
RIGOR REQUIRES REFINEMENT

A Mistaken, Inaccurate Map Leads Us to Unintended Places

Many years ago, I had the opportunity to teach a mediation workshop for a group of federal court mediators. As part of the workshop, I introduced decision trees, focusing primarily on litigation risk analysis. I was pleased when the court's ADR administrator later told me that many of the mediators used the method quite regularly after the workshop and considered it a valuable tool for mediation practice. A few years after that, I was invited back to teach a workshop focusing on other mediation topics but also to include a segment on "advanced decision analysis," building on what had been covered before. Recognizing that some of the mediators were new, and not all would have attended the previous workshop, we started with a reprise of the introductory material early in the morning. To my surprise, just about all of the mediators, including the alumni, showed up for the reprise. And to my chagrin, I learned that many had been using decision tree analysis only in highly simplified and less than rigorous ways since that initial session. While they found the method useful for facilitating movement and communication in mediation, I found out that they were using slap-dash distorted maps and plug-ins that failed to represent the case being analyzed. As the teacher, this was a humbling disappointment. In my view, a distorted risk analysis may be worse than none at all if we put faith in its distorted results.

These were intelligent lawyers, seeking to use the method to analyze and communicate as neutral mediators about litigation risks and consequences, possible costs and gains. Their goal was not distortion but honest analysis; their constraints were of time and discomfort with structuring a more complicated tree and the accompanying math. These two constraints work together: with little time, people are understandably less comfortable tackling a complicated tree. I learned that, even if the basic premises are understood, people just plain need practice and experience applying the method in more complicated cases. Practice yields greater confidence in our ability to adequately represent the essential twists, turns, and uncertainties in a complex litigation. That confidence eliminates undue worry that it will take too long or that its math will be too daunting.

The discussion that follows is in response to that lesson. It identifies common errors and sub-optimal choices, explains how these distort the analysis, and suggests better practice choices.

Structural Over-Simplification and Its Dangers

The single most common and problematic practice is over-simplifying the tree structure. Some simplification is inevitable—no decision analysis or litigation risk analysis can or should include chance nodes or branches for every theoretical and subtle shade of eventuality. Yes, the judge could suffer a stroke, hurricanes happen, a fire drill could interrupt the proceeding, a trial exhibit might vanish. Strange

things can and do happen, but unless reasonably foreseeable, their appearance as nodes and branches will serve only to confuse and to obfuscate.

A decision tree is *over*-simplified when it fails as a structural representation of a case's logical and sequential flow: when it omits major and consequential turning points of uncertainty and decision. If there's a credible motion to dismiss or another dispositive motion, a motion for partial summary judgment (or an argument on summary judgment that could lead to partial but not complete dismissal), or a motion to exclude important testimonial or documentary evidence, these must be reflected in the structure of the tree. While damage awards are just about always uncertain, or estimated within a range, *which* range you define has everything to do with what will be "in" the damages. Will the judge award front pay as well as back pay, or back pay only? Will the jury find emotional distress, or not? Will they find the evidence supports a punitive damages award, or not? Where the damages range is situated on the tree may determine which damages components will be included.

Let's consider a hypothetical employment age discrimination case. Assume that most of discovery has been completed, but no dispositive motions have been filed yet. The defense attorney called a law school classmate who recently mentioned having attended a workshop session on decision tree analysis. The defense attorney explained that he would buy lunch, heck, even a fancy dinner, for his assistance in thinking about what might be reasonable settlement for his client, using a decision tree. The novice tree-builder classmate interviewed the defense attorney about the case, and learned the following:

- The defense plans to file a motion for summary judgment alleging that undisputed facts support a finding that the plaintiff left voluntarily. The plaintiff claims constructive discharge, and that her superior's so-called warning was really a message that her termination was in process.
- The plaintiff was 45 years old at the time she left the company, and has not found comparable re-employment in industrial product design.
- If summary judgment is denied, she would seek to introduce evidence of the obvious emotional impact this had on her while she was working there, as evidence of the defendant's intent. The defense will file a motion *in limine* because the emotional distress is not recoverable under the age discrimination statute. They will also say the company's actions weren't causally related and will try to use her psychiatrist's report and the report of their expert to say that her psychological distress had been ongoing, caused by childhood abandonment and her abusive ex-husband, but not by the job.
- If the case goes to trial, liability will, of course, be a hotly contested issue. The company's defense will be that the plaintiff quit; she was not terminated. In any event, her subpar performance warranted the poor performance review and written warning, and would justify her termination.
- The plaintiff will testify that her leaving was forced, and other witnesses will corroborate this claim with reports that her superior said "She's history." The plaintiff will also introduce evidence that most of the designers and executives who left the company within the last 3 years were older than 40, and they were replaced by much younger designers at lower salaries. The defendant will contest these numbers, arguing that many of the older designers quit. The plaintiff will claim they were forced out. The defendant will point to inadequacies in the plaintiff's work, which she will contest. She will say that her superiors changed design specifications constantly,

