘opportunity’, ‘modus operandi’, ‘absence of mistake or accident’).⁷

These admittances of evidence certainly do seem to invite and depend for their probative force on the fact-finder (the jury) finding a propensity on the part of defendant to do the acts. Yet this kind of propensity reasoning is supposedly banned.

The ‘doctrine of chances’ claims to reconcile the apparent contradiction by demonstrating that admission of evidence of defendant’s similar acts or events to prove guilt can in many of these kinds of cases be justified on the basis of probabilities alone without the use of propensity inference. The doctrine is a way of describing according to the laws of probability just how evidence of other potentially wrongful events that a criminal defendant may have been involved in at other times, can affect the chances of his guilt of the offense he is charged with. In doctrine of chances parlance, the charged offense is called the intrinsic event, and the other event is called the extrinsic or evidential event.

The doctrine, briefly summarized, is that the relevance or probative value of the one event in proving the other varies with the odds that the two would occur together by chance. This far, it is unexceptionable. There is, however, a scholarly debate over just how to calculate those odds.⁸

But most proponents of the doctrine of chances—whatever method of calculating the odds they use—hold that the doctrine describes a reasoning process whereby the occurrence of the extrinsic event can logically increase the chances of guilt of the intrinsic one without the logical necessity of assuming defendant had a propensity to do such acts. Eliminating propensity in the reasoning process

⁵ *Hammann v. Hartford Accid. & Indem. Co.*, 620 F.2d 588 (6th Cir. 1980).

⁶ *U.S. v. Beechum*, 582 F.2d 898 (5th Cir. 1978). See also *Huddleston v. U.S.*, 485 U.S. 681 (1988) (possession of other stolen goods on another occasion, was permitted to prove defendant had knowledge that the goods he was presently caught with on present occasion were stolen, even though goods were of an entirely different nature). In *Huddleston*, the U.S. Supreme Court specifically endorsed receiving evidence under the MOIPPKIMA catchwords, here ‘knowledge’.

⁷ See Paul F. Rothstein, Myrna S. Raeder and David Crump (2012), *Evidence in a Nutshell*, 6th edn (West Co.) 129–30.

Important note: The cases I address in the present article and purportedly explained by the doctrine of chances are these kinds of cases, where the evidence is held admissible by reason of the similarity of the other events to the charged act. Another class of cases is also sometimes admitted under some of the same catchwords in the MOIPPKIMA rubric, but which do not depend on similarity. For example, evidence might be received that defendant robbed a bank in order to get funds to equip, recruit personnel for, and carry out, a terrorist bombing of a city, the latter being the charged offense. These kinds of cases do not present the same problem of seeming to involve, and clearly do not involve, a human propensity to repeat.

⁸ The literature on this debate as it has taken place prior to the present debate between me and Mr. Sullivan is well canvassed and summarized throughout Mr. Sullivan’s article cited immediately *infra*. See footnote 3 *et seq.* in his article for citations to some of the literature.

is important because, as noted, Evidence law at least as interpreted in a number of jurisdictions generally seems to at least pay lip service to (or perhaps more than lip service to) the notion that evidence dependent on propensity is banned.

Sean P. Sullivan's thought-provoking article, 'Probative Inference from Phenomenal Coincidence: Demystifying the Doctrine of Chances',⁹ is the latest scholarly attempt both to propound a sound probabilistic theory of calculating the odds and to demonstrate that the evidence can be offered in a way that does not involve propensity reasoning.

He does it all with more precision and careful attention to probability theory than does a good deal of the other scholarly writing in the area. He makes a welcome and perceptive contribution to the field by pointing out some errors in probabilistic reasoning other writers have made. But he ultimately fails to convince that propensity does not need to be involved.

Evidence law has two pertinent concerns that come into play in these cases. The first is that an offered piece of evidence be relevant to, i.e. probative of, the proposition for which it is offered (guilt of the charged offense, here). The second is that the means by which the fact-finder (usually the jury) reasons to the increased probability of guilt from the evidence must not invite prejudicial thinking. Prejudicial thinking usually means exaggerating inferences or reaching decision on an improper basis such as an emotional or personal moral ground regardless of the real merits.

There are separate evidence rules requiring relevance, from those attempting to reduce prejudice. Both must be satisfied. The rule disapproving of propensity evidence is of the latter sort: it may exclude even clearly relevant evidence if the relevance depends on a forbidden propensity, because such propensity reasoning invites prejudicial thinking. Propensity evidence, though it may be inadmissible for reasons of prejudice, usually is relevant.¹⁰

The doctrine of chances generally deals only with the first of Evidence law's concerns, relevance, and Mr. Sullivan's article for the most part does the same.¹¹ Descriptions of the doctrine of chances usually assume without much discussion that the prejudice problem takes care of itself and should not be of much concern if the chances of guilt are increased sufficiently by the extrinsic evidence based on a sound probability theory that does not involve the forbidden propensity inference. The chances are deemed increased sufficiently whenever, on the particular facts, the joint occurrence of the extrinsic and intrinsic events is 'so highly unusual that random chance alone is extremely unlikely to account for it'. This is a pretty vague standard. The discussions—including Mr. Sullivan's—normally do not address how to determine exactly where on the scale of probability is 'high enough' to allay concerns.

⁹ Sean P. Sullivan, 'Probative inference from phenomenal coincidence: demystifying the doctrine of chances' (2014) *Law, Probability & Risk*, 27–50.

