Mind Genomics and the Law

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Introduction

When three of the authors first met in late Spring, 2007 (JW, RRP, HM), author HM had just published Selling Blue Elephants: How to make great products that people want before they even know they want them. The publication was mid-April. The book featured a then new-to-the-world approach called RDE, rule developing experimentation. The objective of RDE is to understand the decision criteria that people use when they evaluate alternatives in everyday life. The approach of RDE was quite simple; for a specific situation (e.g., ordering breakfast in a diner), identify the features of one's everyday life for that situation, put these features into categories or silos, create alternative features instead of those commonly encountered, mix and match these features into vignettes, get consumer responses, and then identify 'what's working.'

The foregoing description is simple; we'll go into the methods and the results in this book. What's important for the reader to know right now is that the original work in RDE had been commissioned for studies on items and services to be sold in the marketplace. Author Wren and Parris visited Moskowitz to discuss the use of RDE for the law.

Good ideas don't necessarily spring up in one place, and neither did the application of RDE to the law originate in that visit. There seems to be a zeitgeist, a spirit of the times, working in science, so that the same idea manifests itself to various people who are interested in a topic area. And so this book, which represents the collaboration between lawyers and scientists, between academics and business people.

RDE leads to Mind Genomics

It is in the nature of people to push boundaries, to see how far they can go with what they have, to see what new vistas, new worlds they can unfold. And so with RDE. The RDE tool, experimental science in the service of knowledge, did not and indeed could not remain static. If we have a tool, RDE, which tells us how the mind works, how far can we run with that tool? RDE began as a tool to understand consumers, ending up in this book and its companion volumes on other topics, books dealing with the science of the everyday. Part of the attractiveness of Mind Genomics is the ability to dimensionalize everyday life, to understand responses to everyday granularity, everyday specificity, to learn rules, and to identify and then to understand how to deal with individuals with different mind-sets.

This book on Mind Genomics and the Law was planned to combine science, the law, and people. The goal of this book is to discover how ordinary people respond to information, the types of information found in law books, information about disputes. We will learn more from RDE, however. We will establish how the different protagonists drive responses (are there interactions between type of protagonist and severity of judgment), and how different elements drive feelings/emotions. And, we will develop typing tools that can be used widely to understand the nature of prospective jurors.

Perhaps most important long term, we will establish a living format that can accept new cases, new situations, exploring them in a scientific manner, and adding to our Mind

Genomics book. The bottom line is that we will start with a book of 12 cases' but we may end up with hundreds of such cases, in 'living appendices,' updated by common experiences, across time, cultures, and situations. Mind Genomics, in turn, will become a living system by which to understand the law, and importantly, the reaction of ordinary people to ordinary factoids, the stuff of the law.

Part I
The Basics

Chapter 1
Basics

Introduction

When one deals with the 'law' there is always a sense of treading on hallowed ground, or at least treading on disputed ground which may or may not have a sense of sanctity. Men are by their natures seekers of justice, although quite often prosperity and venality corrupt that sense, giving rise to behaviors of which one might otherwise be ashamed.

Despite the implied sanctity of the law, at least in a court, there is the realization that laws are, for the most part, creations of people, reflecting in some deeper way the human spirit for justice. Can we investigate the nature of this law that people create? We don't mean by appealing to philosophy about the nature of man, nor do we mean a comparative history of legal treatments of the same problem, across centuries, cultures, and countries. Rather, we mean by systematic experimentation. When looking at the facts of a case, can we identify through experiment which facts are perceived to be important, which facts are perceived to be irrelevant? And, even more important, can we draw some conclusions about people, regular run-of-the-mill human beings who are faced with the facts of a law case. Can we identify how they respond? Can we find out whether people are the same, responding in the identical way to the facts presented to them? (We already know the answer to that. It is no...but the nature of the 'no' is what will interest us).

With this very short introduction, we now move into RDE, rule developing experimentation, an approach to understand what might be called the 'algebra of the mind.' We apply RDE to legal cases throughout this book, using the principles of experimental design, statistical modeling, and science-guided interpretation.

The game's afoot (attributed to Sherlock Holmes). Let's now jump in. This chapter introduces the tools that we will use, and goes through the results of one case (automobile collision), presenting how one sets up the case, acquires the data, and then analyzes the data, both from the statistical/scientific perspective, and then from the legal perspective. We will thus see how a scientist looks at data, and how a lawyer looks at the same data, with the data not being technical information, but rather the meat and bones of our everyday legal system

The raw materials – elements and silos

The basic unit of an RDE study is an element. We use the term 'element' to describe a word, a phrase, even a picture. The key to remember is that an element is a simple idea which could stand alone. An element is not connected to something else in terms of grammar, but rather constitutes a simple, declarative phrase, preferable presenting a simple idea.

To get a sense of what we mean by elements, consider the phrases in Table 1.1. The table shows us a set of phrases from a study. The phrases, our elements, fall into six groups,

or silos. The silo comprises a set of related, interchangeable elements. The elements in a single silo don't have to communicate the same idea in different ways. Rather, the elements in a silo could substitute for each other. They occupy the same 'logical place' in a paragraph or vignette, defined below.

Table 1.1: Example of six silos (A-F), each silo comprising six elements. Each silo comprises elements conveying the same 'type' of message, albeit of different content.

	Silo A The plaintiff
A1	The Plaintiff is a 21 year old female in her senior year of college, studying to be a teacher
A2	The Plaintiff, although originally from Mexico, has been in the United States for most of the last 23 years doing carpentry and painting work
A3	The Plaintiff is a homemaker and mother of three children aged two through eleven
A4	The Plaintiff, age 16, had just obtained his driver's license two weeks prior to the collision
A5	The Plaintiff is 34 years old, unmarried and unemployed, but had been considering a return to school to obtain a high school GED
A6	The Plaintiff owns and operates a small business with his wife, has one college-aged child, two grown children, and four grandchildren
	Silo B The defendant
B1	The Defendant is a white male, age 30, who was traveling on business at the time of the collision
B2	The Defendant is a 43 year old Hispanic male who was driving a work truck when the collision occurred
B3	The Defendant is a black male, age 21, who was driving his personal car at the time of the collision
B4	The Defendant is a young white female who was driving a borrowed car with friends during a break from school
B5	The Defendant is a publishing company senior executive driving a BMW 760Li Sedan
B6	The Defendant, age 55, is the minister of a large church and well known from television broadcasts
	Silo C What happened
C1	The Defendant apparently crossed the center line of the highway into oncoming traffic while texting on a cell phone
C2	Witnesses say the Defendant ran a red light while traveling at least 20 miles per hour above the speed limit
C3	Immediately following the collision, in which the Defendant slammed into the rear of the Plaintiff's vehicle, the Defendant's blood alcohol level was double the legal limit
C4	The Defendant appeared to swerve into the side of the Plaintiff's car while attempting a highway pass in the face of oncoming traffic
C5	The collision occurred when the Defendant suddenly tried to cut across two lanes of traffic in the attempt to exit the freeway

C6	The Defendant was attempting to make a left turn and failed to yield to the oncoming traffic
	Silo D Defendant prior history and statement
D1	The Defendant had already been cited for this kind of conduct on two prior occasions in the last year and a half
D2	Witnesses at the scene heard the Defendant saying the Plaintiff "deserved it" for being "a stupid driver"
D3	The Defendant acknowledged full responsibility at the scene of the collision and expressed remorse for what had happened
D4	The Defendant has admitted to being in a hurry before the collision because "I knew people were waiting for me"
D5	The Defendant, who had just learned of a close friend's death, admits now to being too emotionally wrecked to be driving at the time of the collision
D6	The Defendant admits to making bad choices as a driver but says those choices weren't what caused the collision
	Silo E Other facts
E1	One witness at the scene says that the collision possibly could have been avoided if the Plaintiff had been paying more attention to the traffic
E2	The Defendant went to the hospital the day after the collision to check on the Plaintiff, and has expressed the desire now to do whatever is right for the Plaintiff
E3	This is the third lawsuit of this type that the Plaintiff has filed
E4	In the moments after the collision, while being extracted from the car, the Plaintiff kept repeating, "I'm sorry, I'm so sorry, it was an accident"
E5	At the time of the collision the Defendant was facing directly west into a setting sun, which may have impaired the Defendant's vision
E6	Evidence indicates that the Plaintiff may have been driving in excess of the speed limit
	Silo F - Current condition of the plaintiff
F1	The Plaintiff was taken to surgery twice and was hospitalized for five days following the collision, but is expected to make a full recovery
F2	The Plaintiff's left leg was amputated above the knee as a result of the collision
F3	The Plaintiff has been diagnosed with mild traumatic brain injury as a result of the collision, and is still struggling with short-term memory deficits and depression
F4	The Plaintiff is now a quadriplegic permanently paralyzed from the neck down as a result of the collision
F5	The Plaintiff was released from the hospital after two days of observation, but continues to be treated by a chiropractor for back and neck pain
F6	The Plaintiff has fully recovered physically but continues to suffer from post-traumatic stress disorder after being pulled from the car just moments before it burst into flames

Where do elements come from?

The elements in Table 1.1 appear to be full ideas, not partial ideas. We know that when people are instructed to provide elements by being told the general structure of the case and the specific nature of the particular silo, the elements generally don't end up being quite as well written as they are in Silos A-F.

The 'trick,' if such word may be used, is not to let the perfect be the enemy of the good, to take what a person provides, without criticisms (although with guidance), and later, after the session with idea generators has finished, go back to promising elements to polish them.

In most creative sessions the elements come from ordinary run-of-the-mill respondents, people not expert in the topic area, but people who, having been briefed about matter of the case, use the labels of the silos as guides to create the elements. Those who have had experience with respondents in these 'creative sessions' realize that all too often the rough-appearing elements really comprise some very cogent, powerful ideas. Those ideas are extracted by polishing the element, sharpening its message, converting its diction, making it a direct, declarative, simple, and easy-to-understand phrase.

Often those beginning RDE studies feel that even with this emphasis on one's first ideas, later subject to polishing, that the RDE method ends up working with 'magic' elements, that some extensive polishing converts any idea to a world-class, powerful, cogent, clearly expressed ideas. i.e., an altogether great element. The reverse is just the case. Generally the ideas end up being modest, no matter how much work is expended. It is the rare element which scores very well in an RDE time, at least the first time the specific topic is explored. Explore the same topic in a set of three sequential studies, with each study selecting winning elements in previous studies, and polishing promising elements, and you're likely to get increasingly better performance over time. Nonetheless, it's only after 2-3 studies that you see the improvement in the elements, not after the first study. We attribute the improvement to experience with what types of elements for this particular situation perform well versus perform poorly.

Creating test combinations – the vignettes (Figure 1.1)

With a set of 36 elements it is tempting to instruct the respondents to rate each element, one element at a time, averages the ratings across the respondents, and reports that average rating. Such an approach is the typical strategy, but may be biased for the following simple reason. With one single element, there is no 'story' about what is happening. Essentially the element is taken out of its natural context, and presented to the respondent. An element 'in context' may perform much differently than the same element 'out of context.' The easiest example is 'price.' Giving a respondent a price and asking the respondent to assign a rating to the price, without the price referring to something specifically, is meaningless. The price has to refer to something specific; otherwise the respondent cannot validly answer the question.