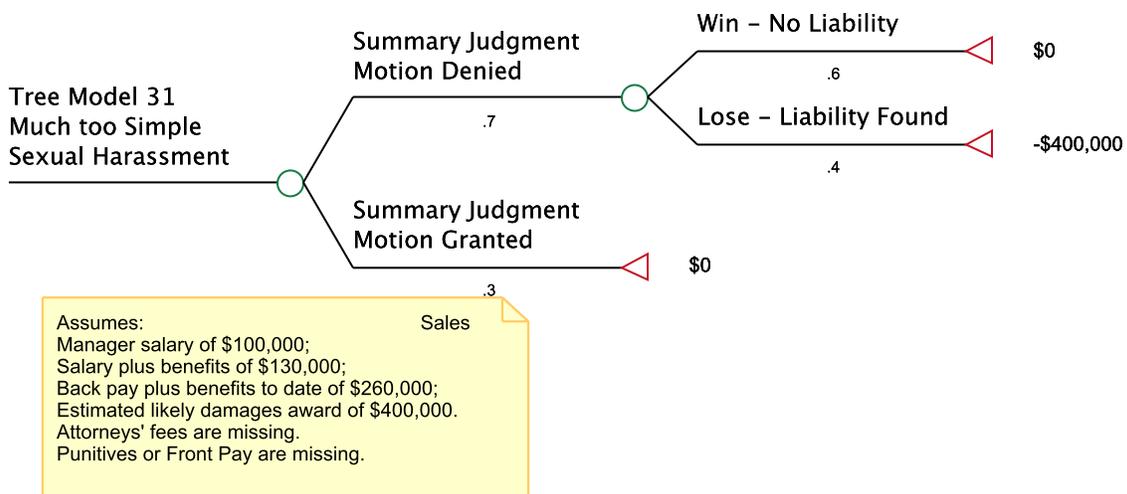
in a deliberate effort to set her up for failure. She claims evidence that they secretly laughed at the tricks and mind games they were playing. The defendant’s HR manager will claim that they hired only designers with high computer graphics skills, and these tend to be younger.

- Liability aside, the now 47-year-old plaintiff seeks front pay for at least 5 years, and back pay for the two years since termination (her salary was \$100,000 plus benefits worth \$30,000 for total compensation of \$130,000 per year). She claims to have been diligently looking for work, and notes that the entire industry remains depressed, even post recession. Of course, the defense alleges failure to mitigate, arguing that the market for services is global (and often online) and the plaintiff has only looked locally. Defense counsel refuses to imagine she would get front pay for as long as 5 years. He acknowledges it could be as high as 4 years, but thinks much shorter periods of time would be more likely, if she gets any front pay at all.
- Under federal age discrimination law, the plaintiff is not permitted to get “compensatory” damages—for emotional distress or to punish the defendant. However, the plaintiff will no doubt suggest that a jury will give her additional damages on a finding that the discrimination was intentional and egregious. This rests upon the theory that the company’s management schemed to create cause for termination by diminishing the plaintiff’s performance record. Testimony by the plaintiff and her former assistant suggest that her supervisor chuckled over how he had “confused the old lady” by changing design specifications, and he often denied what were the original instructions, or fabricated missed assignments. They knew how upset all of this made her. Of course, the supervisor denies this.

A much-too-simple and, frankly, unworthy way to think about this case would be:

“Win or lose summary judgment; never mind the motion in limine because it doesn’t affect the summary judgment motion; win or lose at trial; damages high medium or low. And, remember that whether or not the motion in limine was granted could affect the likelihood of a verdict as well as the damages. We’ll factor that in.”