¹⁰ The prohibition on propensity reasoning in the law excludes admittedly relevant, probative evidence, not because it is illogical or irrelevant and does not increase the probability of guilt, but rather excludes it because of policy concerns such as the danger of the jury indulging in exaggeration of the strength of the inference, or indulging in punishment for past wrongs without a close look at the evidence of the charged, intrinsic act; and a danger that police might be tempted to forgo full investigation and merely 'round up the usual suspects' for every new crime (to use the words of the police inspector in the movie *Casablanca*); not to mention the difficulty of a criminal defendant in refuting numerous uncharged acts. See, e.g., *U.S. v. Calvert*, 523 F.2d 895 (8th Cir. 1975).

¹¹ But current law has an additional rule (besides the indispensable requirement of relevancy) rendering propensity-based (or character-based) evidence inadmissible (with exceptions) even if relevant or probative, because of the supervening policies. So offered evidence must survive a relevancy/probativity analysis and a propensity/character rule analysis, to be admissible. Even if the evidence survives the relevancy analysis, if the reasoning it solicits from the fact-finder involves a propensity that the character/propensity rule bans, it will be inadmissible. Since many courts regard any propensity as suspect, not just character propensity, it is important to know if the solicited reasoning involves propensity of any kind.

Sometimes, it is said that it would be enough if joint occurrence by random chance would be a 'phenomenal' or 'highly extraordinary' coincidence.¹² This is also rather vague.

Advocates of the doctrine of chances say, as does Mr. Sullivan, that when other possibly criminal occurrences involving defendant (extrinsic occurrences) logically increase the probability of the intrinsic act charged, the evidence of the extrinsic occurrences should be regarded as at least somewhat probative of the occurrence of the intrinsic crime charged. In many cases, they say, a rational mind can reach a conclusion that the evidence of the extrinsic act does indeed increase the probability of the intrinsic act, and nothing that can be called propensity need be involved in reaching that conclusion: the conclusion can be reached on standard relevancy and probability theory without reasoning through or by means of propensity. We may call that the 'doctrine of chances' but it actually purports to be nothing other than an application of conventional probability theory. These commentators and Mr. Sullivan disagree on how and what conventional principles of probability theory should be applied to the fact situation we are dealing with, but they agree that probability theory is the controlling concept and that it can reach the result of relevance or probative value without the intervention of propensity in many cases.

It is my thesis in this article that the doctrine of chances—in any acceptable logical form including that described by Mr. Sullivan—does properly describe when this kind of 'other wrongs' evidence is relevant, and how probative it is, but that relevance and probative value where this kind of proof is offered *does depend on propensity reasoning even under these theories* even in the cases where they say it does not. I am not simply arguing that the jury will indulge propensity reasoning even though they are not supposed to and are instructed not to. Rather I am arguing that propensity reasoning is a fundamentally necessary step in the inferential process they are told to perform.

However, it is also my contention that it is not necessarily the type of propensity that the rule against propensity is meant to exclude. If properly understood, the rule and its exceptions will often admit the evidence when it is strong; will screen out only extremely prejudicial evidence or evidence of low probative value; and will do as satisfactory a job as is realistically possible in a large and diverse court system administered by probabilistically unsophisticated lawyers, judges and juries. In fact, it will produce results quite similar to what a more technically correct probabilistic approach, including Mr. Sullivan's, would produce, particularly if a second step is applied after the relevance determination to screen out prejudicial evidence.

2. The doctrine of chances necessarily involves propensity reasoning

2.1 *Matters on which I think Mr. Sullivan and I agree*

The doctrine of chances—by Mr. Sullivan's own description—is merely normal relevance/probative value/probability reasoning, and I agree. So let us describe, a little more particularly, what judges and

¹² 'Phenomenal' here meaning huge, very extraordinary, improbable, or dramatic, rather than the more technical use of the term as connoting merely occurrence. Sometimes in the literature it is hard to tell which meaning is intended. Some versions of the doctrine of chances say that if under standard probability theory, the chances of occurrence of the intrinsic (charged) act are increased dramatically by the occurrence of the extrinsic act, evidence of the extrinsic act should be received. In other words, when the odds against random chance explaining the concurrence of the evidential and the charged events are very large, the evidence should be admissible. Mr. Sullivan's version is more restrained. He maintains that if the probability is increased, the evidence should be regarded as probative (i.e. relevant, but not necessarily admissible, the latter of which he largely leaves to another day). How probative it is he recognizes in common with the other scholars, depends on how much the probability is increased (applying standard probability principles) and he declines to answer the question of how probative it needs to be to be admissible.

juries would be asked to do to assess relevance and probative value under normal probabilistic reasoning in a case involving an offered extrinsic event to prove an intrinsic act of the kind we are discussing. I describe, in this section, how I view this normal probabilistic reasoning process, and I think it is compatible with Sullivan's view thereof, though he may describe it differently. We do disagree over whether under this normal reasoning, the process of inference of the one event from the other has a component that can be called propensity.

Take a case like *Brides of the Bath*,¹³ Mr. Sullivan's central example. He has done a marvelous job of collecting the facts of the case from various sources. In that case, defendant was on trial for murdering his propertied wife, who had recognized him in her will and in her life insurance policy. She was found drowned in the bathtub. Defendant claimed she drowned by accident. The prosecution offered evidence that two other of his propertied wives who recognized him in their wills had also been found drowned in the bathtub under remarkably similar facts in other respects, too. The court admitted the evidence on the grounds that it showed not character or propensity but such things as pattern, design or absence of accident. The defendant was convicted largely on the basis of this evidence alone. The decision is generally regarded as the precursor of the standard modern evidence rule that the evidence could be admissible on other theories than propensity or character, and such other theories might be described as 'motive, opportunity, intent, preparation, plan, knowledge, absence of mistake or lack of accident' or other such words (collectively referred to by the acronym M.O.I.P.P.K.I.M.A.).¹⁴

The doctrine of chances would take a different approach to getting around the propensity ban than finding the evidence to be within an exception to the propensity rule as the case presumably did. Rather than inviting the jury to reason that 'because of the previous incidents defendant had a propensity to drown wives in these circumstances, and therefore probably acted on that propensity', which involves the propensity rule and requires finding an exception to fit the evidence, the doctrine of chances would invite the jury to reason as follows: 'what an unbelievable coincidence it would be if these drownings of defendant's propertied wives in the tub who recognized him in their wills happened by innocent accident—chance alone could not explain this. He must have purposely drowned her'. The belief is that this latter form of submission to the jury avoids the propensity rule altogether.