Price is an extreme case, but the same need for 'context' applies to all elements. With context, the elements tell a story. RDE looks for the contribution of the individual element, but a contribution within a set of different context. In order to create that context, RDE

combines elements into easy to read combinations, so-called vignettes, or test concepts. The vignettes are not assembled at random, but rather created according to a plan, a so-called experimental design. The experimental design ensures the following properties, necessary for the proper statistical analysis of the results, and the proper estimation of what each element contributes to the rating.

1. The elements appear independently of each other, in a statistical sense. That is, if we know that certain elements do not appear in a vignette, we still do not know for sure whether the 'next element in the list' will appear. Statistical independence is a requirement for regression analysis, a workhorse tool which estimates the individual contribution of each element.

2. Each element appears several times. In the particular design used in this book we work with six silos, each silo comprising six elements. The experimental design specifies 48 vignettes, each vignette comprising 3-4 elements. On average, across the 48 vignettes, each vignette will comprise 3.75 elements. The experimental design ends up inserting each element into 5 of the 48 vignettes.

3. The basic experimental design, 6 silos each with 6 elements, is fixed for all respondents. However, the specific combinations change from one respondent to another, despite the fact that the experimental design is fixed. This change in the specific combinations, but not the 36 elements nor the five appearances per element, is effected by a simple permutation scheme. The permutation scheme re-labels the elements so that, for example, A1 becomes A2, B4 becomes B1, etc. An element never leaves its own silo, but does take on a different number in the silo. This strategy of permuting or change the label of the element ends up keeping the design structure the same, but creating new combinations for each respondent.

4. The practical benefit of the foregoing three aspects is that the RDE study does not depend upon the judicious selection of one set of 48 vignettes to represent the many thousands of possible vignettes. One need not be particularly 'savvy' at the start of the RDE study. One need only develop the elements. The RDE mechanism does the rest, generating clear, easy to understand results.

Figure 1.1: Example of a three-element vignette. The vignette is constructed according to the dictates of the experimental design. The elements are placed as simple, unconnected, centered text.

The Defendant is a white male, age 30, who was traveling on business at the time of the collision

The Defendant was attempting to make a left turn and failed to yield to the oncoming traffic

The Plaintiff has been diagnosed with mild traumatic brain injury as a result of the collision, and is still struggling with short-term memory deficits and depression

The Scales

Our second topic is the scale that the respondent uses. Scales are numerical tools by which the respondent communicates to us his feelings.

Scales come in a variety of forms. The Harvard experimental psychologist, S.S. Stevens, classified scales into four major groups, with each group allowing a specific set of statistical analyses. It is important to keep these analyses in mind, to know their benefits, but also to recognize their limits in terms of analysis and then even more important, in what can be inferred, the so-called interpretation of the scale. Stevens' categorization appears in Table 1.2. In RDE studies we end up with all four scales, as we will see below:

Table 1.2: Stevens' categorization of scales, what the scales mean, and the allowable transformations of the data.

Scale Type	Mathematical structure	Rating scale	Permissible Statistics	Admissible Scale Transformation
Nominal	standard set structure (unordered)	Select an emotion	mode, Chi-squared	One to One (equality (=))
Ordinal	totally ordered set	Select from an ordered set (e.g., ordered punishment)	median, percentile	Monotonic increasing (order (<))
Interval	affine line	Rate seriousness on a 1-9 scale	mean, standard	Positive linear (affine)

			deviation, correlation, regression, analysis of variance	
Ratio	one-dimensional vector space	Assign a number on an unlimited scale to represent degree of seriousness…with the numbers having ratio properties (so 60 denotes twice as serious as 30)	All statistics permitted for interval scales plus the following: geometric mean, harmonic mean, coefficient of variation, logarithms	Positive similarities (multiplication

Scales represent ways to talk to respondents. As we will see below, RDE uses the scale values assigned by a respondent in conjunction with the elements to uncover relations between the presence/absence of an element and the scaled response. For that information we will need the experimental design and a statistical program, OLS, ordinary least-squares regression.

We get a sense of the nature of the rating scales when we look at the scales in Table 1.3. Our particular RDE study in this chapter deals with an automobile accident. The elements presented the facts in the case. Our first rating scale allows the respondent to select a punishment that is deemed to be fair for the defendant. Our second rating scale allows the respondent to select a feel that he or she is experiencing just after reading the screen which describes the facts of the case in the form of the vignette.

Our two scales don't exactly remind us of the standard types of scales to which we are accustomed, e.g., an anchored 1-9 scale, with the anchoring term on scale point 1, and a corresponding anchoring point on scale point 9. Rather, we see an ordinal progression of punishments shown in scale one, and a set of different, non-ordered feelings/emotions in scale two. These are not the standard, simple scales whose scale values we can simply average. Yet, these are the relevant types of scales that will help us understand the responses to our vignettes.

When it comes to analyzing the scale data, which we explain below, we will transform the two scales. For the first scale, dealing with degree of punishment, we will make the simplifying assumption that we are dealing with a 7-point scale. We will treat the scale as if it were an equal interval scale. Although we may be violating some of the rules of scaling by treating our seven points as equally space, the benefit to us will be a very simple data structure that will give us great insight into the respondents mind.

We would have similar insights if we rescaled the seven questions, so that instead of equal intervals, we actually had a separate group of consumers lay out these seven points out on a scale. Exercise of the latter type would end up producing pretty much the same type of results as we would see by simply treating our ratings as a 7-point category scale.

Our second scale comprises the selection of a feeling/emotion. When we make that selection we work with the so-called nominal scale (Table 1.1), where we have scale points corresponding to alternatives, these alternatives bearing no numerical relation to each other. One emotion is not 'stronger' than another, so there isn't even an ordinal property with which to work. Rather, we have five different feelings/emotions. In the subsequent analyses we will create five new scales, either have the value 100 when the feeling/ emotion were selected for a particular vignette, or the value 0 when the feeling/emotion was not selected. That binary transformation then allows us to treat the feeling/emotion ratings, the output from question 2, in a numerical fashion.

Table 1.3: The two rating questions

Question #1. What punishment do you consider fair for the Defendant?
1. Zero compensation from the Defendant to the Plaintiff
2 . A small amount of compensation to Plaintiff for a part of Plaintiff's medical charges
3. Compensation to Plaintiff equal to all of Plaintiff's medical charges plus some amount for a period of physical impairment
4. Compensation to Plaintiff for all medical charges, physical impairment and loss of earning capacity
5. Compensation to Plaintiff for all medical charges, physical impairment, and loss of earning capacity, plus some amount for physical pain and mental anguish
6. Compensation to Plaintiff for all medical charges, loss of earning capacity, and as much as the court permits for physical impairment, pain and mental anguish
7. Compensation to Plaintiff for all medical charges, loss of earning capacity, as much as the court permits for physical impairment, pain and mental anguish, and then the same amount again for punitive damages to punish the Defendant and to deter others from engaging in the same conduct
Question #2. Based on this screen ALONE... How do you feel after reading about this case?
Outraged
Bothered
Don't Care
Somewhat satisfied
Contented

The respondent experience (Figures 1,2 – 1.4)

RDE requires the respondent to evaluate a combination of elements, the vignette. It is the natural tendency of people faced with a vignette comprising multiple elements to rate each element separately. Perhaps the fact that the elements stand away from each

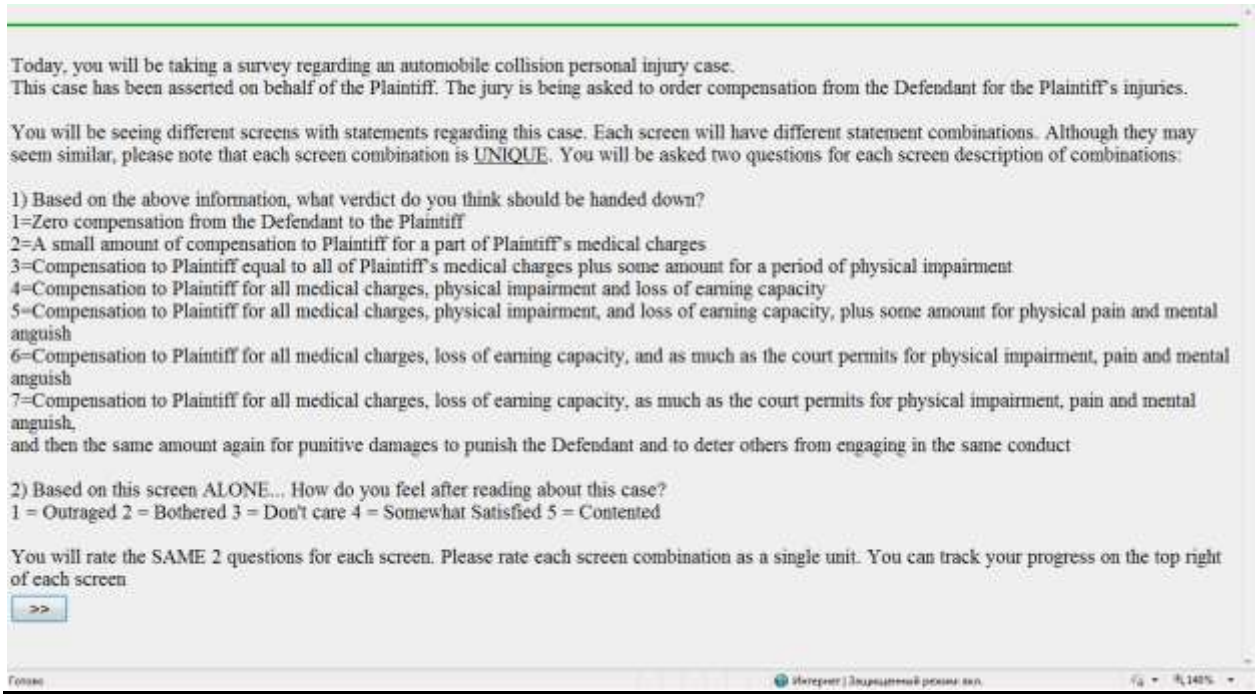
other, in a simple, stark, centered position, communicates to the respondents that they ought to evaluate each element separately. That structure of presentation, stark centered elements with no connectives, was selected to make the respondent's task easy, but the unintended consequence is the need to instruct the respondent to evaluate the combination as one entire thought, one mini-paragraph.

Each RDE study begins with its own orientation page, the landing page. As soon as the respondent agrees to participate, and hits the embedded 'key' in the email invitation, the respondent is led to the landing page shown in Figure 1.2. The page seems a bit dense compared to other, simpler landing pages, but it is not.

We unpack the landing page as follows:

1. The first paragraph talks about the case … an automobile collision personal injury case. It's always important to tell the respondent about the case, but at the same time provide as little information as possible. The more facts one puts into the orientation, the less impact the elements will exert
2. The second paragraph talks about the orientation of the case. The case has been asserted on behalf of the plaintiff. The case involves compensation. We now know that we are dealing monetary issues.
3. The first two paragraphs set up the case, in such a way that the different aspects can be clearly demarcated (the 'what' happened, and the 'focus of what we're doing here')
4. The third paragraph tells the respondent that each of the vignettes (screens) will be different, comprising different combinations. The reason for this warning information is that with 36 elements appearing five times, the respondents often 'feel' that they are evaluating the same vignettes. The experimental design ensures that the 48 vignettes differ from each other. The respondents, most of whom respond almost 'automatically,' without paying much attention, see these elements repeating. It is natural for these respondents to say that they feel that they are seeing the same elements, and vignettes again and again. Of course the vignettes differ, but they don't know that. They do know that they see the same elements again and again. They just don't know about the underlying design. This third paragraph allays their concern.
5. The fourth set of paragraphs lays out the first rating scale, presenting the wording for the seven scale points. The fifth paragraph presents the second rating scale. Respondents find it comforting to know what they will see; this set of paragraphs simply provides a peek into the rating scales.
6. The final paragraph warns the respondent that each vignette or screen will ask for the same two ratings.
7. The orientation screen ends up being a gentle introduction into the world of RDE, preparing the respondent for what will be presented, but trying not to give any additional information other than what is necessary for the respondent to make an informed judgment.

