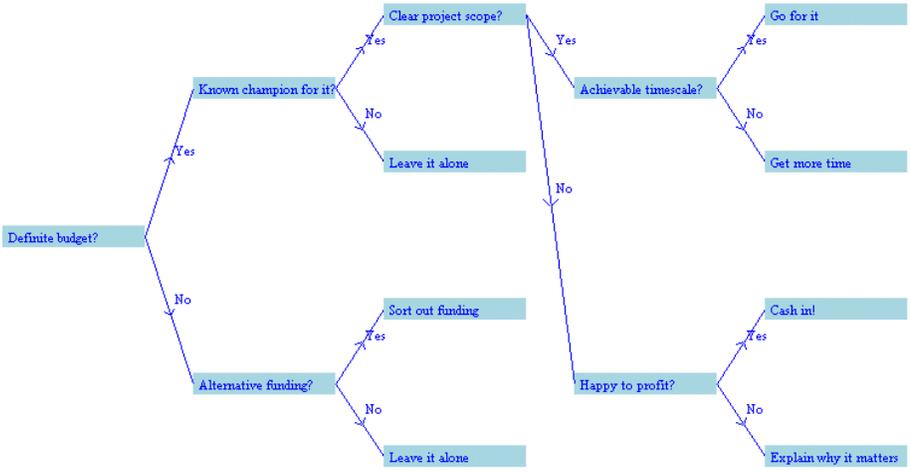
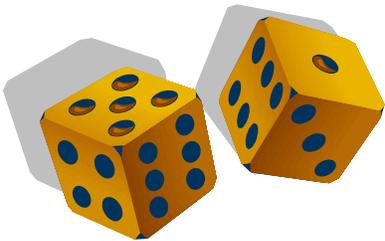


# VALUING CASES FOR SETTLEMENT: SEEING THE FOREST THROUGH THE (DECISION) TREES



Michael S. Orfinger  
Upchurch Watson White & Max Mediation Group  
Copyright 2013

**VALUING CASES FOR SETTLEMENT:  
SEEING THE FOREST THROUGH THE (DECISION) TREES**

Michael S. Orfinger  
Upchurch Watson White & Max Mediation Group  
Copyright 2013

---

*I. INTRODUCTION*

- A. Any attorney with experience in trying and settling lawsuits will tell you that placing a “value” on a case is an *art* – a skill refined by innumerable exercises of judgment burned into memory over a number of years. But is there more to this “art” than meets the eye? Can a lawyer’s intuition be grounded in science, whether the lawyer is aware of it or not? Can a lawyer’s intuition be refined, confirmed, or even challenged by mathematics? The purpose of this seminar is to suggest that the answer is “yes”, and to provide you, the mediator, with an analytical tool against which a lawyer or client’s intuition can be confirmed, refined, or refuted.

*III. WHAT YOU SAY ISN'T ALWAYS WHAT THEY HEAR.*

- A. Sample exercise: Assign a percentage value (0% - 100%) to each of the following “risk-defining” terms as they relate to the world of litigation:
1. Always
  2. Almost always
  3. Frequently
  4. Occasionally
  5. Sometimes
  6. Never
- B. When using any of those terms with the client, what percentage value does the client ascribe to them?
- C. Clients frequently suffer from “selective hearing”. What they select to hear frames their expectations and definitions of a “good outcome”. A lawyer’s use of terms like “pretty good chance”, “fair shot”, “highly likely”, “better than even”, etc. are a leading cause of miscommunication between attorney and client, and can lead to a client developing unreasonable expectations that, once formed, are difficult to change.

<b>Client asks</b>	<b>Lawyer says</b>	<b>Client <u>meant</u></b>	<b>Client <u>heard</u> lawyer say</b>
"What is my case worth?"	"There's no hard and fast rule about valuing cases. It's going to depend largely on how believable the jury finds your testimony about the effect this accident had on you, and a lot will ride on how well Dr. Slipknife holds up on the witness stand. I've seen cases like this go for as little as \$10,000 on the low side to as high as \$150,000 when the jury believes that the plaintiff has a life-changing injury. But every case is different."	"What is the most a jury is likely to award me if everything goes our way in court?"	"Your case is worth \$150,000."
"How do you think we're likely to do at trial?"	"Frankly, the case may well boil down to how well the jury responds to you. If they believe you, and if they like you, then they should come back with a decent award."	"Am I going to win?"	"Yes."