I think Mr. Sullivan would agree that this latter form or something like it would be put to the jury under the doctrine of chances. Some of the language of the actual decision could be read consistently with it.

Does this way of putting things really avoid propensity reasoning? On its face, it seems to. But let us look closer.

To simplify the matter let us suppose there was only one other drowning instead of two and that the evidential (the extrinsic) drowning occurred prior to the charged (the intrinsic) drowning. If given the evidence of the previous drowning on a doctrine of chances theory, or any theory requiring relevance and probative value, which is always a requirement whether propensity is involved or not, the jury is basically asked to ask themselves:

- (1) What are the chances of a defendant being innocent of the charged drowning where another of his wives was previously found drowned under the same circumstances?
- (2) What are the chances of a defendant having purposely done the charged drowning where another of his wives was previously found drowned under the same circumstances?

¹³ See note 3, *supra*.

¹⁴ See footnote 1 *supra*.

If the chances are higher of the latter (i.e. # (2)), you, ladies and gentlemen of the jury, may find the evidence to be some evidence of guilt.

This far, I think Mr. Sullivan and I, and most commentators would agree. The disagreement is over how to determine these chances.

2.1.1 *My View.* In my view, there are three potential ‘modes of thought’, in combination or separately or alone, on the part of the jury, that seem to be called for by asking them the above questions, if we are to be at all logical.¹⁵ These modes may be called:

- A. ‘The Retrospective Mode’;
- B. ‘The Prospective Mode First Part’; and
- C. ‘Prospective Mode Second Part’

A. The Retrospective Mode

Refer again to the two questions the jury is asked to ask themselves, that this approach will help them answer: (1) What are the chances of a defendant being innocent of the charged drowning where another of his wives was previously found drowned under the same circumstances? (2) What are the chances of a defendant having purposely done the charged drowning where another of his wives was previously found drowned in the same circumstances?¹⁶ Only if in their wisdom the jury feels (2) to be greater than (1) can the jury find the evidence to be any evidence of guilt. (Let us call these two questions the ‘Basic Questions’.)

In my view, to construct what they feel are the chances in (1) and (2), the jury, to be at all logical, must imagine (i.e. must hypothetically construct, assuming there is no empirical evidence, which there would not be) two hypothetical worlds, based on extrapolation from their own limited ‘experience’ using ‘reasonable common sense’ as the law so often says. The hypothetical worlds are (corresponding to questions (1) and (2)):

[Corresponding to (1)]: Of 100 husbands where there has been an accidental tub drowning of the present rich wife who recognized him in her will, etc., how many will have been attended by another such drowning of former such wives in the same circumstances?

[Corresponding to (2)]: Of 100 husbands who tub-drowned their present rich wife who recognized him in her will, etc., how many will have been attended by another such drowning of former such wives in the same circumstances?

Only if the jury feels the number of defendants in (2) are greater than in one, is the evidence significant. (If *far* greater, conviction might be warranted.)

¹⁵ These ‘modes’ bear a resemblance to certain kinds of epidemiological and statistical studies and concepts, but here, as in most questions where the judge or jury is asked to evaluate the evidence on standard theories of relevance or probative value, there are no empirical studies. Instead, the deciders are allowed to assume whatever figures they would imagine are realistic from extrapolations from their own ‘common sense experience’. It is implicit in the rulings on questions of relevance and probative value like this, that actual studies and expert evidence are usually not required, even if it were possible to get them. We will not deal with the propriety of that approach in this article. Of course, it would be better if there were some empirical basis.

Special note: I am grateful to Prof. David H. Kaye who in an exchange of e-mails perhaps unwittingly inspired my way of putting some of this. Any missteps are my own, of course.

¹⁶ The one number of course implies the other.

But absent some very peculiar facts (and probably even then), there is no way the jury could logically feel the number of defendants in (2) is greater than in (1) unless they believe someone who drowns their former wives in these circumstances has a tendency (propensity) to do it again more than the husbands in (1). Otherwise, the number of husbands in the two categories would likely be the same. Without such a propensity, the various deaths are independent variables—something like independent tosses of an unbiased coin where the chances of heads on each toss are the same, unaffected by what came up on the other toss.

So, by submitting the evidence to the jurors for their consideration, the judge is saying they may (if they feel it is warranted from their experience and common sense) find that the number of defendants in (2) is greater than in (1). For only then would the evidence have any probative value. But that inference, that the number in (2) is greater than (1), depends on the jury believing there is a propensity of the sort we are discussing. So, the judge is licensing the jurors to indulge in the disapproved propensity reasoning.

B. The Prospective Mode, First Part

Under this approach, the jury reasons in the following fashion to help themselves answer the Basic Questions:

Of 100 husbands who had a previous wife who was wealthy, who recognized him in their will, and who turned up drowned in the bathtub while married to him (etc.), how many do I the juror think (in my uninformed hypothetical mental construct from “experience” and “common sense”) subsequently commit a bathtub drowning of his next wealthy wife who recognized him in her will (etc.) and how many do not? Only if the jurors think those that do exceed those that do not, is the evidence probative.