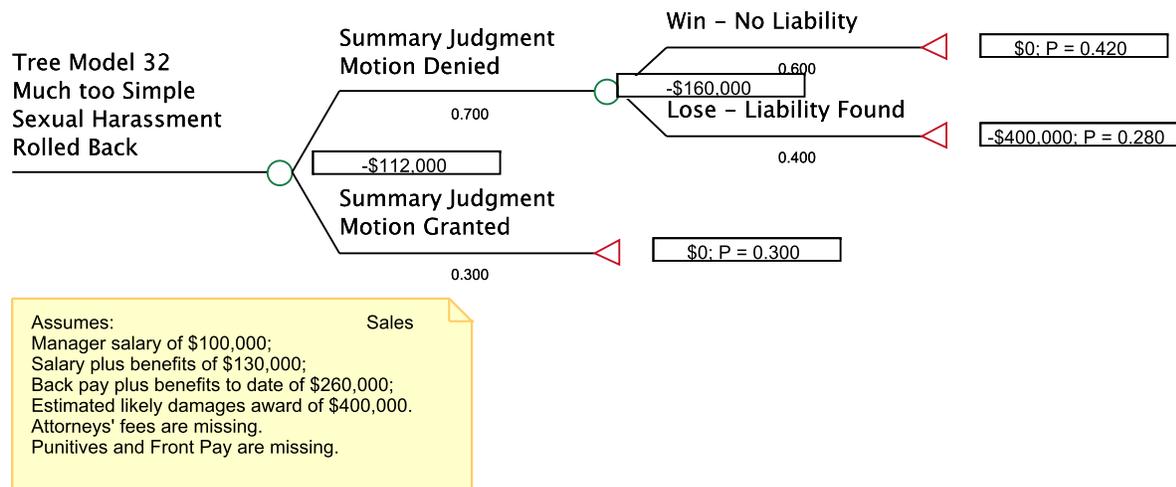
Here’s the much-too-simple tree reflecting that thinking.



Following that much-too-simple structure, even the novice tree-builder might ask the defense lawyer to consider probabilities¹ and payoffs in a dialog, by asking: “What are your chances of getting the case thrown out on summary judgment? Let’s assume the defense lawyer would initially say 40% or even 50%, but after the conversation about the leanings of the assigned judge, he would agree that 30% is more realistic. They would then talk about how the case could be won or lost, where the evidence is weak and strong, whether the motion *in limine* (regarding the plaintiff’s emotional state) could affect liability or just damages. Finally, the tree-builder asks: “When you sum it all up, what do you think the chances are of a defense verdict?” The lawyer says, “I have a strong case,” and eventually estimates 60%, recognizing there’s still significant risk a jury will side with the plaintiff employee, and against the company.² They talk for a while about front pay, back pay, possibility of the plaintiff’s described emotional state impacting a finding of intentionality and liquidated damages.

The classmate then asks for the defense lawyer’s best estimate of likely damages. He replies: “Well, two years of back pay, including benefits, would be \$130,000 x 2, so \$260,000. I’ll bump that up to \$400,000 or so because it could be a bad day for us. The \$400,000 reflects my opinion that all of the other baloney—front pay, liquidated damages, etc.—is so unlikely that it shouldn’t be a big factor and certainly shouldn’t drive the settlement.”

Here is what that tree would look like, rolled back to reflect the EMV and the probability distributions.



Note that the EMV is \$112,000, and the only damages number presented is \$400,000.

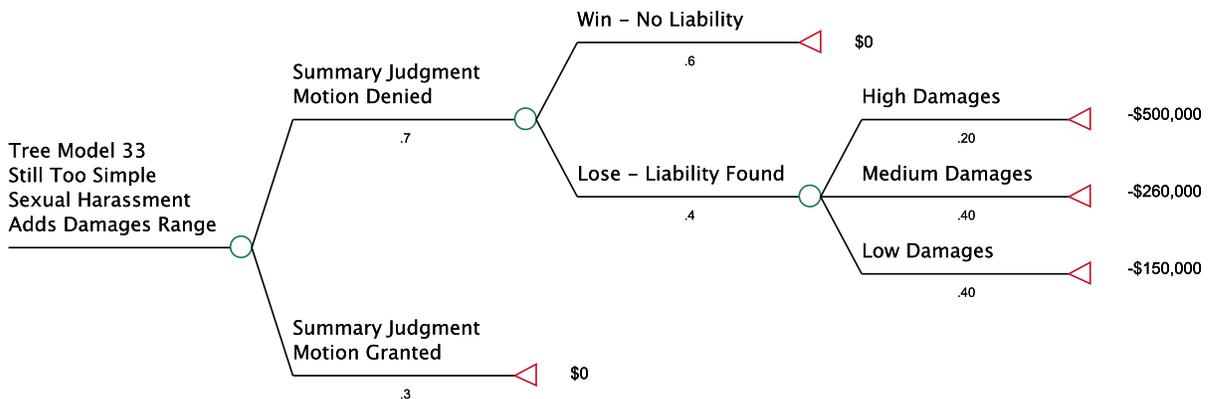
Imagine that the tree builder flashes back to the recent decision analysis workshop and says: “No, we really have to put in a range—we can’t just pick one number. Defense counsel says, “Okay, then use a low damages number of \$150,000 because the woman had not tried to mitigate, a ‘medium’ damages