Figure 1.2: The orientation page for the automobile collision, personal injury study



Once the respondent has finished reading the orientation page, the respondent presses the forward button on the bottom (>>). The respondent is immediately led to the first pair of rating screens, for the first vignette (Figures 1.3 and 1.4). From then on, for the full set of 48 vignettes, the respondent merely rates the vignette on the rating scale, and the computer program advances the RDE interview.

Although good practice in most computer-based interviews suggests that the respondent confirm his choice to move forward by pressing the 'enter' key, an RDE study will comprise more than 96 screens for the vignettes alone, since each vignette will be rated twice, once for the rating of fair punishment (rating question #1), and once for the rating of feeling/emotion (rating question #2). It is asking a lot of the respondent to press the 'enter' key an additional 96 times. Thus the computer program is set up to advance the interview automatically, without giving the respondent a chance to change his answer. The approach is ergonomically better, making the RDE interview more pleasant, and certainly far less taxing.

Figure 1.3: The first vignette (on the left), and the rating scale for fair punishment (on the right). The top of the vignette shows the number of different screens finished (1) and the total number of screens (72). Each vignette counts as only one screen, although there are two rating questions for the vignette.

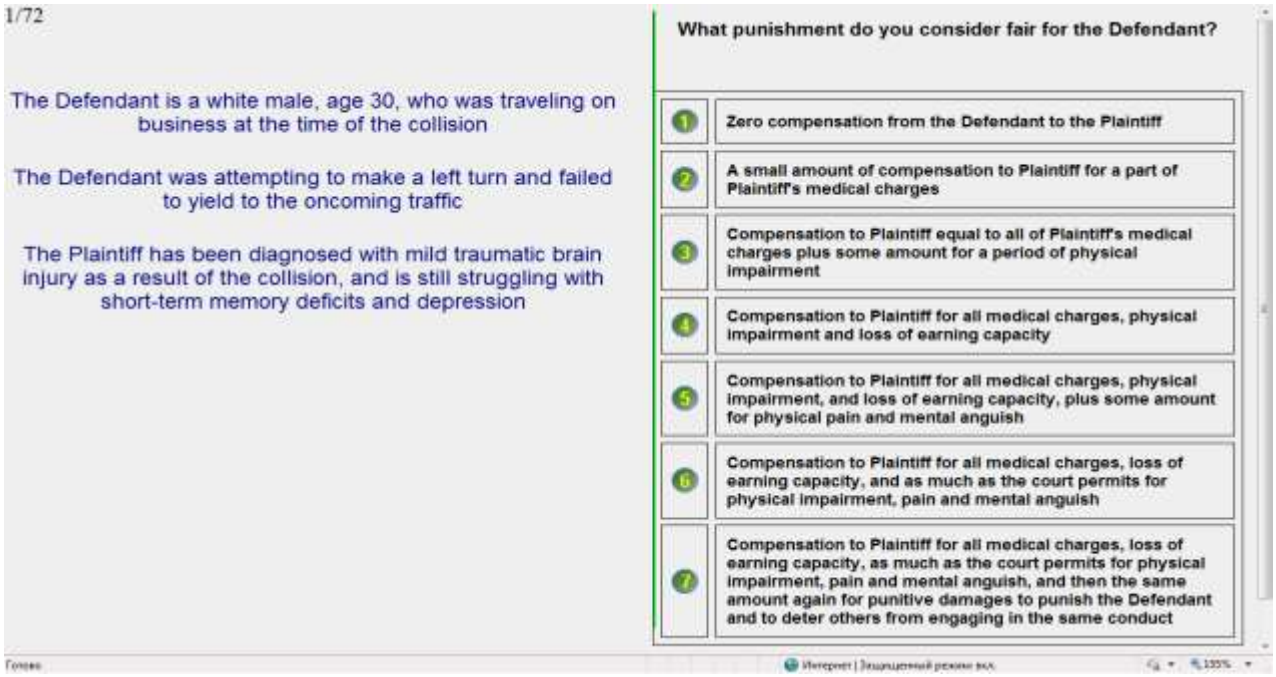
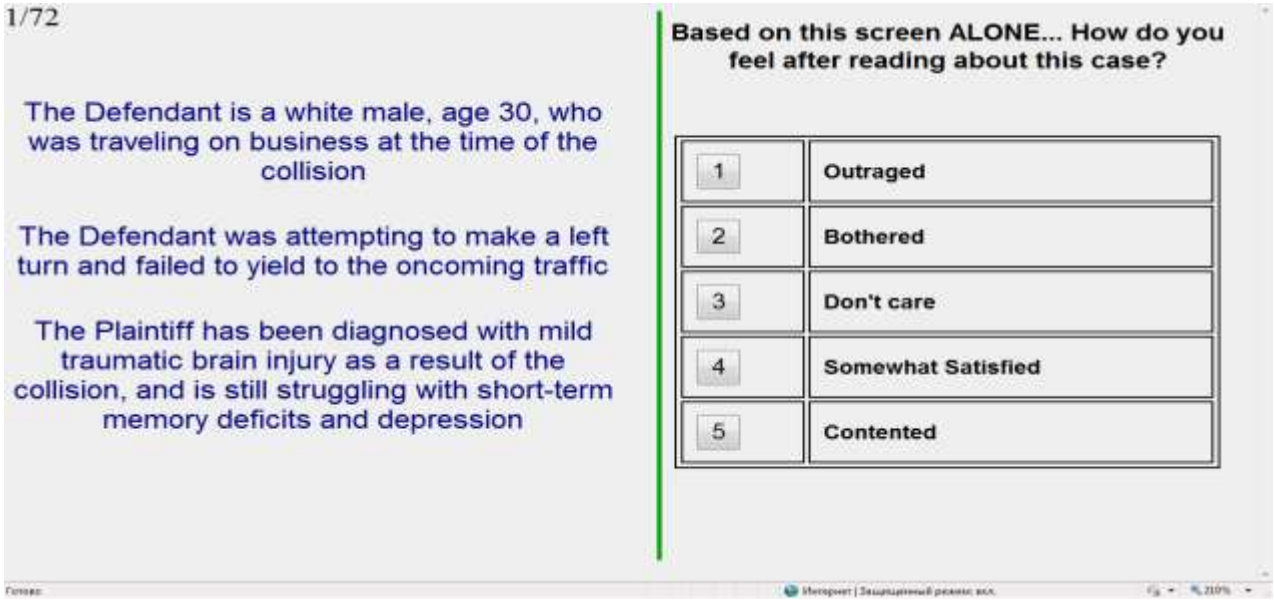


Figure 1.4: The first vignette, and the second rating scale (feeling/emotion). The RDE program still considers this second rating scale part of the first screen of 72 different screens because the vignette is the same.



<u>Finding out more about the respondent (Figure 1.5)</u>

RDE in its most basic form does not really 'care' about who the respondent is. Rather, RDE focuses on the pattern of the responses to a limited set of stimuli, and deduces the 'nature' of the respondent from the pattern of these responses, and especially from the link between the ratings assigned to the vignettes and the presence/absence of the elements.

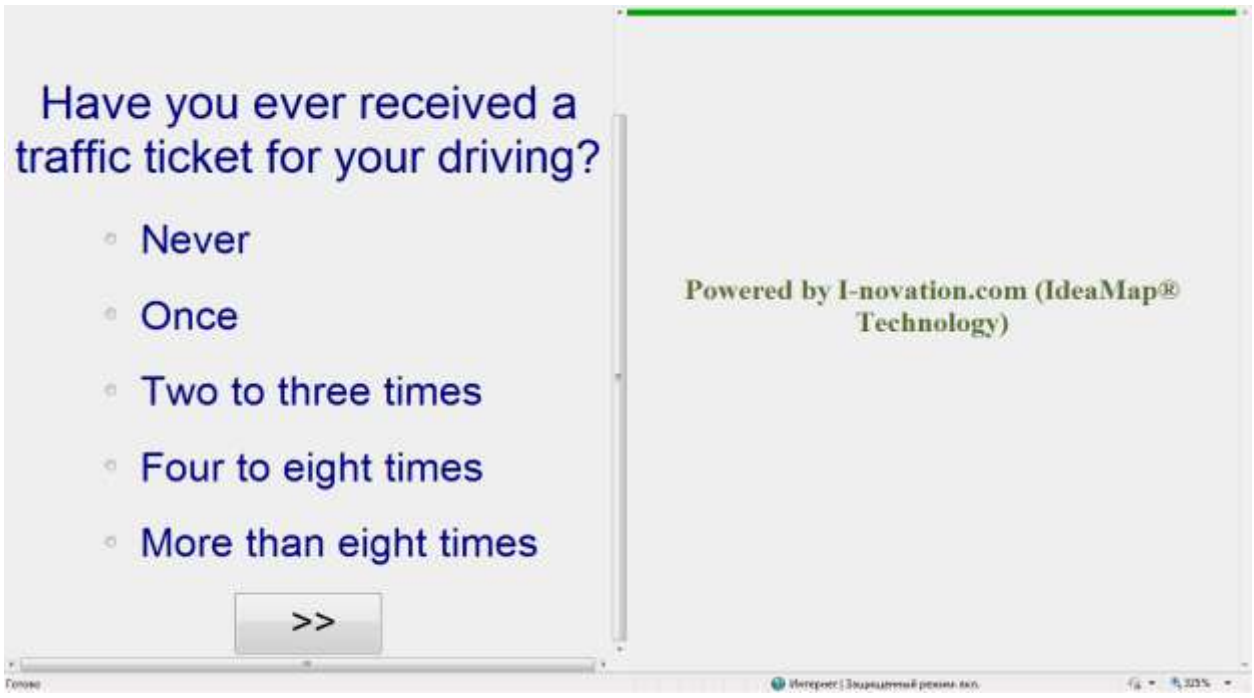
Most researchers are, however, interested in learning more about the respondents. There are a number of reasons for this interest:

1. It may be important to represent a specific set of groups of individuals in the test population. We won't know who the respondents are, or whether we have adequately represented the groups unless we have a way to find out who are the individual respondents. For legal issues we may want to include or to exclude specific groups of individuals. In many cases, the best way to find out about membership in these groups is to ask respondents, although with today's increasing use of data sources from different sources, so-called 'big data' it may be possible to supplement direct questions with information from other sources.

2. In many cases we want to learn whether or not the patterns we discover for the total panel, all the respondents, is manifested by specific key groups in the population. For example, we may be interested in the response to accidents, and find that certain descriptions of an accident strongly persuade the total panel. Is this persuasion manifested in all the key groups of a specific class, e.g., ethnic groups, or just manifested very strongly by some key groups, and irrelevant to others. Asking the respondent to tell us who he or she is, through a set of additional questions helps us break out the data into the patterns evidenced by different groups.