Again, I think it is clear that the jury would logically and in probability theory normally have to answer that the number of those who do and do not would be the same unless the juror indulged in propensity reasoning—that husbands who once drown such wives in such fashion tend to have a proclivity or propensity to do it again.¹⁷ Without such a propensity, the various deaths are independent variables—like independent tosses of an unbiased coin where the chances of heads on each toss are the same, unaffected by what came up on the other toss. It would be a rare case, if ever, that this would not be so.

Only if the jury feels the number of husbands with previously drowned wives that do commit the next crime exceeds the number that do not, can the jury find the evidence significant at all under this mode. By submitting the evidence to the jury under the doctrine of chances or any probability theory, the judge is telling the jury they can if they wish find (from their experience and common sense) that the number of those who do is greater than those who do not. For only then would the evidence be significant. But normally they can only find that, I submit, if they think there is a propensity to drown

¹⁷ I can hear an objection here and under modes A and C above and below, that a husband who had no such proclivity may have learned from the past accidental innocent events how to do it this time purposely, and that the past accidental innocent events suggested this method of dispatch to him this time when he wanted to purposely get rid of the new wife. That is possible, but not a very likely scenario to occur to most jurors as a significant reason why the number would be greater. Even so, though, that is a propensity inference, as I will show later. See footnote 24 and accompanying text *infra*. Almost (and I am tempted to drop the ‘almost’) any factor that would link the occurrence of the two events (though such factor may be called by some non-propensity name) will (I am tempted to say ‘inevitably’ and ‘necessarily’) involve a propensity to do the acts.

these wives in the bathtub. Thus, the judge is licensing the jurors to think in the disapproved propensity terms.

C. Prospective Mode, Second Part

Here the jurors ask themselves (to help them in answering the Basic Questions described above):

Of 100 husbands who have not had a previously drowned wife (under the similar circumstances pertinent here), how many wind up drowning in the tub their wealthy wives (where there are also those circumstances)? Then this figure would be compared with the figure found in B. above for the number in 100 who had a previously drowned wife. Only if that figure found in B were felt to be bigger, would the jury be logically allowed to find the evidence at all significant here. Again, jurors' mental construct of what they think these two figures they are comparing would normally logically have to be the same unless jurors felt husbands who did it before tend to do it again—that they have a propensity.

Thus my conclusion is that, under what I regard as any conceivable logical approach to the Basic Questions, unless the assumption of a propensity is indulged, the occurrence or not of the extrinsic event normally cannot change the probability of the occurrence of the charged act.¹⁸ While people can come up with other names for the propensity, at bottom it is a propensity. At least it has not been demonstrated otherwise by Mr. Sullivan or any other commentator to my knowledge.

2.1.2 *Mr. Sullivan's view and the extent to which it is and is not compatible with mine.* Mr. Sullivan's view of the probabilities the jury is asked to determine may not be much different than mine, but he does not spell out as I do what cerebrations jurors must indulge to arrive at the probabilities estimates.

He may or may not agree with me that the determination involves the jury constructing the hypotheticals that I have posited, but I think that is the only way it can be done with any semblance of logic.

He writes in terms not of the specific questions the jury must address, but rather in terms of hypothetical 'urns' and 'marbles' familiar to students of probabilities.¹⁹ I think this does shed some valuable light on the computations required, but seems entirely consistent with my approach insofar as merely ascertaining and comparing the mediate probabilities to be cranked into the ultimate calculation. I will not repeat his approach in any detail, but will simply cite in the margin to the most pertinent pages of his article where it can be found.²⁰ I do not necessarily disagree with his approach this far. I think it is compatible with mine.

What is more significant is his penultimate conclusion, with which I also agree, that for the evidence to be relevant and probative, there must be some factor indicating stochastic dependence (of the probability of occurrence of the intrinsic offense) on the probability of occurrence of the extrinsic offense. He says, correctly, that the extrinsic event does not tend to prove the intrinsic offense *unless there is something (some link) that makes the probability of the intrinsic offense increase with the*

¹⁸ If there is actual empirical evidence of the probabilities the jury is asked to construct throughout my analysis above, my point that an assumption of propensity is required for each of the modes or steps, does not hold. It is *in the constructing of the imaginary figures* that the jury is permitted to indulge propensity reasoning.

¹⁹ See, e.g. Sullivan at his figure 1 and accompanying text.

²⁰ Sullivan, §3.

*likelihood of the extrinsic event.*²¹ In other words, if the two are stochastically independent, rather than stochastically dependant, the extrinsic event is irrelevant and not probative of the intrinsic event.

This is standard probability theory and undoubtedly true. I agree with it. Our disagreement is over his final step or bottom-line conclusion as to the nature of this linking factor. I say that it logically always (or at least in anything that he has brought forward) must be something that is in its fundamental essence a propensity. I find it difficult or impossible to think of a set of facts where this is not so. At least none have been shown. His examples of stochastically sufficient links all involve the suspect propensity although he denies it.²²

The requirement of some factor (some link) indicating stochastic dependence that he rightly insists upon, is why I posited in my analysis of the modes of thought above that propensity is necessary to make the extrinsic event probative of the intrinsic offense. I submit that unless one posits a propensity, the probabilities of occurrence of each of the two are stochastically independent. In other words, I think his requirement of stochastic dependence is the same as my requirement of propensity in my modes of thought analysis *supra*. There must be some link between the two events of a kind that makes the one stochastically dependent on the other. Thus far we agree.

But my position goes further. I believe this link is necessarily described as a propensity. Sullivan disagrees. But his examples of the link do involve propensity, though he denies it. And I doubt that he can come up with a realistic case in which on the facts there is a satisfactory stochastic link that does not involve propensity. At least he has not done so, so far.