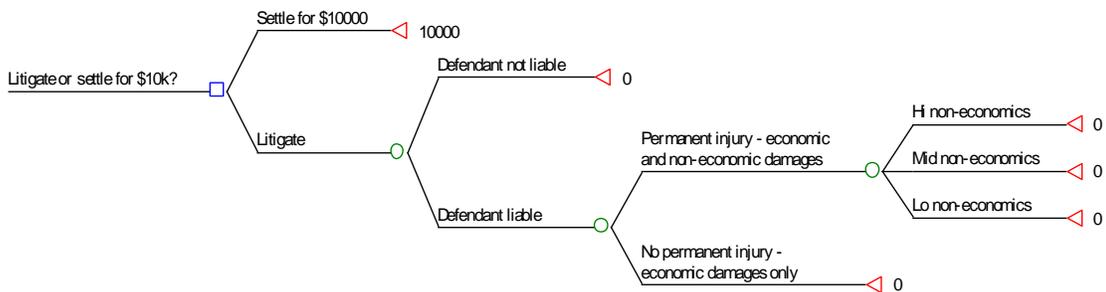
### *III. DECISION TREE ANALYSIS: DEFINITION OF KEY TERMS*

- A. "Decision Tree" – a model representing an analysis of a particular problem, employing statistical analysis to arrive at the most beneficial solution.
- B. "Probability" – the measure of how likely an event is to occur, measured from 0 to 1.0 (or 0% to 100%).
- C. "Decision Node" – Point on a decision tree that represents a strategic choice to be made. Branches extending from a decision node illustrate the choices one can make when confronted with the given decision.

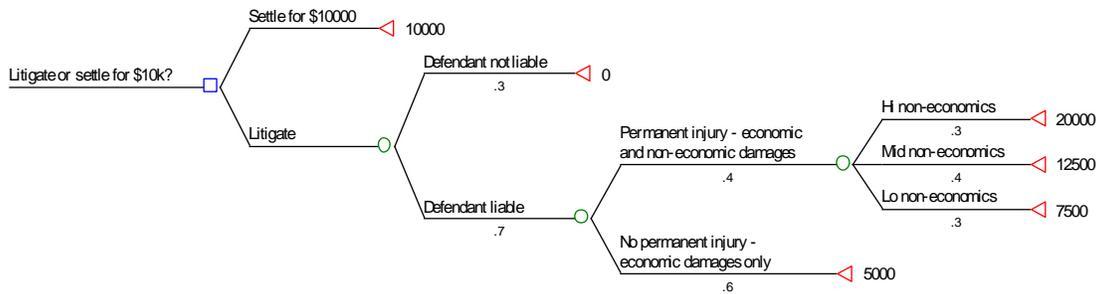
- D. “Chance Node” – Point on a decision tree that represents an uncertainty. Branches extending from a chance node illustrate ways in which the uncertainty may be resolved.
- E. “Expected Monetary Value” (“EMV”) – a monetary value calculated by multiplying the dollar value of possible outcomes against the probability that each will occur, and adding them together.
- F. “Probability” and “odds” are not the same thing, although the terms are often used interchangeably.
  - 1. “Probability” compares the number of good outcomes against the number of possible outcomes.
    - a. Example: The probability of rolling a six on a die is 1/6.
  - 2. “Odds” compares the number of good outcomes against the number of bad outcomes.
    - a. Example: The odds of the Miami Marlins winning the World Series are 500 to 1 against. This means that for every 501 times the World Series is played, the Marlins will win once.