In practice one can ask the respondent to profile himself on literally hundreds of different aspects, ranging from who he is to what he believes to his attitudes towards legal issues. The task of self profiling can become arduous. In RDE studies we attempt to reduce the onerousness of the study by putting the classification at the end of the interview, after the respondent has rated the test vignettes, and limiting the questions to a few that are relevant to the case, as well as a few that are relevant to learning who the respondent is. We see an example of a single self-profiling question in Figure 1.5, this question dealing with the respondent's history with traffic tickets.

Figure 1.5: Example of a self-profiling question, this one dealing with the respondent's personal history of receiving a traffic ticket for driving.


Have you ever received a traffic ticket for your driving?
Never
Once
Two to three times
Four to eight times
More than eight times
>>
Powered by I-novation.com (IdeaMap® Technology)

Chapter 02
Building Models to Make Sense of the Data

Introduction

RDE creates test vignettes. It is the response to these vignettes which, when properly analyzed, gives us a sense of the mind of the respondent. We cannot look at the response to the vignettes, themselves, however, for these vignettes created through experimental design are merely vehicles through which we can better understand the performance of the elements. And to repeat the reason why we work with vignettes rather than the single elements – the vignettes give the respondents a context, a story to evaluate. It is easier to evaluate a story, a 'whole,' a gestalt, rather than the elements alone.

But what are we to do when the experimental design comprises 48 different vignettes, and when the permutation scheme associated with the experimental design creates a unique set of 48 different vignettes for each respondent? It no longer even makes sense to look at the average response to each of the 48 test vignettes, and try to discern a pattern, for there are no longer simply 48 vignettes. In fact, for 100 respondents, in the 'best' of situations, where the permutation scheme works perfectly, we may have close to 4800 different vignettes! So there is no consensus rating for a vignette.

Now that we have no consensus ratings about a common set of vignettes, we must look for a deeper analysis, one that deconstructs the vignettes into the contribution of the individual components, our elements. We are not interested in the contribution of the silos, per se, for the silos are merely for convenience, to ensure that elements carrying the same type of message, albeit with different content, never appear together.

Our analysis now moves from looking at the average rating, something we might do for ratings of individual elements, to looking at the contribution of the individual elements. We use the method of OLS, ordinary least-squares, regression. OLS enables us to deconstruct the rating assigned to a set of test vignettes into the part-worth contributions of the different elements. In this book we will call those part-worth contributions by the term 'impact.' Whether we talk about 'impact,' or 'part-worth,' or 'regression coefficient,' we are talking about the same thing; the contribution of the individual element to the total response.

Creating the analysis-ready data file (Table 2.1)

RDE was designed to be analyzed by the by-now very common computer packages called in general parlance 'off-the-shelf statistical software.' Indeed, it is a rare statistics program that does not feature at least one OLS regression program. With the power of today's computing, and with increasing use of SaaS (software as a service), virtually everyone with a computer who is connected to the Internet can avail himself of one or another OLS statistics packages. The package we use in this book is Systat®, but virtually any multiple regression program will do the same job.

We begin with the basic format, shown at the top of Table 2.1 in the form delivered by the RDE program, and in the format that is automatically created by a transformation program, ready for OLS regression.

The RDE program begins with the set of elements shown in the previous chapter, in Table 1.3. Along with the elements, RDE has its experimental design, which dictates the 48 vignettes, combinations of elements, to be seen by a respondent. The top of Table 2.1 shows us the first four vignettes for the first respondent. Columns 2-5 show us these four vignettes, in the form delivered by RDE.

1. Each vignette comprises 3-4 elements. Thus Vignettes 1,2 and 3 comprise four elements, with two silos absent from each. Vignette 4 shows us a vignette with three elements, and thus three silos missing. The word 'none' denotes the absence of the silo. Vignette 1 comprises elements A4, B6, C4, D3, respectively. Silos E and F are missing from Vignette 1.

2. Below the six rows of elements (one row for each silo) we see the ratings for the two questions. Recall that Question 1 instructed the respondent to select the punishment on an ordered, 9-point scale. Question 2 instructed the respondent to select the feeling/emotion that the respondent experienced right after reading the vignette.

3. The raw data themselves can be used very simply for tabulating percents of times the ratings were assigned (see Table 2.2). However, the tabulations do not tell us anything about the relation between the elements we test in the vignettes and the ratings. The tabulations just tell us the frequencies of appearance of each rating. One could do more with the data, such as tabulate the frequencies used by different subgroups of respondents (e.g., males versus females), or the frequencies with which two responses occur together such as the frequency of occurrence of each of the 35 pairs of ratings (7 alternative options from question 1 and 5 alternative options from question 2.

Table 2.1: The data from four vignettes as delivered by RDE

The data for four vignettes as delivered by the RDE program				
Element	Vig1	Vig2	Vig3	Vig4
A	4	None	4	None
B	6	1	None	5
C	4	3	5	6
D	3	None	3	None
E	None	4	4	None
F	None	3	None	2
Question1	4	3	3	5
Question2	1	1	1	1

4. In order to make the data amenable to OLS regression, and thus find links between elements and ratings, we have to make some transformations. Some of the transforms will

be obvious, such as the mapping of the elements from their letter/number equivalents (e.g., element A1) to their own new binary variable (variable A1). Other transforms won't be clear in and of themselves, but will become clear when we trace those transforms to the intellectual heritage of consumer research.

5. The first set of 36 rows shows elements A1 to F6. Most of the cells contain 0's, to represent the fact that in the vignette (column), the element does not appear. On the other hand, element A4 appears in Vignette 1. Looking down at the first vignette column, the column for vignette 1, we see a '1' in the row for A4. That '1' denotes that the element is present in vignette 1. All the other elements in Silo A are, by definition 0, because the experimental design does not permit more than one element from a silo in a vignette.

6. Looking at the different vignettes, and the rows, we sometimes see 0's for all six elements in a vignette. When we have such an occurrence, we deal with the case of the silo being absent entirely from a vignette. This case occurs quite often, because all vignettes comprised 3-4 elements, with only one element at most from a silo. There are quite a few silos that are missing from the different vignettes.

7. Looking at the response to question 1, we see that the respondent selected the answer '4.' For this particular study we labeled each of the responses, in an ordinal fashion, with '1' corresponding to the minimal degree of punishment, and with '7' corresponding to the maximal degree of punishment. We abbreviate response 4 as 4EarnCmp (compensation for loss of earning capacity).

8. We will transform the response to question 1 into four new variables, as follows:

a. Q1 will be assigned the value 4. We assume that we are dealing here with a 7-point category or Likert scale. In this first transform, we will treat the ratings as numbers, assuming that they represent an interval scale. Ultimately, we may find that the numbers do not, leading us to our second and third transformations. Our analysis will then focus on the relation between the presence/absence of the 36 elements, and the number of rating points on a 7-point scale that we may expect to achieve.

b. Rate1TP4. This transformation changes the rating, so that a rating on question 1 (degree of punishment) of 1-2-3 is converted to 0, to denote a mild punishment. A rating on question 1 of 4-5-6-7 is converted to a 100 to denote a more severe punishment. Our analysis will then focus on the relation between the presence/absence of the 36 elements, and the likelihood that the respondent will select a modest to severe punishment (scale points 4, 5, 6 or 7 on a 7-point scale).

c. Rate1TP2. This transformation is more stringent. This transformation changes the rating, so a rating on question 1 of 1-2-3-4-5 is converted to 0 to denote a mild punishment. A rating on question 1 of 6-7 is converted to a 100 to denote a more severe punishment. Our analysis will then focus on the relation between the presence/absence of the 36 elements, and the likelihood that the respondent will select a severe punishment (scale points 6 and 7 on a 7-point scale).

d. A separate dependent variable for each of the seven scale points. In this case, we treat each of the scale points as a qualitative choice, not related in any numerical way to the remaining six scale points. Our analysis will then focus on the relation between the presence/absence of the 36 elements, and the selection of the particular punishment.

9. When we work with the 7-point scale, we will primarily work with analysis 1 (using the original 7 point scale as a Likert scale or a category scale), or with analysis 3 (using the binary 0/100 scale to show us how strongly an element drives a 'strong punishment).

Table 2.2: The same data from Table 2.1 for four vignettes, now prepared for statistical analysis by OLS (ordinary least-squares) regression

The foregoing data as prepared for analysis by a transformation program				
Element	Vig1	Vig2	Vig3	Vig4
Binary expansion (= absent from vignette, 1=present in vignette)				
A1	0	0	0	0
A2	0	0	0	0
A3	0	0	0	0
A4	1	0	1	0
A5	0	0	0	0
A6	0	0	0	0
B1	0	1	0	0
B2	0	0	0	0
B3	0	0	0	0
B4	0	0	0	0
B5	0	0	0	1
B6	1	0	0	0
C1	0	0	0	0
C2	0	0	0	0
C3	0	1	0	0
C4	1	0	0	0
C5	0	0	1	0
C6	0	0	0	1
D1	0	0	0	0
D2	0	0	0	0
D3	1	0	1	0
D4	0	0	0	0
D5	0	0	0	0
D6	0	0	0	0
E1	0	0	0	0
E2	0	0	0	0
E3	0	0	0	0
E4	0	1	1	0

E5	0	0	0	0
E6	0	0	0	0
F1	0	0	0	0
F2	0	0	0	1
F3	0	1	0	0
F4	0	0	0	0
F5	0	0	0	0
F6	0	0	0	0
Element	Vig1	Vig2	Vig3	Vig4
Question1	4	3	3	6
Q1 Text	4EarnCmp	3MedComp	3MedComp	5PainCmp
Rate1Tp4 (1-3 →0; 4-7 →100)	100	0	0	100
Rate1Tp2 (1-5 →0, 6-7 →100)	0	0	0	100

Bringing in emotion (question 2) and dealing with emotion (Table 2.3)

The second rating question instructed the respondent to select one of five feelings/emotions to describe how the respondent felt after reading the specific vignette. The purist will argue that there are dozens, if not hundreds of feelings/emotions. However, it is important to recognize that the respondent is evaluating 48 different vignettes, and the real information is to be obtained from the pattern of responses to the elements, and not from an in-depth analysis of the specific feelings/emotions. That is, in RDE we concentrate on the stimulus, rather than on an agonizingly detailed analysis of one's responses. It is the stimuli which provide the learning; the responses are more general and typically more 'blunt.'

The above caveats having been offered, let's now look at the pattern of feelings/emotions selected by the first respondent. The respondent was instructed to select precisely one of the five feelings/emotions. Most respondents in an RDE situation accept that limit, and are able to work within it, trying their best to find one of the five answers that seems most appropriate.

When we analyze the data we want to ensure that we will be able to use our OLS regression program. To do so, we convert the single 'emotion scale' to five separate scales, each scale having only two points. These are '0' to denote that the feeling/emotion was not selected, and '100' to denote that the feeling/emotion was selected. This expansion of five responses to five new variables reminds us of the expansion of the seven alternative choices in question 1 to seven binary scales. We're doing the same thing here. And, although it seems that we have simply substituted on scale for another, question 2 as a set of verbal statements versus question 2 as a set of binary responses (0/100), in fact, that transformation is what makes all the difference. As we will see below, the transformation allows us to link together elements and feelings/emotions, using OLS regression as the workhorse tool.

Table 2.3: Feelings/Emotions selected by the respondent for the first four vignettes evaluated (question 2).