Mr. Sullivan's argument that there can be stochastic dependence without positing a propensity hinges on three examples of sufficient stochastic links which he thinks do not involve propensity. But they in fact do. In one example, he suggests that a 'plan' would do the trick: a plan, e.g. in *Brides of the Bath*, to obtain financial gain from the death of wives. Another of his three examples is the 'knowledge' example: if special knowledge is required to perform the intrinsic act, it is more likely defendant possessed that knowledge if the extrinsic act (in this example necessarily a prior act) could have supplied or perfected that knowledge. This might apply to the *Brides of the Bath* case if the evidential drowning(s) preceded the charged one. His remaining example is 'intent'—the extrinsic drowning may indicate intent to do the intrinsic one.²³

²¹ For example, Sullivan at §3.2.2.

²² His examples appear at his footnotes 75–76 and accompanying text. He labels his examples 'intent', 'plan' and 'knowledge'.

²³ His three examples are given rather summarily. He says:

A number of non-character and non-propensity theories may be advanced to justify introducing evidence of the extrinsic bad act in a trial on the intrinsic drowning. For example, evidence of the extrinsic drowning could be argued to demonstrate the husband's intent on the intrinsic event, to demonstrate the existence of a plan of conduct involving a bathtub drowning, or similarly to demonstrate that the husband possessed the requisite knowledge to cause a bathtub drowning.

Sullivan, at text accompanying his footnotes 75–76. He does not say that any special other evidence relating to the intent, plan or knowledge than the extrinsic event needs to be introduced. If such intent, plan or knowledge can be inferred merely from the concurrence of the two events (as his paragraph following this quotation suggests), it is to be wondered whether his stochastic dependence requirement is really a requirement at all. They can always be said to exist wherever there are two similar acts. He does seem to admit that his intent, plan and knowledge theories are not very different from current law (i.e. from MOIPPKIMA; see note 1 *supra*):

... [A]ll admissible uses of extrinsic acts evidence [under the current MOIPPKIMA rule, with one tautological exception] support potentially admissible theories of stochastic dependence....

Sullivan, in the text between his footnote 74 and 75. So, are we really getting anywhere?

I agree plan, knowledge and intent as he uses them would be the needed stochastic links, but I maintain they involve the suspect propensity reasoning. Saying there is a plan embracing both events is to say defendant has a propensity to do this kind of thing for this kind of gain. Saying he acquired the knowledge of how to do it means nothing unless he has a propensity to use that knowledge.²⁴ Saying the extrinsic act indicates intent when the act occurs again is baldly saying he has a tendency—a propensity—to intentionally commit these acts. Mr. Sullivan has not succeeded in demonstrating that his approach can be applied without employing propensity reasoning. The lack of propensity reasoning is touted as a prime virtue of the doctrine of chances in almost all the doctrine of chances literature, including Mr. Sullivan's article. So far to my knowledge, no one has succeeded in establishing that lack of propensity reasoning.

The remarkable—and admitted, see end of footnote 23 *supra*—similarity of Mr. Sullivan's stochastic link examples to the exceptions that permit propensity under the standard evidence rule (under M.O.I.P.P.K.I.M.A., the 'plan', 'knowledge' and 'intent' catchwords²⁵) leads the reader to wonder quite properly whether in practical effect Mr. Sullivan's solution is really much different than current law, and whether current law intuitively recognizes something like Mr. Sullivan's analysis. That in turn induces one to wonder whether current law reaches a result consonant with Mr. Sullivan's enormously more complicated approach, and whether current law does it in a way more comprehensible to average jurors, lawyers and judges, who are not (and are not likely to become) proficient in probability theory.

Sullivan, in saying plan, knowledge and intent and the like do not involve propensity reasoning, is accepting the error many courts make: that somehow very specific propensities, i.e. propensities to do something in a very specific manner repeatedly, are not propensities. The next section below will describe what I mean.

2.1.3 *What is a propensity?* 'Propensity' means a person's tendency to act a certain way on multiple occasions. Conceptually, a propensity could be shown by, *inter alia*, repeated acts of the same type, by one's reputation in the community, or by another's opinion of the person for the propensity. Once the propensity is established in one of these ways, or any other way, then theoretically, if not legally, it may be inferred from the person's propensity, that the likelihood is increased that he acted in a similar way on the occasion in issue in the case. The inferential chain (using other acts, opinion, or reputation as the evidence of the propensity) would be as follows (the arrow meaning 'offered to help prove, establish, or solicit an inference of the existence of'):

[OTHER ACTS; OR A REPUTATION FOR; OR ANOTHER PERSON'S OPINION
CONCERNING]→[PROPENSITY]→[A CONFORMING ACT]

The standard propensity evidence rule bans this kind of reasoning, at least if the propensity we are dealing with can properly be called 'character'. The *banned* inferential chain then would be:

[OTHER ACTS; OR A REPUTATION FOR; OR ANOTHER PERSON'S OPINION
CONCERNING]→[**CHARACTER**]→[A CONFORMING ACT]

²⁴ This is so even if we suppose (unrealistically) that the extrinsic drowning was accidental yet furnished knowledge of how to do it purposely or suggested the possibility to commit an intentional drowning, which knowledge or suggestion defendant utilized in the intrinsic drowning. Similarly, if the accidental drowning made him more comfortable about doing—and thus induced him to do—the intrinsic drowning.

²⁵ See note 1 and accompanying text, *supra*, for this traditional rule.

Courts and commentators often carelessly say that it is ‘propensity reasoning’ that is banned by the standard evidence rule. In other words, the first inferential chain above. That is an overstatement; if the law is properly read, it is the second inferential chain that is banned.²⁶ It is only reasoning based on the propensity known as *character* that is banned.