IV. *SAMPLE CASE ONE*

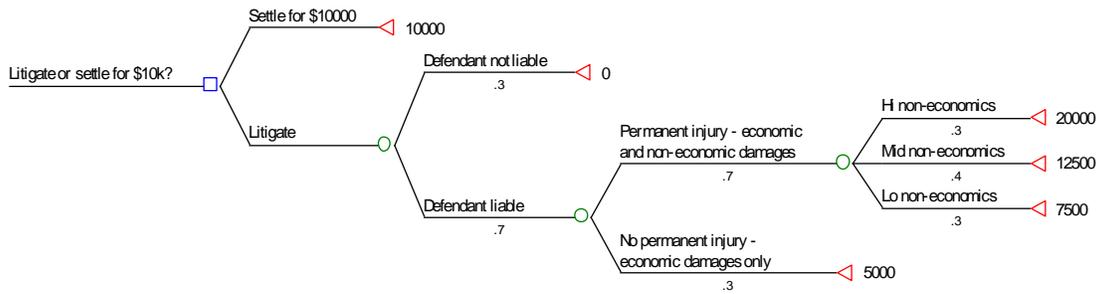
- A. This case involves an auto accident with no issue of causation or comparative fault. Issues in the case are liability, permanency (threshold defense), and damages. The economic damages in the case, after no-fault payments, are \$5,000.00. The plaintiff has received an offer to settle the case for \$10,000.00. **The plaintiff’s lawyer has recommended settlement. The client is unsure.**
- B. A decision tree in such a case, before any dollar values or probabilities are assigned, would look like this:



- C. If the client chooses the “settle” branch at the decision node, then the “terminal value” (i.e. the payoff) of that decision is \$10,000. If the client chooses the “litigate” branch, then the plaintiff’s attorney must analyze the first “chance node” (i.e. liability). What, in the lawyer’s best professional opinion, are the chances of proving liability?
- D. If the defendant is not liable, then the “payoff” is \$0. If the defendant is liable, the plaintiff’s attorney must next assess the chances of proving permanent injury.
- E. If the plaintiff can prove a permanent injury, then the attorney must estimate the reasonable range of non-economic damage the plaintiff is likely to recover, in addition to the economic damages.
- F. Assume the plaintiff’s lawyer believes she has a 70% chance of proving liability (and therefore a 30% chance of a defense verdict), but only a 40% chance of proving a permanent injury (and therefore a 60% chance of the defense prevailing on the threshold defense). Assume further that the lawyer estimates the high end of non-economic and economic damages to be \$20,000, the mid-range to be \$12,500, and the low end to be \$7,500. Now the tree looks like this:



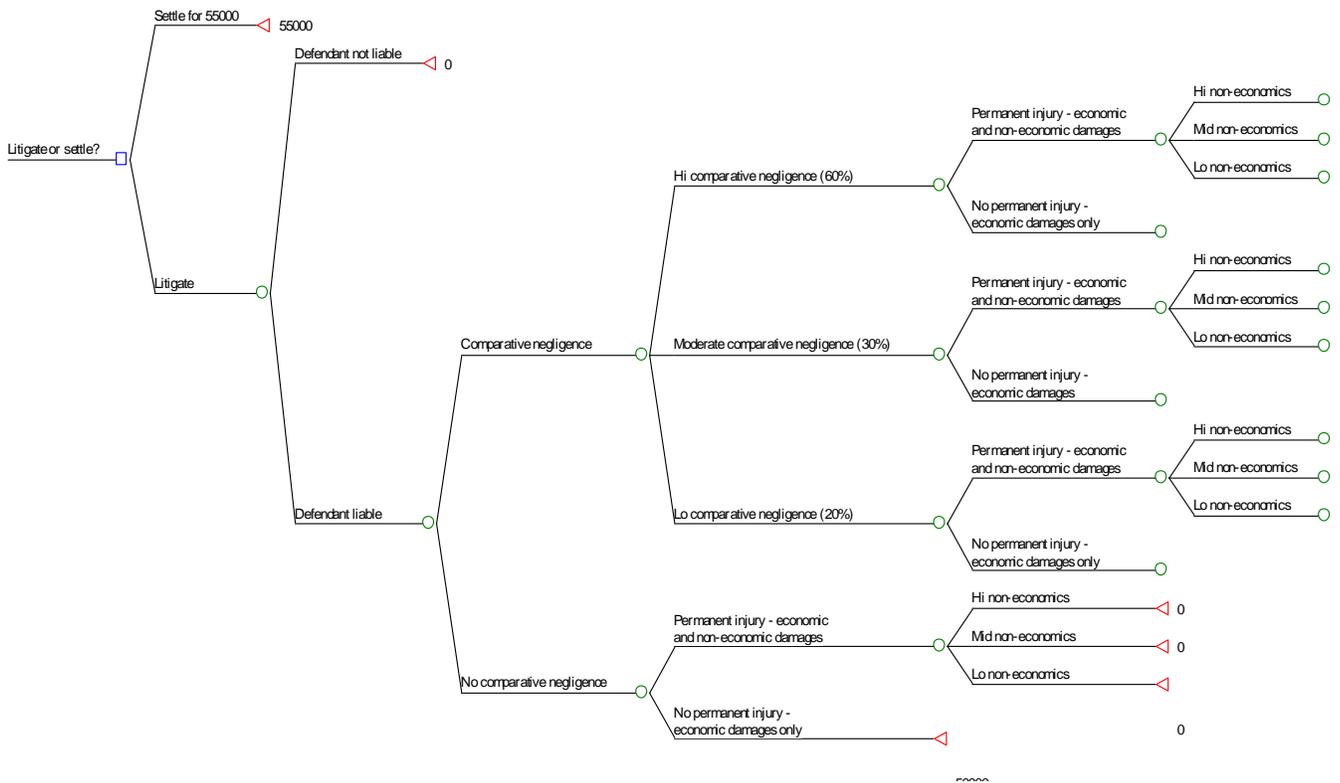
- G. The next step is to determine the expected monetary value (“EMV”) of the “litigate” decision. Each payoff figure is multiplied by the probability of its occurring, and the figures are added together. Alternatively, decision tree software will perform the calculation in what is called a “rollback” analysis”.
  - 1. In this example, the EMV is \$5,810. Therefore, statistically speaking, **and assuming the lawyer’s views of both probability and range of full value are correct**, the plaintiff is better off settling for \$10,000.00.
- H. What if the “permanency” chance node is changed to give the plaintiff a greater chance (say, 70%) of proving a permanent injury? How much does the EMV change?