¹ This section focuses on the tree’s structure and the next on outcomes or payoffs. Chapter Nine provides an overview of impediments to unbiased probability estimates. Later portions of that chapter, as well as Chapter Ten, offer some best practices for thinking through or eliciting probability estimates.

² This hypothetical example involves purely hypothetical percentages.

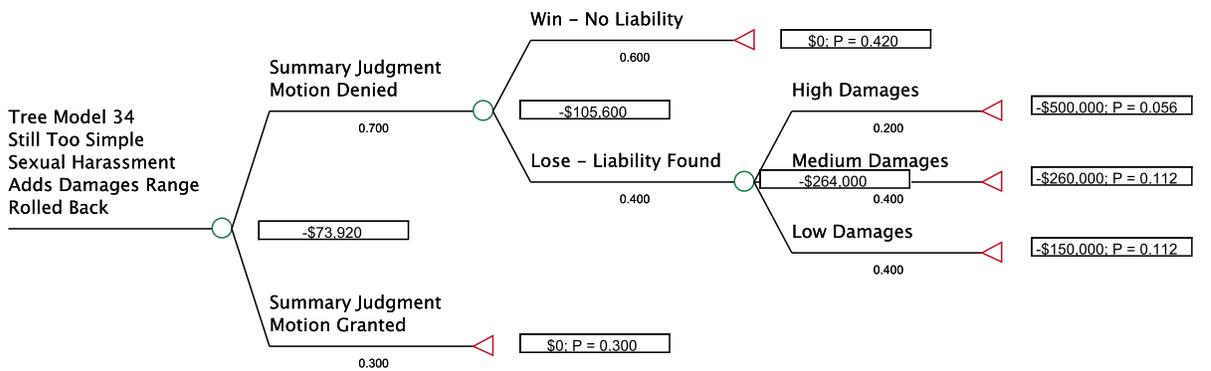
number of \$260,000, and a high of \$500,000.” He estimates a 40% chance of the low number, a 40% chance of the mid-range number, and a 20% chance of the high number.

Here’s what the tree would look like.



Assumes:
 Manager salary of \$100,000 plus benefits = \$130,000;
 Low damages award considers failure to mitigate, estimated at \$150,000;
 Mid damages est of 2 years of back pay, incl. benefits at \$260,000;
 High damage award estimated at \$500,000.
 Attorneys' fees are missing.
 Punitives and Front Pay are missing.