‘Character’ properly describes just one kind of propensity—a propensity to repeat a general category of act, such as acts of violence, acts of dishonesty, etc. And by definition, character means a propensity to do acts that have a good or bad moral connotation. But there are other kinds of propensities. Inferring present action from these others is not banned. For example, there are specific propensities, i.e. a tendency to do a certain thing in a specific way.²⁷ This is not properly referred to as ‘character’.

Take again the ‘Brides of the Bath’ case, above, involving multiple drownings of propertied wives of defendant, each of whom had recognized him in their wills. Defendant was prosecuted for one of them, and the others were offered and received in evidence on grounds the evidence was not forbidden character evidence. While one might say a person has a ‘propensity’ to drown in the bathtub his propertied wives who have put him in their will, one would not say he has a ‘character’ to do something that is *that* specific. The person’s tendency in this example is too specific to be called character. It might be said the evidence indicates a certain ‘plan’, ‘design’, ‘modus operandi’, ‘pattern’, ‘intent’ or a number of other things, all of which the law recognizes as different from showing character, and are permissible. That is approximately the grounds on which the evidence was received in the actual case although it is not clear it was recognized as involving specific propensity—it was at least apparently felt not to involve character.²⁸

The case is generally regarded as the genesis of our current character or propensity evidence rule and its exceptions.

The main difficulty in ascertaining what traits or tendencies fall into which of these two categories (general propensity, which is character; or specific propensity, which is not), is this: where should the line be drawn between them? How general need it be to be called character? How specific to be called a non-character specific propensity? For example, defendant beats up his wives and girlfriends, offered in evidence to show his purposeful drowning of his wife in the bathtub. Is the jury being solicited to find he has a certain character, or to find he has a specific propensity? Both are indeed propensities, and if the rule is stated as a rule against propensity (not more narrowly just ‘character’-type propensity) or if character and propensity are considered synonymous, then perhaps one is spared the necessity of drawing a distinction between the two: both are prohibited.

Perhaps because of this difficulty in differentiating character-propensity from specific-propensity,²⁹ a number of courts say broadly that propensity reasoning is banned, without differentiating among

²⁶ But of course if a ban on the first inferential chain is the position of the highest court in your jurisdiction, that is the law there until it can be shown to be incorrect or undesirable to that court, or shown to that court or to a lower court to have been a broader statement than was intended or necessary to decide the case when originally made, i.e. that it was *obiter dictum*.

²⁷ There are other non-character propensities as well (which we will not treat in this article), such as habit (extremely discrete identical acts, not necessarily having any moral connotation, that are almost invariable automatic responses whenever a precise set of stimuli are presented), documentable psychological illnesses such as compulsions or diagnosed personality traits (at least in some courts), etc. If any of these were the middle term in our inferential chains in the text just above, the evidence might not be automatically banned. The reasons for banning the ‘character’ kind of propensity are that (1) its predictive or probative value is weak (because it is general, diffuse and not always followed), which weakness may not be recognized by the fact-finder, and (2) it has a tendency to induce decision based on past derelictions rather than careful scrutiny of whether there is present guilt. The decision as to what is character propensity and what is specific or other propensity should be made in individual cases with these purposes of the character ban in mind.

²⁸ The judge also used a phrase something like ‘absence of accident’.

²⁹ It is hard to tell on the propensity spectrum where pattern (or plan, design, *modus operandi*, etc., all specific propensities) ends and character (general propensity) begins.

kinds of propensities. In fact, this overstatement is repeated so often that in a number of jurisdictions it is indeed the law.

Therefore, to get the evidence admitted in those jurisdictions, in cases where they want to introduce extrinsic acts to help prove intrinsic ones, prosecutors must pretend that their specific propensity evidence is not relying on *any* theory of propensity at all, general or specific. They must argue that no propensity of any kind is involved—that ‘pattern’, ‘plan’, ‘design’, ‘modus operandi’, ‘intent’, ‘knowledge’, ‘motive’ or ‘lack of accident’ are applicable and are theories that do not involve propensity at all. Or that the ‘doctrine of chances’ is applicable and does not involve propensity. These claims that propensity is not involved—in either of these prosecutorial stratagems—is a fiction (though it does sometimes carry the day with courts). Those words and that doctrine as used in this context do in fact (whatever a court may say) invoke the process of inference from propensity. It may, depending on the facts, be a specific propensity, though, which is a propensity to do a certain thing a certain way, and not a character propensity (like a general propensity for violence).

That is a more valid argument for relieving the evidence from the ban. Specific propensities are much more probative, and, depending on the degree and other facts, the high probative value probably outweighs the danger of prejudicial thinking.

While I agree the extrinsic drownings in our ‘Brides of the Bath’ case should come into evidence, they are admissible *not* because they do not involve propensity reasoning, but because they involve *specific* propensity, not the general propensity called ‘character’. ‘Pattern’, ‘plan’, ‘motive’, ‘design’, ‘modus operandi’, etc. are appropriate words to apply to this evidence, not because they do not involve propensity reasoning, but because they involve reasoning based on *non-character-type* propensity, i.e. specific propensity. I also believe the increase in the probability of guilt produced by the extrinsic evidence in this case is high enough to sufficiently overcome the risk of prejudice therefrom.

I submit Mr. Sullivan has fallen victim to arguments like those of the prosecutors that a number of courts and commentators accept, specifically, that words like ‘plan’, ‘knowledge’, ‘intent’ (his three examples of stochastic links) do not involve propensity in our context. If these links that produce stochastic dependence do not involve propensity, then Mr. Sullivan is correct, that the doctrine of chances does not necessarily involve propensity and can render the evidence totally free of the propensity rule. If they do involve propensity, then the evidence is still subject to the propensity rule. They may nevertheless be within the exceptions as specific propensity. But there is a risk that at least some courts will (1) see them as propensity, and (2) ban the evidence on a broad reading of the ban on propensity as being any and all propensities, not just character propensities.