	Vig1	Vig2	Vig3	Vig4
Question2	1	3	1	1
Emotion	Outraged	Don't care	Outraged	Outraged
1=Outraged	100	0	100	100
2=Bothered	0	0	0	0
3=Don't care	0	100	0	0
4=Somewhat Satisfied	0	0	0	0
5=Content	0	0	0	0

Before OLS regression – a 'macro analysis' of response choices (Tables 2.4 and 2.5)

Let's assume for the moment that we have no OLS regression at our fingertips. How far can we get with the data?

Projecting ourselves back 60 or 70 years, before regression packages were popular among researchers and were cloistered in the rarified atmosphere of statisticians, probably we would have done some type of analysis of the distribution of responses. We know that the vignettes differ from one person to the next, ensured so by the experimental design, and the strategy of permutation. So our 48 vignettes evaluated by a respondent does not have fundamental interest by itself. The vignette is only a tool by which to embed elements.

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Although the vignettes themselves have little general meaning, the distribution of responses has some meaning. The distribution of responses gives us a sense, in general, about how serious the traffic accident seems to be, at least based upon the punishment selected, and gives us a sense of the types of emotions that are selected. The distributions of selections for both punishment and for emotion, appear in Table 2.4.

Table 2.4 tells us surface-level information about the responses. Specifics from Table 2.4 are:

1. Most of the vignettes received an appreciable reward. We see that from the percent of the ratings assigned to each answer in question 1, dealing with the monetary punishment. Only 4% of the vignettes received the lowest punishment (zero compensation), and only 5% received a small compensation. The remaining, more severe compensations, distributed almost equally across punishment levels 4,5,6 and 7, respectively

2. The typical response to the vignette was 'Bothered' followed by 'don't care.' It is not interesting to read these cases.

Table 2.4: One-way distributions of the ratings assigned to the vignettes by all of the respondents, to all of the vignettes.

Question #1		Percent of total		Question #2		Percent of total
1	Zero compensation from the Defendant	4		1	**Outraged**	15

	to the Plaintiff					
2	A small amount of compensation to Plaintiff for a part of Plaintiff's medical charges	5		2	**Bothered**	40
3	Compensation to Plaintiff equal to all of Plaintiff's medical charges plus some amount for a period of physical impairment	13		3	**Don't Care**	20
4	Compensation to Plaintiff for all medical charges, physical impairment and loss of earning capacity	18		4	**Somewhat satisfied**	16
5	Compensation to Plaintiff for all medical charges, physical impairment, and loss of earning capacity, plus some amount for physical pain and mental anguish	20		5	**Contented**	9
6	Compensation to Plaintiff for all medical charges, loss of earning capacity, and as much as the court permits for physical impairment, pain and mental anguish	20				
7	Compensation to Plaintiff for all medical charges, loss of earning capacity, as much as the court permits for physical impairment, pain and mental anguish, and then the same amount again for punitive damages to punish the Defendant and to deter others from engaging in the same conduct	19				

There is a little more information that we can garner by looking at a two-way table, a table which presents us with the proportion of times a pair of responses occur with each other. We can look at a two-way table in three different ways, recognizing that the cells of the table show us the frequency of times that the pair of responses occur (e.g., punishment 1 --Zero compensation from the Defendant to the Plaintiff, with emotion 1 – Outrage)

1. A table of absolute percentages, across all 7x5 or 35 combinations. We're not going to look at that table here because it provides too much information, but very little learning and insight.

2. A table of column percentages (Table 2.5), so that for each one of the five feelings/emotions (columns), how do the seven punishments distribute. We get a sense here of what punishments go with specific feelings/emotions. This particular table does teach us a great deal, as we will see below.

3. A table of row percentages (Table 2.6), so that for each one of the seven punishments (rows), how do the five feelings/emotions distribute. We get a sense of what

feelings/emotions go with each punishment. We will see that this table points out the fact that the predominant feelings/emotions are 'Bothered' and 'don't care.'

We begin our analysis with the column percents, showing us, for each feeling/emotion, what end up being the most prevalent punishments.

1. The key learning from Table 2.5 is that when the respondent feels outrage, this is associated with the strongest punishment *Compensation to Plaintiff for all medical charges, loss of earning capacity, as much as the court permits for physical impairment, pain and mental anguish, and then the same amount again for punitive damages to punish the Defendant and to deter others from engaging in the same conduct).*

2. A secondary learning is that the feeling/emotion of 'contented' is associated with the four most severe punishments.

3. Finally, the feelings/emotions do not associate at all with the weakest punishments.

Table 2.5: Two way table showing the association of punishments (rows) with each feeling/emotion. The columns are percents, and add up to 100%. The table teaches us which particular punishments are most strongly associated with each of the five feelings/emotions. The table should be read column by column.

	Outrage	Bothered	Don't Care	Somewhat Satisfied	Contented
Zero compensation from the Defendant to the Plaintiff	2	2	6	4	6
A small amount of compensation to Plaintiff for a part of Plaintiff's medical charges	1	4	10	6	6
Compensation to Plaintiff equal to all of Plaintiff's medical charges plus some amount for a period of physical impairment	3	11	22	18	13
Compensation to Plaintiff for all medical charges, physical impairment and loss of earning capacity	4	18	**29**	**22**	14
Compensation to Plaintiff for all medical charges, physical impairment, and loss of earning capacity, plus some amount for physical pain and mental anguish	9	**24**	19	**23**	**19**
Compensation to Plaintiff for all medical charges, loss of earning capacity, and as much as the court permits for physical impairment, pain and mental anguish	17	**27**	9	**18**	**21**
Compensation to Plaintiff for all medical charges, loss of earning capacity, as much as the court permits for physical impairment, pain and mental anguish, and then the same amount again for punitive damages to punish the Defendant and to deter others from engaging in the same conduct	**64**	13	4	7	**21**

Total	100	100	100	100	100

We can look at the same data, this time by rows, so that our focus is the association of the five different feelings/emotions with each of the seven punishments. The focus this time is on which feeling/emotion is most frequently selected. Table 2.6 shows us a two-way table with the numbers in the body being percents, and with the rows adding up to 100%.

1. We learn from Table 2.6 that when the punishment (question 1) is *'Zero compensation from the Defendant to the Plaintiff'*, the most frequent emotional response is 'Don't care.

2. On the other hand, when the punishment is '*Compensation to Plaintiff for all medical charges, loss of earning capacity, as much as the court permits for physical impairment, pain and mental anguish, and then the same amount again for punitive damages to punish*' the most frequent emotional response is outrage

Table 2.6: Two way table showing the association of columns (feelings/emotions) with rows (punishments). The rows are percents, and add up to 100%. The table teaches us which particular feelings/emotions are most strongly associated with each of the seven punishments. The table should be read row by row.

	Outrage	Bothered	Don't Care	Somewhat Satisfied	Contented	Total
Zero compensation from the Defendant to the Plaintiff	11	22	**32**	19	16	100
A small amount of compensation to Plaintiff for a part of Plaintiff's medical charges	3	31	**37**	18	10	100
Compensation to Plaintiff equal to all of Plaintiff's medical charges plus some amount for a period of physical impairment	3	**34**	**32**	22	9	100
Compensation to Plaintiff for all medical charges, physical impairment and loss of earning capacity	3	**39**	31	19	7	100
Compensation to Plaintiff for all medical charges, physical impairment, and loss of earning capacity, plus some amount for physical pain and mental anguish	7	**47**	19	18	9	100
Compensation to Plaintiff for all medical charges, loss of earning capacity, and as much as the court permits for physical impairment, pain and mental anguish	13	**53**	9	14	10	100
Compensation to Plaintiff for all medical charges, loss of earning capacity, as much as the court permits for physical impairment, pain and mental anguish, and then the same amount again for punitive damages to punish	**52**	27	4	6	10	100
Compensation to Plaintiff for all medical charges, loss of earning capacity, as much as the court permits for	15	**40**	20	16	9	100

physical impairment, pain and mental anguish, and then the same amount again for punitive damages to punish the Defendant and to deter others from engaging in the same conduct						

Linking elements and ratings- the heart of RDE (Table 2.7)

The essence of RDE is the linkage between the elements and the ratings. As stated above several times, RDE presents each respondent with a set of combinations, the vignettes, and obtains the ratings. The ratings comprise the two questions, the first being the seriousness of the punishment on a 7-point scale, the second being the selection of a feeling/emotion from a set of five alternatives.

We focus here on the analysis of the first question, seriousness. There are different ways to analyze the data. We will look at them, one at a time, to discuss each, but in the end we will use the 'top two' box score, for reasons that will become clear.

Here are at least six different analyses of these data, for question 1:

1. *Grand Likert Model*: Grand Model with all vignettes, treating the 7-point scale as a continuous Likert Scale. We know, of course, that the scale intervals are not precisely equal, and that we are dealing with a category scale, rather than a true interval scale. Yet, we can learn a lot from treating the data as a continuous interval scale.

2. *Top 2-Box*: Grand Model after transforming the 7-point scale (ratings of 1-5 transformed to 0; ratings 6-7 transformed to 100). This is a stringent model, focusing only on the very strong punishments. These very strong punishments are 6 and 7, respectively.

3. *Top 4-Box*: Grand Model after transforming the 7-point scale (ratings of 1-3 transformed to 0; ratings of 4-7 transformed to 100). This is a less stringent model, focusing on the strong punishments. The strong punishments are 3-7, respectively.

4. *Individual Response as a Variable*: In this fourth analysis we create a Grand Model with all the appropriate data included across respondents. We create seven new variables, one variable for each of the seven answers. We re-coded the data using a simple rule. For example, let us assume we are now working with the first new variable, *Zero compensation from the Defendant to the Plaintiff.* We make one pass through the data, the 14,928 rows. Let us call that new variable 'Punish1,' to link it to the first punishment. When the vignette was assigned punishment 1, we make Punish1 '100.' When the vignette was not assigned punishment 1, for whatever reason, our new variable Punish1 will be 0. We can do this transformation for each of our rows of data, and do the transformation seven times, creating one new variable for each punishment.

5. *Individual Likert Scale Models*, one for each respondent, treating the 7-point scale as a continuous Likert Scale. We know, of course, that the scale intervals are not precisely equal, and that we are dealing with a category scale, rather than a true interval scale.

6. *Individual Top 2 Box Models*, one for each respondent. We transform ratings 1-5 to 0, and ratings 6-7 to 100. We then add a small random number (< 10-5) to the ratings of each vignette, whether the vignette was transformed to a 0 or to 100. We then use OLS regression to estimate the values of the coefficients or impacts, one coefficient or impact for each of the 36 elements.

Looking at the Grand Model – treating the rating as a simple Likert Scale (Table 2.8)

We begin our analysis by looking at the entire set of vignettes, all 14928 vignettes, contributed by 311 respondents, each of whom evaluated the unique set of 48 vignettes. Recall that the experimental design prescribed the different combinations or vignettes, and that each individual evaluated the same 'structure' of combinations, but with the elements permuted. In simple terms, respondents evaluated all of the elements, each element appearing five times in 48 vignettes, with the specific combinations different across respondents.

For each vignette we know what 3-4 elements were present, and which 44-45 elements were absent. We coded the elements present by the number '1' and we coded the elements absent by the number '0'. A 'row of data' showing all 36 elements would thus appear as a string of 0's, punctuated by a few 1's scattered about.