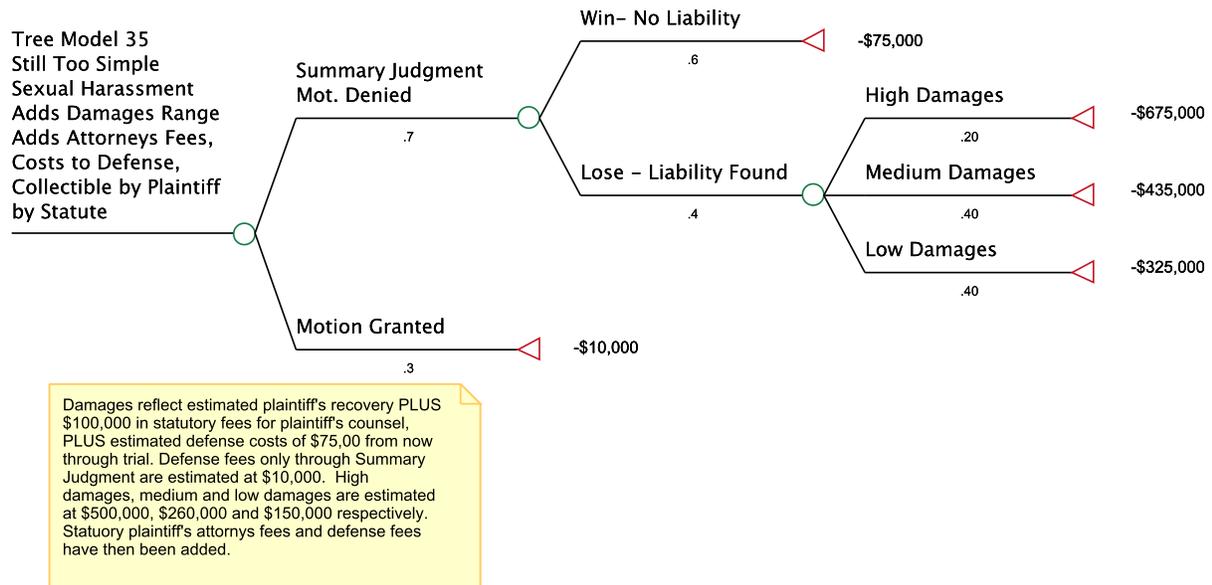
The next tree shows the roll back. Note that the EMV is lower because the attorney has more heavily weighted the lower damages range.



Assumes:
 Manager salary of \$100,000 plus benefits = \$130,000;
 Low damages award considers failure to mitigate, estimated at \$150,000;
 Mid level damages estimate of 2 years of back pay, including benefits at \$260,000;
 High damages award is estimated at \$500,000.
 Attorneys' fees are missing.
 Punitives and Front Pay are missing.

If the tree builder has another flash back to the decision analysis workshop, he might ask and learn that the defense lawyer’s attorney’s fees from now through summary judgment will be \$10,000 and through

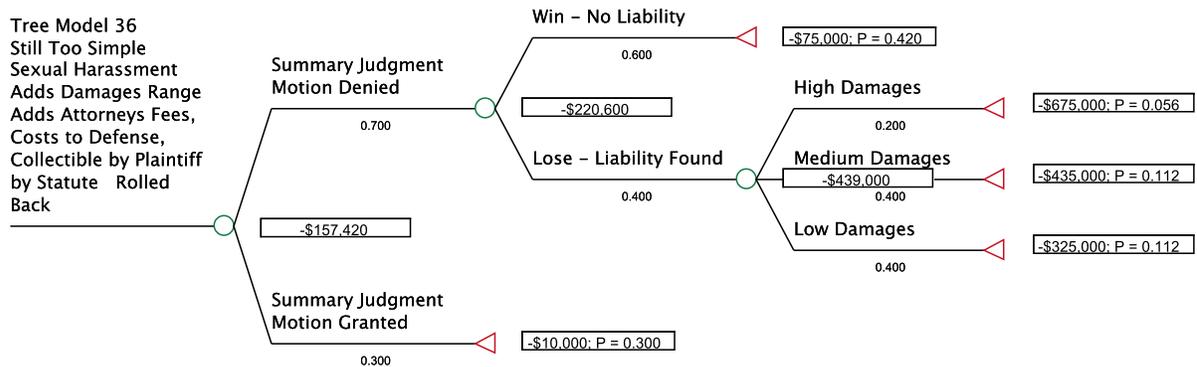
trial (inclusive) at \$75,000. (We're assuming that investigation and discovery are complete.) Using the Lodestar³ approach to damages, the plaintiff's attorney will no doubt collect at least \$100,000 for her work through trial, if the plaintiff prevails. These would add to the defense costs. The revised tree, with costs added is set forth below.



We see that now, when this tree is rolled back, the EMV has begun to creep up, in a way that bears greater resemblance to reality.

³ “The lodestar method of calculating attorney fees is a two-step process. First, courts multiply the hours an attorney works by the attorney’s hourly rate—this process yields the lodestar—and then courts adjust the lodestar up or down “to reflect the characteristics of a given action.” Brooks, M.; Phillips Jr., R.D.; Connolly, T.; Feldman, R.; and Mamaysky, I. “Calculating Attorney Fee Awards,” *GP Solo* (March 2010). This article is available at www.americanbar.org/content/newsletter/publications/gp_solo_magazine_home/gp_solo_magazine_index/magratten_phillips_connolly_feldman_mamaysky.html.