So, though under Mr. Sullivan’s approach I believe propensity is always required (or at least he has not demonstrated otherwise), it is not necessarily a propensity banned by evidence law. His examples of permissible stochastic links that produce admissibility are the kinds of propensity that courts who read current Evidence law properly, would allow.

He also seems to recognize, quite rightly, that character type propensity would also provide a sufficient stochastic link under probability theory, but he agrees that evidence dependent on a character type propensity for its stochastic link should be banned as under the traditional evidence rule, basically for reasons of prejudice, although his article deals with this only in brief passing.³⁰

³⁰ See Sullivan at his text beginning in his paragraph preceding his footnote 69 through his text paragraph following his footnote 70. See also his text accompanying footnotes 92–94. In other words, he does not purport to replace the standard evidence rule. He just proposes to contract its scope.

3. Conclusion

Most courts and scholars including Mr. Sullivan and myself would agree that standard relevancy and probability theory should be used to determine whether this evidence is relevant and how probative it is.³¹ We also agree that if the extrinsic evidence logically increases the probability of the intrinsic act, it is relevant and probative. But I maintain, it increases probability only if there is a propensity on the part of the defendant to do this sort of thing—or at least it has not ever really been shown otherwise. And there may be other things wrong with the evidence on a policy ground.

Using standard probability theory, Mr. Sullivan demonstrates convincingly and effectively that the occurrence of the extrinsic event can have relevance to—can increase the probability or chances of—guilt of the intrinsic event, but only if the intrinsic event is shown to be ‘stochastically dependent’ on the extrinsic event. His position is based on an axiom of probability theory: An ‘extrinsic’ event (here an incident offered in evidence, other than the one charged in the indictment) influences the probability of an ‘intrinsic’ event (here the incident charged in the indictment) if the two are ‘stochastically dependent’ (but not otherwise). So there must be something that makes them stochastically dependant. That means there must be something, some link, making the occurrence of the extrinsic event increase the probability of the intrinsic event occurring or occurring criminally. Many events are stochastically independent, so the extrinsic event is not always probative. All this is indeed standard probability theory, but his detailed parsing of exactly why this is so is a contribution that adds, clarifies, and in some instances corrects what other scholars have said.

He gives examples of what kind of link would make the intrinsic act stochastically dependent on the extrinsic one: a common plan or design as between the extrinsic and intrinsic events, acquisition of knowledge from the former as to how to perpetrate the act, or a common intent. I agree that this is sound and unexceptionable as a matter of probability theory. But I submit that each of his examples involves the very propensity reasoning he says the doctrine avoids. I think this is necessarily so and I doubt there are any such links that do not involve the propensity reasoning.

It is important to note the limits of what Mr. Sullivan has attempted to do—what his article does and does not do. Providing a sound doctrine of chances analysis of this type of evidence, in terms of correct probability theory, as Mr. Sullivan does, provides intellectual clarity to the problem of relevance; but sheds little light on a number of critical practical questions of *legal admissibility*³² in the area. He realizes this and does not purport to do more.³³ I admit I do not have specific answers for them either. Nor do other doctrine of chances advocates, insofar as I am aware. Some of these questions besetting the current law of ‘other acts’ evidence in many jurisdictions, and besetting ‘doctrine of chances’ theories, are:

- *What is a propensity?*
- *Are both specific and character propensities banned?*
- *If not, where is the line between the two?*
- *What exactly do the MOIPPKIMA catchwords (or the stochastic links) mean or contain and what other kinds of cases would also do the trick?*

³¹ Recall the kind of evidence we are referring to. See footnote 7, *supra*, portion labelled ‘important note’.

³² Relevance is a *sine qua non* of admissibility, but is not sufficient alone to produce admissibility. See Fed. R. Evid. 401-02. In fact, the main body of the Federal Rules of Evidence is concerned with exclusion of relevant evidence for reasons other than want of relevance.

³³ See his §4.2. Somewhat contrariwise, however, his entire §4 is entitled ‘Implications for Legal Practice’ but it does not really contribute a whole lot to these questions, nor does it purport to.

On these points, while apparently conceding that the traditional propensity/character rule under his analysis would still apply to ban some evidence, Mr. Sullivan offers little on (1) what the rule does or should cover, (2) how to determine in a principled logical fashion what kinds of propensities are prohibited by the rule, (3) how to determine the distinction between character and propensity under it, (4) the distinction between the prohibited inference in the rule and the M.O.I.P.P.K.I.M.A. exceptions, or (5) whether there is any real distinction in these regards at all. Continuing the questions:

- *At what point of the specificity/generality continuum is propensity probative enough and sufficiently non-prejudicial to be admissible?*
- *At what point does the similarity between the acts become enough to make the evidence admissible (not just relevant)?*
- *At what point on the scale of unlikelihood of the acts occurring together by chance should the evidence become admissible?*

On these, Mr. Sullivan is conspicuously silent on *how* similar the extrinsic events have to be to the intrinsic event, or how unlikely or coincidental the combination of acts has to be (in the absence of a guilty explanation of some kind), or how much the probability of guilt of the intrinsic act has to be increased by the extrinsic act, in order for the extrinsic act to be *admissible* under his or any other approach to the doctrine of chances or under the rule. While the Sullivan article examines only cases where the co-existence of the two acts together would be a phenomenal coincidence (i.e. would be astronomically unlikely)³⁴ but for some criminal explanation, his method of relevance analysis would be equally applicable to cases where the combination is only mildly unlikely, although he does not say such evidence in such cases would necessarily be *admissible*, because the stochastic dependence might be weak or non-existent or countervailing policy factors may outweigh the relevance or probative value.