At the end of the row of data is a number between 1 and 7, to denote the seriousness of the punishment. For statistical robustness in the computer analysis, we add a small random number to each of the 14928 ratings. That number is in the vicinity of 10-5, a number that is very small compared to the ratings, a number that will not make a noticeable difference in the results, but a number that can prevent the computer program from 'crashing' if it were to encounter all 14928 as the same rating. It virtually never happens here, but it does happen often when we work with the binary or Interest Model, at the level of the individual respondent, where the ratings of 1-5 are converted to 0, and ratings 6-7 are converted to 100. It is common for a respondent to rate all of the vignettes 1-5. The respondent would clearly differentiate among the vignettes, based on the 7-point rating, but would not differentiate if the transform is put in place. All the ratings lying between 1 and 5 for that respondent, i.e., all his ratings, would be transformed to 0. The computer program would then crash. The small random number prevents that crash.

Fortunately for us, statisticians created a workhorse tool known as OLS or ordinary least-squares regression. Regression is a well known procedure, almost affectionately known as 'curve' fitting. With regression, one begins with at one independent variable, and on dependent variable. The objective of regression is to fit a line of form $Y = mX + b$ to the data, where X is the independent variable, and Y is the dependent variable. We have to have several observations or cases, in our parlance 'vignettes' in order to estimate the slope x and the intercept b.

With this in mind, let's look at how OLS regression would handle our data.

Looking at the general model

1. We begin with the definition of the dependent variable and the independent variable. For our data, looking at the grand model, the dependent variable is the 9-point rating showing us the severity of punishment. This dependent variable is shown in Table 2.8 as Dep Var: Rate1. Rate1 = question 1

2. Instead of just one independent variable, X, we actually have 36 independent variables, namely our 36 elements.

3. We look at all 14928 vignettes to make our estimation. This value is 'N' in Table 2.8

4. So, we write our equation as: Severity of Punishment = $k0 + k_1(A1) + k_2(A2) \ldots k_{36}(F6)$

5. The OLS program returns first with an estimate of how well the regression equation fits the data. The key number is the 'squared multiple R' which is 0.12. The value R^2. That value is the proportion of the variability in the ratings that can be attributed to the 36 elements acting together. For 14,000+ cases (N=14928) the R2 of 0.12 means that 12% of the variation can be traced back to knowing which elements are present in the vignette. Furthermore, this logic tells us that 88% of the variation in the ratings of punishment cannot be traced to the elements. With so many vignettes, 14,000+, the model is simply superb.

6. Moving further downward, to the standard error of estimate, we see that we can estimate the total rating of punishment to within +/- 1.55. If we were to do this study again and again, and obtain estimates of the coefficients and the additive constant, we would be able to estimate the total punishment to within +/- 1.55; not very accurate, but still remarkably good considering the massive person to person variation

7. Right below the standard error of estimate we see a table called the analysis of variance or ANOVA. The ANOVA table partitions the variation in the data into two sources, the variation due to the regression and the residual or error variations. These two sources of variation are shown in the column called Sum Sq (sum of squares). We use these two sources of variation, separately computed (one from the regression model, and then what's left) to create separate estimations of the variability in our study.

a. We make these separate estimations by dividing the variation from the regression (4843.37) by the number of sources making up that variation (df or degrees of freedom = 36 source). Our first estimate if the variation, from the regression model is 134.29 (4834.37/36 = 134.29).

b. We make a second estimate of the variation, this time from the residual or random variability. The sum of squares is 34592.9, with the number of sources being 14891. This time the mean square, our second estimate of variability, is much lower; 2.4.

c. The ratio of the two mean squares, the two separate estimates of variation, and their degrees of freedom, can be used to decide whether the variation due to the regression is

much larger than the variation due to error/residual or much smaller. When the variation due to regression is much larger, we conclude that the regression model, our model for punishment versus the elements, really describes the data, and doesn't just 'fit noise'

d. One last comment on fitting noise is important. Just because we can create a regression model doesn't mean that we really capture relations between variables, between the independent variables and the dependent variables. We can apply OLS regression to random data, and come up with statistics, coefficients, and so forth, but statistics that are really meaningless.

Looking more closely at the individual elements and the additive constant

The heart of the RDE analysis using OLS regression is, of course, the estimated values, and then secondarily whether these values can be considered to be really 'different' from 0, i.e., whether the elements as portrayed in the vignette are really driving a punishment or not.

The body of Table 2.8 contains the numerical values for the elements. Table 2.8 shows us four data columns:

1. Coefficient (impact). This is the estimate of the contribution of the element to the 9-point rating. We have this estimate for the additive constant (also known in statistical parlance as the intercept). We interpret the coefficient as the number of rating points on a 7-point scale that would be contributed by either the constant (estimated rating in the absence of elements), or by the element alone.
2. Std Error (standard error of the regression coefficient). OLS regression estimates the variability of that coefficient or impact value. The Std Error is approximately 0.05, and is the same for all regression coefficients because the experimental design ensures that each element appears five times in different combinations for each respondent, and that the elements are statistically independent. From a practical point of view, the Std Error of 0.05 means that we should be looking at elements which score +/- 2*Std Error, or are either great than 0.10 or less than -0.10. To be conservative, we should be even more stringent, and look only at elements which score +/- 3*Std Error. Table 2.9 shows us the elements ranked by the coefficient, or impact, revealing that a great many elements are significant. On the other hand, there are a fair number of elements which are not significant, such as elements which tell us about the respondent.
3. The third column shows us the t statistic, which is defined as the ratio (Coefficient/Std Error). Knowing the T statistic allows statisticians to estimate the probability that the coefficient comes from a 'distribution' whose 'real mean' is other than 0. That probability is shown in the fourth column, P(2 Tail). Most statisticians settle on a T statistic around 2.0. We will be more stringent, and look for T statistics around 3.0, values for T which very rarely occur when the 'true' coefficient or impact is 0 (i.e., no contribution of the element to the severity of punishment). The bottom line here is we are going to be conservative, and look for Coefficients (Impacts) that suggest a strong likelihood that the impact value is really 0.

Table 2.8: Key statistics from OLS regression for the Grand Model. The model was constructed by using all 36 elements as independent variables, and all vignettes as

'cases.' The dependent variable was the binary rating 0/100, from the transform (1-5 →0; 6-7 → 100)]

Dep Var: RATE1 N: 14928 Multiple R: 0.35 Squared multiple R: 0.12					
Standard error of estimate: 1.55					
	Analysis of Variance				
	Source	**Sum Sq**	**df**	**Mean-Square**	**F-ratio**
	Regression	4834.37	36	134.29	56.02
	Residual	35692.9	14891	2.4	P=0
	Effect	Coefficient (Impact)	Std Error	T	P(2 Tail)
	Additive constant	4.16	0.11	37.34	0.00
	Silo & Element				
	Silo A The plaintiff				
A1	The Plaintiff is a 21 year old female in her senior year of college, studying to be a teacher	0.06	0.05	1.23	0.22
A2	The Plaintiff, although originally from Mexico, has been in the United States for most of the last 23 years doing carpentry and painting work	0.09	0.05	1.69	0.09
A3	The Plaintiff is a homemaker and mother of three children aged two through eleven	0.09	0.05	1.79	0.07
A4	The Plaintiff, age 16, had just obtained his driver's license two weeks prior to the collision	-0.07	0.05	-1.42	0.16
A5	The Plaintiff is 34 years old, unmarried and unemployed, but had been considering a return to school to obtain a high school GED	0.00	0.05	-0.04	0.97
A6	The Plaintiff owns and operates a small business with his wife, has one college-aged child, two grown children, and four grandchildren	0.11	0.05	2.03	0.04
	Silo B The defendant				
B1	The Defendant is a white male, age 30, who was traveling on business at the time of the collision	-0.02	0.05	-0.36	0.72
B2	The Defendant is a 43 year old Hispanic male who was driving a work truck when the collision occurred	0.04	0.05	0.72	0.47

B3	The Defendant is a black male, age 21, who was driving his personal car at the time of the collision	0.00	0.05	0.05	0.96
B4	The Defendant is a young white female who was driving a borrowed car with friends during a break from school	0.04	0.05	0.75	0.45
B5	The Defendant is a publishing company senior executive driving a BMW 760Li Sedan	0.09	0.05	1.71	0.09
B6	The Defendant, age 55, is the minister of a large church and well known from television broadcasts	0.13	0.05	2.50	0.01
	Silo C What happened				
C1	The Defendant apparently crossed the center line of the highway into oncoming traffic while texting on a cell phone	0.70	0.05	13.72	0.00
C2	Witnesses say the Defendant ran a red light while traveling at least 20 miles per hour above the speed limit	0.52	0.05	10.19	0.00
C3	Immediately following the collision, in which the Defendant slammed into the rear of the Plaintiff's vehicle, the Defendant's blood alcohol level was double the legal limit	0.95	0.05	18.30	0.00
C4	The Defendant appeared to swerve into the side of the Plaintiff's car while attempting a highway pass in the face of oncoming traffic	0.29	0.05	5.60	0.00
C5	The collision occurred when the Defendant suddenly tried to cut across two lanes of traffic in the attempt to exit the freeway	0.30	0.05	5.83	0.00
C6	The Defendant was attempting to make a left turn and failed to yield to the oncoming traffic	0.15	0.05	3.01	0.00
	Silo D Defendant prior history and statement				
D1	The Defendant had already been cited for this kind of conduct on two prior occasions in the last year and a half	0.45	0.05	8.83	0.00
D2	Witnesses at the scene heard the Defendant saying the Plaintiff "deserved it" for being "a stupid driver"	0.20	0.05	3.87	0.00

D3	The Defendant acknowledged full responsibility at the scene of the collision and expressed remorse for what had happened	0.04	0.05	0.78	0.44
D4	The Defendant has admitted to being in a hurry before the collision because "I knew people were waiting for me"	0.18	0.05	3.37	0.00
D5	The Defendant, who had just learned of a close friend's death, admits now to being too emotionally wrecked to be driving at the time of the collision	0.01	0.05	0.19	0.85
D6	The Defendant admits to making bad choices as a driver but says those choices weren't what caused the collision	-0.01	0.05	-0.27	0.79
	Silo E Other facts				
E1	One witness at the scene says that the collision possibly could have been avoided if the Plaintiff had been paying more attention to the traffic	-0.34	0.05	-6.83	0.00
E2	The Defendant went to the hospital the day after the collision to check on the Plaintiff, and has expressed the desire now to do whatever is right for the Plaintiff	0.02	0.05	0.46	0.65
E3	This is the third lawsuit of this type that the Plaintiff has filed	-0.29	0.05	-5.88	0.00
E4	In the moments after the collision, while being extracted from the car, the Plaintiff kept repeating, "I'm sorry, I'm so sorry, it was an accident"	-0.12	0.05	-2.39	0.02
E5	At the time of the collision the Defendant was facing directly west into a setting sun, which may have impaired the Defendant's vision	-0.06	0.05	-1.15	0.25
E6	Evidence indicates that the Plaintiff may have been driving in excess of the speed limit	-0.48	0.05	-9.61	0.00
	Silo F - Current condition of the plaintiff				
F1	The Plaintiff was taken to surgery twice and was hospitalized for five days following the collision, but is expected to make a full recovery	0.20	0.05	3.94	0.00

F2	The Plaintiff's left leg was amputated above the knee as a result of the collision	0.99	0.05	19.02	0.00
F3	The Plaintiff has been diagnosed with mild traumatic brain injury as a result of the collision, and is still struggling with short-term memory deficits and depression	0.62	0.05	11.94	0.00
F4	The Plaintiff is now a quadriplegic permanently paralyzed from the neck down as a result of the collision	1.19	0.05	22.94	0.00
F5	The Plaintiff was released from the hospital after two days of observation, but continues to be treated by a chiropractor for back and neck pain	-0.02	0.05	-0.33	0.74
F6	The Plaintiff has fully recovered physically but continues to suffer from post-traumatic stress disorder after being pulled from the car just moments before it burst into flames	0.30	0.05	5.66	0.00

The bottom line for the Grand Model of punishment intensity – strong performing (Table 2.9)

The foregoing preparations for the Grand Model (and indeed all models discussed in this book) are simply preparations to discover the major patterns, specifically what elements 'drive' the punishment. We do that for the Grand Model of punishment by rank ordering the coefficients. Keep in mind that the coefficients that we present here show us the number of rating points on the 7-point punishment scale. Later on in this book we will refer to this model as the Persuasion Model.