Tree Model 36
Still Too Simple
Sexual Harassment
Adds Damages Range
Adds Attorneys Fees,
Costs to Defense,
Collectible by Plaintiff
by Statute Rolled
Back



Damages reflect estimated plaintiff's recovery PLUS \$100,000 in statutory attorney's fees for plaintiff's counsel, and PLUS estimated defense fees and costs of \$75,000 from now through trial. Defense fees only through Summary Judgment are estimated at \$10,000. High damages, medium and low damages are estimated at \$500,000, \$260,000 and \$150,000 respectively. Statutory plaintiff's attorney's fees and defense fees have then been added.

Isn't this good enough, or is the tree still “*over-simplified*”? From the defense perspective, doesn't the story boil down to this: “There is a shot at ending the case before trial; there will be a finding on liability or not; and there will be costs and fees and possibly a range of damages at the end of the day”?

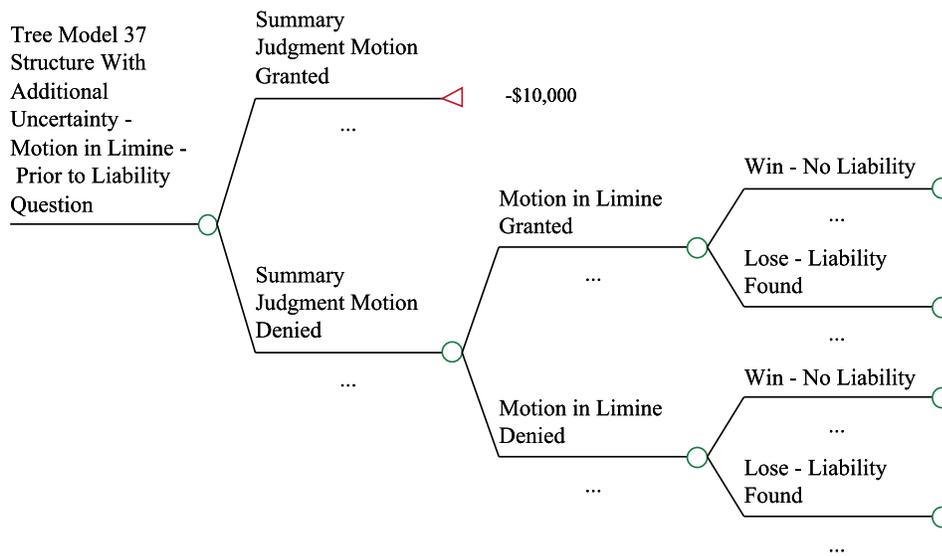
To consider whether the tree's still relatively simple structure is a virtue, wisdom suggests looking to process, and then to results. We recognize that good process generally leads to good or at least understandable results. When the process is lacking, we anticipate the opposite. When I listen to the imaginary dialogue between the defense lawyer and his tree-builder classmate, and look at the tree, I see lapses, or gaps, both in its structure and in the way probabilities are derived.

Let's consider the structure first. In fact, there are multiple junctures of uncertainty, or turning points at which a third party's decision or action will impact what happens in the case. Thus, the tree should begin with a chance node, and branches for summary judgment—granted or denied—as this one does.

However, we also know that if summary judgment were denied, defense counsel would file his motion *in limine* before trial to block the plaintiff from introducing any evidence of her emotional state while working at the company.⁴

When the motion *in limine* is incorporated, the tree would look like the next one, up to the chance nodes and branches at “liability/no liability.”

⁴ At the risk of stating the obvious: if you begin the tree with both motions, with sequential, separate branch layers, each leading to a separate liability chance node, and if damages theories and estimates involve any additional complexity, the tree will become quite large. For discussion with some clients, you may want to break the presentation into separate trees – one that tracks the possible outcome of each motion. In some instances, you may want to present the full, extremely complicated tree as one (hard to read) visual. That makes the point that the case is complicated, that the client's desired outcome is one of many, and getting to that outcome will require threading several needles in just the right and lucky ways.