He expressly does not purport to say where the line should be drawn—how unlikely the coincidence would have to be or when policy factors should intervene. As these are quite akin to problems that attend the traditional evidence rule (when does character become pattern to qualify for MOIPPKIMA), the ‘doctrine of chances’ may not improve the practical situation much. Continuing:

- *Is there any reason to believe the jury can arrive at a sound idea of how unlikely it is?*

Here, Mr. Sullivan briefly addresses the well-recognized inability of jurors to accurately assess probabilities. His somewhat cursorial answer to this problem is that (1) the problem inheres in all evidence jurors must assess in all cases, and (2) judges are more probabilistically sophisticated and can police the matter.³⁵ I find (1) to be true but not really an answer, and I doubt that (2) is really true. Continuing:

- *How numerous should the extrinsic acts be to be admissible?*
- *How similar?*
- *How similar in modus operandi?*

On these, suppose in *Brides of the Bath*, that the extrinsic incidents (offered in evidence to prove the intentional intrinsic charged bathtub drowning) were not bathtub drownings but deaths brought about

³⁴ Mr. Sullivan seems to use ‘phenomenal coincidence’ in two different senses: a probabilist’s sense (which just connotes a coincidence of two events) and a sense of ‘astronomically unlikely’ at different times.

³⁵ See his §4.3, particularly his text accompanying footnotes 101–106.

other ways—one by a fall down the stairs, another by fire. Or suppose the other wives were not wealthy. Or suppose the extrinsic acts offered were just that he would hit the other wives. Or that he would punch girlfriends of his. Or was nasty, violent and aggressive to women in general? Or nasty to people generally? Would those cases qualify under the doctrine of chances? The chances of guilt of the present bathtub drowning indicated by these variants of the evidence would decline the more unlike the current bathtub drowning the other incidents are. Does the doctrine of chances apply to all of them? Presumably so under Mr. Sullivan's analysis, but presumably only in order to calculate the extrinsic act's effect in increasing the probability of the intrinsic act but not necessarily to make the evidence admissible. Where on the spectrum these acts become admissible is scarcely addressed. There is an implication throughout his article that *something*—either the doctrine of chances, or admissibility—applies only to 'phenomenal coincidences'. His general analysis seems to apply to any unusual concurrence of extrinsic and intrinsic events, highly extraordinary or not, but no light is shed on where the break point of admissibility should be. Continuing the questions:

- *When does the risk of prejudice overcome the probative value?*
- *When 'Other Acts' evidence is offered, can the jury be prevented from punishing for past wrongs or exaggerating the inference of guilt? How? How can that danger be minimized?*
- *How can the jury be prevented from in fact secretly indulging a propensity or character inference even if the theory of the evidence offer does not involve propensity or character reasoning and the jury is instructed not to utilize propensity or character reasoning?*

Related to these questions, does the jury get to decide in every case (1) when the concurrence could be explained just on the basis of random chance and (2) whether the coincidence is probative, and (3) how probative it is? But we all know as a practical matter courts will want to cut-off the evidence of other events as they get too remote from what happened in the currently charged event—that the courts will feel that at some point, the jury will tend to overestimate the probative value of such evidence or tend to punish for past wrongs without a hard look at whether the defendant committed the presently charged act. Mr. Sullivan does not gainsay that the judge should have a screening role of some kind before the evidence gets to the jury. The current law is fuzzy about just where the tipping point is. Mr. Sullivan's version—like most versions—of the doctrine of chances is similarly indecisive or non-committal on this. Continuing the questions:

- *How should we structure the law in the area to minimize the 'lazy' or 'human' tendency of police, investigators and prosecutors to merely 'round up the usual suspects' each time there is a crime?*
- *How should the law in the area be structured so as not to send too strong a message to former miscreants that it is futile to reform themselves?*

While neither he, nor I, nor other Doctrine of Chances advocates, nor current law, have specific or even partially satisfying answers to most of the above 16 italicized questions, current law has an imprecise but workable approach in the area that functions tolerably, at least in those jurisdictions where the rule is read and applied sensibly. Current evidence law's character-vs.-other-propensities concept and the MOIPPKIMA exceptions, even though imperfectly understood, draw a distinction between general and specific that roughly segregates the prejudicial from the probative. Admittedly this is very imprecise, and the distinction is exceedingly difficult to quantify. If properly understood,

though, and applied with an overlay of a Rule 403-type balancing,³⁶ as those jurisdictions do, the current character rule and its exceptions will usually admit the evidence when it is fairly strong, will screen out extremely prejudicial minimally probative evidence or evidence of very low probative value, and perhaps will do as good a job as realistically can be expected given a large and diverse court system administered by probabilistically unsophisticated lawyers, judges and juries.

Mr. Sullivan's approach probably would produce ultimate admissibility determinations quite similar to those under a sensible reading of current law³⁷ if combined with standard methods to screen out prejudice as he briefly suggests.

Mr. Sullivan does not purport to answer or even address many of the questions I have raised. I certainly do not pretend to do more than raise a few of them myself. As authors, we retain the right to choose what problems we wish to treat. But it is important to know what an author has and has not attempted. Mr. Sullivan does purport to demonstrate that propensity is not involved in proper doctrine of chances methodology. That is the major thesis of his article. And to me at least, he has not succeeded. But he has given me and all of us substantial new food for serious thought. That is the definition of an excellent article.

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³⁶ Fed. R. Evid. 403 allows the judge to exclude relevant evidence on an *ad hoc* basis if on the facts certain risks that would be engendered if the particular piece of evidence were admitted, are determined to substantially outweigh the piece's probative value. The risks are enumerated as the danger of prejudice, misleadingness, confusion, protraction and cumulativeness.

³⁷ See note 23, *supra*, and text accompanying note 25, *supra*.