We have spent a lot of time with the Persuasion Model because this is the simplest model to analyze. We make no transformations on the results, and we analyze the results from the perspective of the total panel, rather than on the basis of one respondent at a time. That is, this particular analysis is 'top down,' (focus on the total data set), rather than 'bottom up,' (focus on individual respondents who combine to create the full panel of respondents.

Let us look at the strongest performing elements in Table 2.9. Note that we have ranked ordered the 36 elements by the magnitude of their coefficient, rather than according to the original notation of silo (A-F), and element within the silo (1-6). We don't lose anything by ranking according to the coefficient or impact, since the stratagem of silos and elements was originally adopted as a bookkeeping device, to ensure that potentially conflicting elements of the same type but with different information would never appear together.

Our data suggest a high additive constant (4.16) quite a range of coefficient or impact values (high of 1.19 to a low of -0.48). These are just numbers. Let's now interpret the results.

1. The additive constant is 4.16. The additive constant (also called the intercept by statisticians) tells us the expected rating of punishment on the 7-point scale, in the absence of any elements. We can't ask the respondent to estimate the degree of punishment in the absence of elements, but our OLS regression can 'tease' out that value of 4.16. We interpret this 4.16 to mean that given the facts of the case, without any other information, the likely punishment would be: *Compensation to Plaintiff for all medical charges, physical impairment and loss of earning capacity*

2. There are three very strong performing elements, two talking about very severe injuries, and one talking about the clear guilt of the defendant, who was demonstrated to have been drinking. These three strong performing elements generate about 0.9 – 1.2 units increase in punishment.

F4	*The Plaintiff is now a quadriplegic permanently paralyzed from the neck down as a result of the collision*	*1.19*
F2	*The Plaintiff's left leg was amputated above the knee as a result of the collision*	*0.99*
C3	*Immediately following the collision, in which the Defendant slammed into the rear of the Plaintiff's vehicle, the Defendant's blood alcohol level was double the legal limit*	*0.95*

3. The elements talking about who the defendant is, or who the plaintiff is, have little effect. Were the elements to be strongly positive or strongly negative (beyond +/- 0.15 or so), then we would have evidence of prejudice on the basis of who the person is, whether prejudiced against the person or prejudiced for the person.
4. What the plaintiff did or was alleged to have done may have a mitigating effect on the punishment, reducing the level of punishment

E3	*This is the third lawsuit of this type that the Plaintiff has filed*	*-0.29*
E1	*One witness at the scene says that the collision possibly could have been avoided if the Plaintiff had been paying more attention to the traffic*	*-0.34*
E6	*Evidence indicates that the Plaintiff may have been driving in excess of the speed limit*	*-0.48*

5. It is important to keep in mind that the units of measurement here are the rating scale points, with a scale that is decided upon by the researcher. We cannot use these scale values as absolutes, but rather ought to consider them as 'directional,' as showing what the jurors might be thinking if one could assign scale values to punishment.

6. Finally, it is worth reiterating that it is virtually impossible to 'game' this system, i.e., to assign numbers in accordance with a conscious plan. Too much is going on in each vignette, and there are simply too many vignettes (48, each with an average of 3.75 elements).

Respondents do not 'care' enough about being politically correct in these RDE studies. They simply want to finish the task, and in fact for the most part the respondent pays scant attention to the details. It is the first impression which matters, a reality that might disturb those who want the respondents to carefully consider each element in each vignette, but a reality which operates in the everyday world. People graze for information, except in situations wherein they are deeply involved, such as illness or a major purchase.

Table 2.9: Performance of the elements from the Grand Model. The elements are sorted in descending order of severity as estimated by the model. The model was constructed by using all 36 elements as independent variables, and all vignettes as 'cases.' The dependent variable was the rating of punishment on the 7-point scale (question 1)

	Additive constant (expected level of punishment given the basic facts in the case, but without any information that would be provided by elements	4.16
F4	**The Plaintiff is now a quadriplegic permanently paralyzed from the neck down as a result of the collision**	**1.19**
F2	**The Plaintiff's left leg was amputated above the knee as a result of the collision**	**0.99**
C3	**Immediately following the collision, in which the Defendant slammed into the rear of the Plaintiff's vehicle, the Defendant's blood alcohol level was double the legal limit**	**0.95**
C1	**The Defendant apparently crossed the center line of the highway into oncoming traffic while texting on a cell phone**	**0.70**
F3	**The Plaintiff has been diagnosed with mild traumatic brain injury as a result of the collision, and is still struggling with short-term memory deficits and depression**	**0.62**
C2	**Witnesses say the Defendant ran a red light while traveling at least 20 miles per hour above the speed limit**	**0.52**
D1	**The Defendant had already been cited for this kind of conduct on two prior occasions in the last year and a half**	**0.45**
C5	**The collision occurred when the Defendant suddenly tried to cut across two lanes of traffic in the attempt to exit the freeway**	**0.30**
F6	**The Plaintiff has fully recovered physically but continues to suffer from post-traumatic stress disorder after being pulled from the car just moments before it burst into flames**	**0.30**
C4	**The Defendant appeared to swerve into the side of the Plaintiff's car while attempting a highway pass in the face of oncoming traffic**	**0.29**
D2	**Witnesses at the scene heard the Defendant saying the Plaintiff "deserved it" for being "a stupid driver"**	**0.20**
F1	**The Plaintiff was taken to surgery twice and was hospitalized for five days following the collision, but is expected to make a full recovery**	**0.20**
D4	**The Defendant has admitted to being in a hurry before the collision because "I knew people were waiting for me"**	**0.18**

C6	The Defendant was attempting to make a left turn and failed to yield to the oncoming traffic	0.15
B6	The Defendant, age 55, is the minister of a large church and well known from television broadcasts	0.13
A6	The Plaintiff owns and operates a small business with his wife, has one college-aged child, two grown children, and four grandchildren	0.11
A2	The Plaintiff, although originally from Mexico, has been in the United States for most of the last 23 years doing carpentry and painting work	0.09
A3	The Plaintiff is a homemaker and mother of three children aged two through eleven	0.09
B5	The Defendant is a publishing company senior executive driving a BMW 760Li Sedan	0.09
A1	The Plaintiff is a 21 year old female in her senior year of college, studying to be a teacher	0.06
B2	The Defendant is a 43 year old Hispanic male who was driving a work truck when the collision occurred	0.04
B4	The Defendant is a young white female who was driving a borrowed car with friends during a break from school	0.04
D3	The Defendant acknowledged full responsibility at the scene of the collision and expressed remorse for what had happened	0.04
E2	The Defendant went to the hospital the day after the collision to check on the Plaintiff, and has expressed the desire now to do whatever is right for the Plaintiff	0.02
D5	The Defendant, who had just learned of a close friend's death, admits now to being too emotionally wrecked to be driving at the time of the collision	0.01
A5	The Plaintiff is 34 years old, unmarried and unemployed, but had been considering a return to school to obtain a high school GED	0.00
B3	The Defendant is a black male, age 21, who was driving his personal car at the time of the collision	0.00
D6	The Defendant admits to making bad choices as a driver but says those choices weren't what caused the collision	-0.01
B1	The Defendant is a white male, age 30, who was traveling on business at the time of the collision	-0.02
F5	The Plaintiff was released from the hospital after two days of observation, but continues to be treated by a chiropractor for back and neck pain	-0.02
E5	At the time of the collision the Defendant was facing directly west into a setting sun, which may have impaired the Defendant's vision	-0.06
A4	The Plaintiff, age 16, had just obtained his driver's license two weeks prior to the collision	-0.07
E4	In the moments after the collision, while being extracted from the car, the Plaintiff kept repeating, "I'm sorry, I'm so sorry, it was an accident"	-0.12
E3	**This is the third lawsuit of this type that the Plaintiff has filed**	**-0.29**

E1	**One witness at the scene says that the collision possibly could have been avoided if the Plaintiff had been paying more attention to the traffic**	**-0.34**
E6	**Evidence indicates that the Plaintiff may have been driving in excess of the speed limit**	**-0.48**

From degree of punishment to more versus less severe – the 'Interest Model' (Table 2.10)

Up to this point we have focused on a simple model – the so called 'Persuasion' Model, where the dependent variable is the actual rating of punishment severity, and the independent variables are the 36 elements. In the Persuasion Model we focus on intensity of feeling, this time intensity of punishment perceived to be appropriate for the particular vignette.

What happens when we change our focus a bit, and instead of looking at the degree of punishment, we divide the punishment into more severe versus less severe, two classes. We divide the seven responses on the punishment scale into two categories; mild punishment which correspond to ratings 1-5, and severe punishment which correspond to ratings 6-7. The focus of our analysis now becomes the ability of an element to drive membership into the 'severe' punishment class.

We change our focus from intensity to membership based upon the intellectual heritage of RDE. RDE, rule developing experimentation, began as an offshoot of 'conjoint analysis,' and experimental design. In consumer research, from which RDE traces most of its heritage, the research focus is on membership in a group, such as those who will buy the product. The intensity of feeling about buying the product is of less interest than simply whether a person falls into the group of prospective buyers. Similar 'membership-oriented' thinking applies to sociology, and to political and social polling, also intellectual wellsprings of RDE thinking.

We could have chosen to divide the seven points into the mild punishment (1-4), and the severe punishment (5-7). The division of a continuum or a range into two regions is a matter of personal decision. For this analysis (Section 2.10) we focus on the Grand Model, and the division into the two regions defined by 1-5 → 0, and 6-7 → 100.

Let us look at the results when we keep the entire analytic structure the same, but simply change our 7-point scale to a 2-point binary scale, as just defined above. We repeat Table 2.9, this time however, looking at what happens with a different dependent variable. The columns are the same.

1. We have reduced the amount of information in our data because we have reduced the number of response categories from seven to two. We call this model the Interest Model, using the top 2 box. The language 'top 2 box' comes from the parlance of consumer

research, which works with the same type of 7-point scales, and converts them to two values, corresponding to 1-5, and to 6-7, respectively.

2. Our goodness of fit is almost the same, 0.32 instead of 0.32.

3. Our standard error changes, of course, because our response is now 0/100 rather than 1-7. So we don't look at the standard error because our transformation creates an 'artifact'. We don't really see what's happening

4. We learn a lot from the F ratio, which is a measure of 'signal to noise,' or variation accounted for by the regression (mean square for the regression) versus variation accounted for by random variable (mean square for residual). The F ratio is 50.64. When we worked with the actual 7-point scale, the F ratio was 56.02. We conclude that transforming the responses into a binary scale with our criteria here (1-5 → -0, 6-7 → 100) makes little difference in terms of the signal to noise ratio.