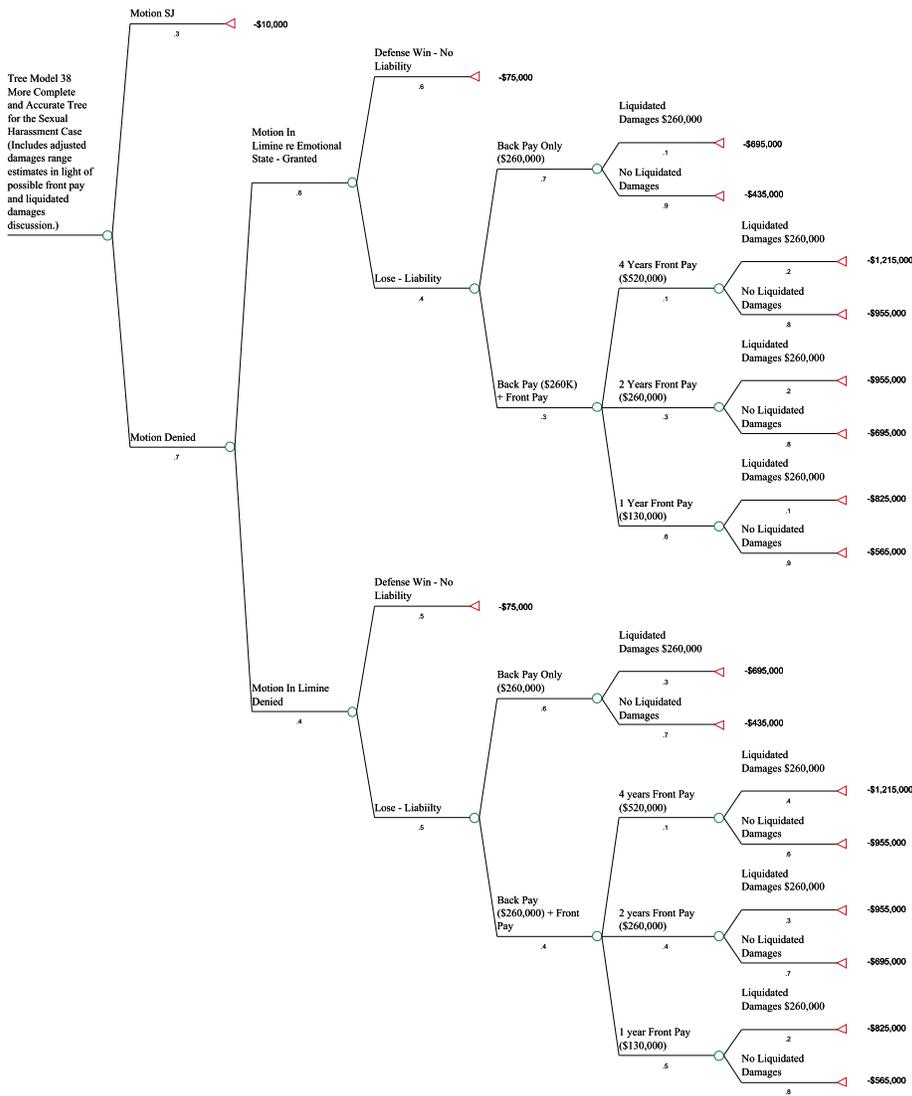


And, as we'll see in the more complete tree, if viewed as a factor that might impact *overall* jury sympathy, the motion *in limine* results could also impact the chance of a liability vs. no liability finding. Certainly, evidence of the emotional impact of company actions on the plaintiff during her tenure would impact the likelihood of the jury finding intentional discrimination and awarding liquidated damages.