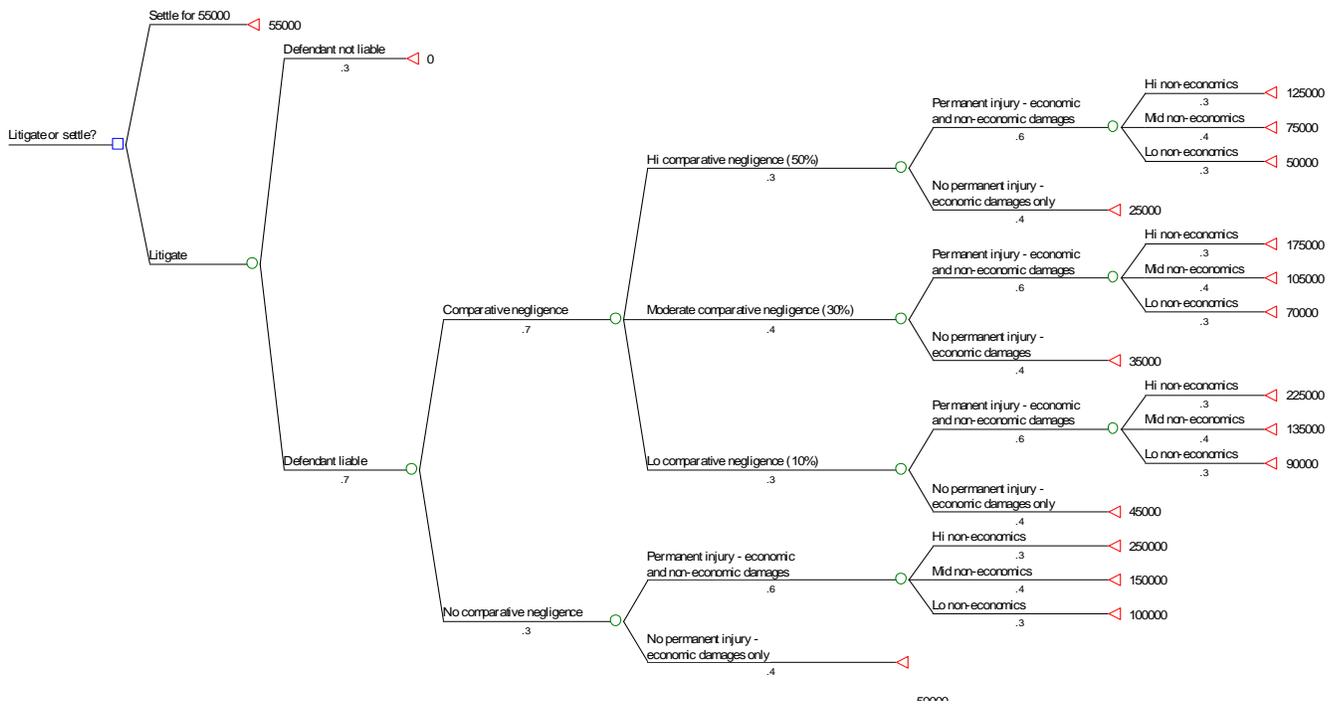
1. The EMV in this scenario is \$7,542. Therefore, the plaintiff is still better off settling for \$10,000.00.
2. Changing the probability of a given chance node to see what effect it has on the EMV is known as a “sensitivity analysis”. Depending on the number of variables in the tree, changing the probability of one or more chance nodes may significantly change the EMV of the case.