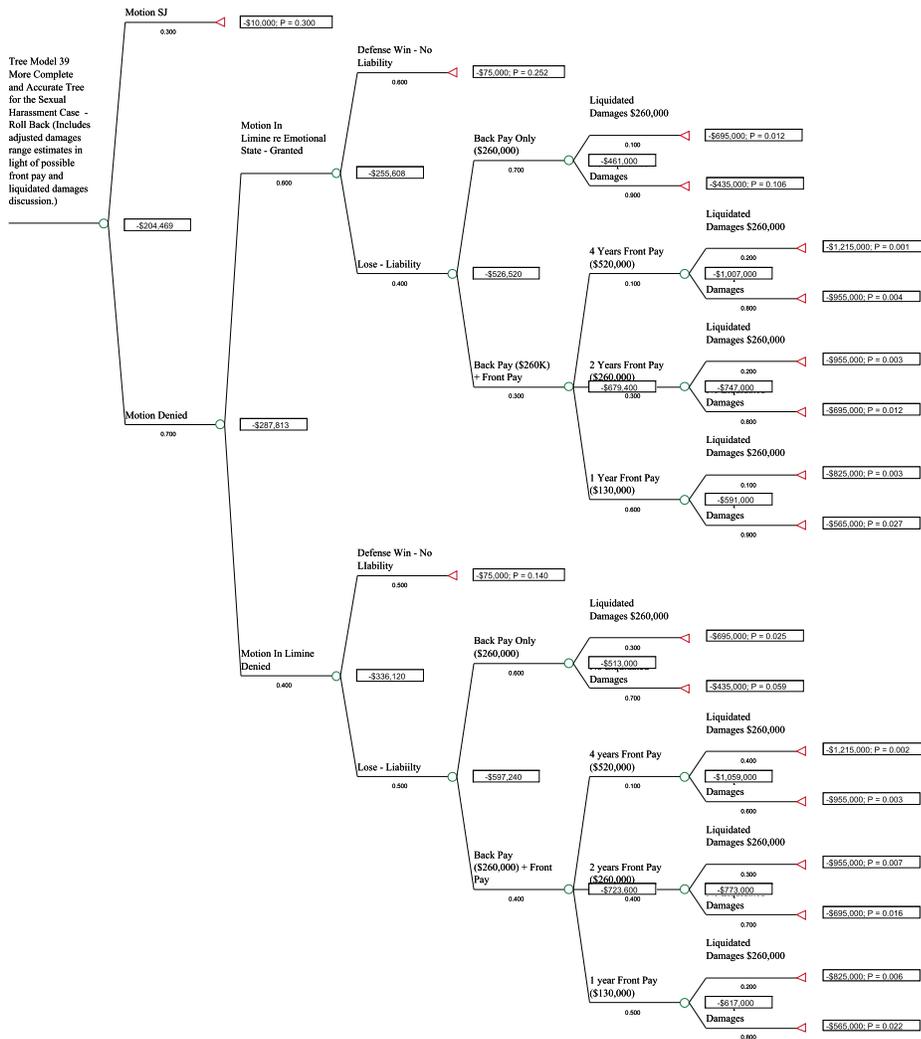
A more complete tree would reflect different paths the case might follow if the motion *in limine* is granted or denied. It would also reflect the truth that the damages award may be back pay only, or back pay plus front pay. If front pay is awarded, there's discretion in the time period permitted. If the court decided to permit evidence about the plaintiff's emotional state, there's a greater chance of liquidated damages.

Next is what a not-so-simple and, in my view, more accurate tree might look like.⁵

⁵ As indicated earlier, these two relatively complex trees as well as certain others that come later in the text are obviously difficult to read. The font size and the image had to be reduced to fit them on the page. Because the tree depicts only a hypothetical case and no real client is involved, I chose to make the image fit the page. It is not important to read the precise words or number to understand the principle being discussed in the text.



And next we see the tree rolled back and its calculated results.



Note that the damages estimates in this tree include the following numbers and calculations:
 Back pay is set at \$260,000.
 The range for front pay has been estimated at 1–4 years. One year of front pay is \$130,000. Two years would be $\$130,000 \times 2 = \$260,000$. Four years would be $\$130,000 \times 4 = \$520,000$. These estimates were used for the range despite plaintiff’s claim for 5+ years of front pay. Under federal law, there are no compensatory damages, but a jury may decide to award “liquidated damages” in the amount of back pay. It could be argued that some of the other estimates—the top of the front pay range at 4 years, for example, and some of the probabilities—are too conservative. However, this segment still draws upon an initial and hypothetical discussion with defense counsel.

As you can see, the EMV of \$204,469 is significantly different from the EMV in our simpler trees. More important is that it shows vastly different ranges of possible outcomes, from a low of \$455,000 to a high of \$1,215,000 (based upon a low damages award of \$260,000 and a high damages award of \$1,040,00 plus plaintiff's and defense attorney's fees of \$175,000).

It's fair to say that if our tree-builder takes the time to sketch out this tree structure, and then discusses various damages components with his classmate, their assessment of the case will be far more rigorous. And that rigor will inform defense counsel's subsequent discussion with his client.