V. *SAMPLE CASE TWO*

- A. Case Two is another motor vehicle accident. However, the economic damages are \$50,000, and the plaintiff's comparative fault is an issue in the case. The plaintiff has received a settlement offer for \$55,000.
- B. Adding the single issue of comparative fault expands the size of the tree, but most of the additional branches require multiple looks at the same issues.



- C. Let's again assume that plaintiff's counsel believes he has a 70% chance of proving liability, but a fairly high probability (also 70%) that his client will be found somewhere between 10% and 50% comparatively negligent. Counsel also estimates a 60% chance of proving a permanent injury. In his opinion, cases of this type range in full value (economics and non-economics) from \$100,000 to \$250,000. When completed, the decision tree looks something like this:



D. The EMV in this scenario is \$65,807. Therefore, **assuming once again the validity of counsel's views of probability and range of full value**, the plaintiff's choice should be to litigate until settlement offers meet or exceed \$65,807.

## VI. BENEFITS AND LIMITATIONS OF DECISION TREE ANALYSIS

- A. Decision tree analysis requires the attorney and the client to look at each issue to be decided in a case. It provides a graphic tool for explaining to a client that a trial entails more than simply deciding whether plaintiff or defendant wins. It is an illustrative roadmap depicting potential pitfalls on an issue-by-issue basis.
- B. When a given loss is insured, counsel may have to submit a litigation plan and subsequent case analyses to the carrier, so that reserves may be set, adjusted as needed, and so settlement authority can be determined for mediation. Decision tree analysis can assist the lawyer in quantifying what may otherwise be anecdotal evidence or "gut reactions" to a particular case.
- C. Decision tree analysis can provide the attorney, client, and insurer with an objective justification for recommending or making a settlement decision, where emotion might lead to a different decision. Such an analysis may insulate a claims representative's or corporate decision-maker's settlement decision from intra-company criticism.

- D. Any analysis based on probabilities is only as valid as its underlying assumptions. If the attorney's judgment as to probability is flawed, then so too is the decision tree analysis. Overconfidence will skew the resulting EMV, as will timidity.
- E. Decision tree analysis can create a false impression of precision. No one can say that the probability of something occurring is 60%, as opposed to 62% or 57%. Further, the EMV is itself an imprecise figure, an average value derived from trying a case 100 times. Because a given case will only be tried once (we hope), parties and counsel must recognize that the EMV carries with it a margin of error.
- F. Every estimate of probability on the decision tree is the lawyer's educated guess. The more issues involved in a case (because of multiple claims, defenses, or parties), the bigger the tree becomes and by definition, the greater the number of educated guesses. The more guesses one is required to make, the greater the margin of error in the EMV becomes.
- G. Decision tree analysis does not take subjective, "client specific" factors into account. Examples are a given client's risk tolerance, need for immediate payment, or desire to settle in a given tax year. It also does not take into account things such as the benefit of a confidentiality clause, a general release, opportunity costs invested in having employees involved in discovery, or the emotional component of ending litigation.

*Sources:*

1. The software used to create the decision trees shown above and used in this presentation is “TreeAge Pro”, from TreeAge Software, Inc., [www.treeage.com](http://www.treeage.com).
2. Aaron, “Finding Settlement with Numbers, Maps, and Trees”, *The Handbook of Dispute Resolution* (Jossey-Bass 2004).
3. Victor, “Interpreting a Decision Tree Analysis of a Lawsuit”, 2001 (located at [www.LitigationRisk.com](http://www.LitigationRisk.com)).
4. “Changing Probability to Odds”, (located at [www.math-magic.com/pdf\\_files/probability/prob\\_to\\_odds.pdf](http://www.math-magic.com/pdf_files/probability/prob_to_odds.pdf)).