5. Now we look at the impact values, i.e., the coefficients. The coefficients, shown without decimals, have a somewhat different interpretation, when we work with this binary transform, and when we focus on membership, rather than intensity of feeling. We don't need decimals because the coefficients are very large, relative to the decimal numbers, and simply give a false impression of precision. We are really interested in the whole numbers; these are our first significant digits.

6. The additive constant, 25, shows us the conditional probability (0.25) of a person assigning a severe punishment to a vignette, given only the basic information, i.e., in the absence of elements. Or, another way to interpret the additive concept, the intercept in regression, is the percent of respondents who would assign a respondent a severe punishment (6, 7) in the absence of information from the elements.

7. The elements show the incremental percent of respondents who would assign the respondent a severe punishment if the element were to be included into the vignette. The numbers are higher, due primarily to the nature of the scale (0/100 rather than 1-7, resulting in higher coefficients).

8. We can get a sense of which values are important by look at the t values. We know from statistics that we are likely to have a so-called 'significant' (i.e., non zero) coefficient or impact value when the t value is beyond +/- 2, and a much more likely significant effect when the t value is beyond +/- 3. We are looking at coefficients or impact values greater than 5 (i.e., adds 5 percent more respondents to the severe punishment category, or takes away more than 5 percent from the more severe punishment category

Table 2.10 – The Interest Model (top 2 box), for punishment. Response categories 1-5 have been converted to 0. Response categories 60-7 have been converted to 100. The Interest Model is based upon all of the vignettes.

Seriousness, 1-5 -->0, 6-7 --> 100 (Interest Model, top 2 box)

N: 13683 Multiple R: 0.32 Squared multiple R: 0.11					
Standard error of estimate: 46.13					
Analysis of Variance					
Source	Sum-of-Squares	Df	Mean-Square	F-ratio	
Regression	3876525	36	107681	50.64	
Residual	3.2E+07	14891	2126.51	P=0	
	Effect	Coefficient (Impact)	Std Error	T	P(2 Tail)
	Additive constant	25	3.47	7.09	0.00
	Silo A The plaintiff				
A1	The Plaintiff is a 21 year old female in her senior year of college, studying to be a teacher	1	1.62	0.54	0.59
A2	The Plaintiff, although originally from Mexico, has been in the United States for most of the last 23 years doing carpentry and painting work	1	1.63	0.30	0.76
A3	The Plaintiff is a homemaker and mother of three children aged two through eleven	2	1.63	1.34	0.18
A4	The Plaintiff, age 16, had just obtained his driver's license two weeks prior to the collision	-1	1.61	-0.72	0.47
A5	The Plaintiff is 34 years old, unmarried and unemployed, but had been considering a return to school to obtain a high school GED	0	1.62	-0.26	0.80
A6	The Plaintiff owns and operates a small business with his wife, has one college-aged child, two grown children, and four grandchildren	0	1.61	0.02	0.99
	Silo B The defendant				
B1	The Defendant is a white male, age 30, who was traveling on business at the time of the collision	0	1.62	-0.26	0.80
B2	The Defendant is a 43 year old Hispanic male who was driving a work truck when the collision occurred	0	1.62	-0.26	0.80
B3	The Defendant is a black male, age 21, who was driving his personal car at the time of the collision	0	1.61	-0.20	0.84
B4	The Defendant is a young white	0	1.62	0.14	0.89

	female who was driving a borrowed car with friends during a break from school				
B5	The Defendant is a publishing company senior executive driving a BMW 760Li Sedan	1	1.62	0.48	0.63
B6	The Defendant, age 55, is the minister of a large church and well known from television broadcasts	2	1.62	1.53	0.13
	Silo C What happened				
C1	The Defendant apparently crossed the center line of the highway into oncoming traffic while texting on a cell phone	17	1.59	10.73	0.00
C2	Witnesses say the Defendant ran a red light while traveling at least 20 miles per hour above the speed limit	11	1.60	6.94	0.00
C3	Immediately following the collision, in which the Defendant slammed into the rear of the Plaintiff's vehicle, the Defendant's blood alcohol level was double the legal limit	24	1.62	14.96	0.00
C4	The Defendant appeared to swerve into the side of the Plaintiff's car while attempting a highway pass in the face of oncoming traffic	6	1.59	3.99	0.00
C5	The collision occurred when the Defendant suddenly tried to cut across two lanes of traffic in the attempt to exit the freeway	6	1.59	3.80	0.00
C6	The Defendant was attempting to make a left turn and failed to yield to the oncoming traffic	3	1.59	1.88	0.06
	Silo D Defendant prior history and statement				
D1	The Defendant had already been cited for this kind of conduct on two prior occasions in the last year and a half	11	1.60	6.85	0.00
D2	Witnesses at the scene heard the Defendant saying the Plaintiff "deserved it" for being "a stupid driver"	5	1.59	3.16	0.00

D3	The Defendant acknowledged full responsibility at the scene of the collision and expressed remorse for what had happened	-2	1.61	-1.10	0.27
D4	The Defendant has admitted to being in a hurry before the collision because "I knew people were waiting for me"	4	1.62	2.22	0.03
D5	The Defendant, who had just learned of a close friend's death, admits now to being too emotionally wrecked to be driving at the time of the collision	-1	1.60	-0.50	0.62
D6	The Defendant admits to making bad choices as a driver but says those choices weren't what caused the collision	-1	1.62	-0.48	0.63
	Silo E Other facts				
E1	One witness at the scene says that the collision possibly could have been avoided if the Plaintiff had been paying more attention to the traffic	-9	1.57	-5.75	0.00
E2	The Defendant went to the hospital the day after the collision to check on the Plaintiff, and has expressed the desire now to do whatever is right for the Plaintiff	-2	1.58	-1.10	0.27
E3	This is the third lawsuit of this type that the Plaintiff has filed	-7	1.56	-4.21	0.00
E4	In the moments after the collision, while being extracted from the car, the Plaintiff kept repeating, "I'm sorry, I'm so sorry, it was an accident"	-5	1.58	-3.23	0.00
E5	At the time of the collision the Defendant was facing directly west into a setting sun, which may have impaired the Defendant's vision	-3	1.57	-2.07	0.04
E6	Evidence indicates that the Plaintiff may have been driving in excess of the speed limit	-11	1.57	-6.98	0.00
	Silo F - Current condition of the plaintiff				
F1	The Plaintiff was taken to surgery	2	1.62	1.12	0.26

	twice and was hospitalized for five days following the collision, but is expected to make a full recovery				
F2	The Plaintiff's left leg was amputated above the knee as a result of the collision	27	1.62	16.85	0.00
F3	The Plaintiff has been diagnosed with mild traumatic brain injury as a result of the collision, and is still struggling with short-term memory deficits and depression	16	1.62	9.69	0.00
F4	The Plaintiff is now a quadriplegic permanently paralyzed from the neck down as a result of the collision	35	1.62	21.58	0.00
F5	The Plaintiff was released from the hospital after two days of observation, but continues to be treated by a chiropractor for back and neck pain	-2	1.61	-1.44	0.15
F6	The Plaintiff has fully recovered physically but continues to suffer from post-traumatic stress disorder after being pulled from the car just moments before it burst into flames	6	1.63	3.70	0.00

Looking at strong performing elements from the Interest Model for Punishment (ratings 1-5 transformed to mild punishment 0; ratings 6-7 transformed to severe punishment, 100. (Table 2.11)

In the previous analysis, we found it easier to understand our results when we rank ordered the elements based on the coefficient or impact value. Rank ordering the elements from severe to mild punishment revealed to us the nature of the severe punishments. They were associated with severe damage to the plaintiff or severe malfeasance on the part of the defendant. Let's now look at the same rank order analysis, this time using the coefficients or impact values that emerged after the binary transformation. We see the results in Table 2.11. We have bolded and shaded those elements with T values beyond the limits of +3 for the top, and -3 for the bottom. Elements with T values above +3 are those that are strong in *their ability to elicit punishment reactions from people.*

Table 2.11 shows us a rich set of elements which drive punishment, based on the strong performing elements. However, and as we will see not particularly surprising, the strongest elements emerging in the previous analysis, using the actual ratings on the 7-point punishment scale are the same as the strongest elements here. We should not be surprised. All we have done here is reduced some of the granular information from seven

points to two points. The elements are not exactly the same, however, suggesting that our radical transformation from a 7-point scale to a two-point binary scale does have an effect on the results.

We interpret our results a bit differently now.

1. The additive constant is 25, meaning that in the absence of elements, 25% of the respondents who read the vignettes are likely to opt for strong punishment. That is, one in four respondents is likely to 'throw the book' at the defendant. Later on in this chapter we will look at the percentages of respondents from different subgroups, to see whether this additive constant, 25 or 25%, applies to different populations. We may well discover a group which shows a much lower propensity to 'throw the book at the defendant,' and another group which shows a much higher propensity to 'throw the book at the defendant.'

2. For our strongest element (F4: The Plaintiff is now a quadriplegic permanently paralyzed from the neck down as a result of the collision) is the strongest element in the study, with an impact of 35, meaning that when this element is inserted into the vignette, an additional 35% of the respondents assign a punishment rating of 6 or 7 on the 7-point scale. A single vignette comprising element F4 would thus generate 25+35 or 60, i.e., 60% of the respondents rating the vignette 6 or 7.

3. There are a fair number of irrelevant elements, elements with impact values around 0. These elements just don't have any effect.

4. Some elements actually decrease the punishment. These elements mitigate the strength of the argument, and the feeling of the respondents as judges: The elements score -7 and -9, suggesting that they actually reduce the punishment, perhaps explaining some negative behavior on the part of the plaintiff, or some facts pointing to the difficulty of avoiding the accident:

This is the third lawsuit of this type that the Plaintiff has filed
One witness at the scene says that the collision possibly could have been avoided if the Plaintiff had been paying more attention to the traffic

Table 2.11: Performance of the elements from the Grand Model. The elements are sorted in descending order of severity as estimated by the model. The model was constructed by using all 36 elements as independent variables, and all vignettes as 'cases.' The dependent variable was the rating of punishment on the 7-point scale (question 1), with the rating transformed. Punishment ratings 1-6 were transformed to 0; punishment ratings 6-7 were transformed to 100. Elements with impact values beyond _+/- 4 are shown in bold, and cells shaded.

	Effect	Coefficient (Impact)	T
	Additive constant	25	7.09

F4	**The Plaintiff is now a quadriplegic permanently paralyzed from the neck down as a result of the collision**	**35**	**21.58**
F2	**The Plaintiff's left leg was amputated above the knee as a result of the collision**	**27**	**16.85**
C3	**Immediately following the collision, in which the Defendant slammed into the rear of the Plaintiff's vehicle, the Defendant's blood alcohol level was double the legal limit**	**24**	**14.96**
C1	**The Defendant apparently crossed the center line of the highway into oncoming traffic while texting on a cell phone**	**17**	**10.73**
F3	**The Plaintiff has been diagnosed with mild traumatic brain injury as a result of the collision, and is still struggling with short-term memory deficits and depression**	**16**	**9.69**
C2	**Witnesses say the Defendant ran a red light while traveling at least 20 miles per hour above the speed limit**	**11**	**6.94**
D1	**The Defendant had already been cited for this kind of conduct on two prior occasions in the last year and a half**	**11**	**6.85**
C4	The Defendant appeared to swerve into the side of the Plaintiff's car while attempting a highway pass in the face of oncoming traffic	6	3.99
C5	The collision occurred when the Defendant suddenly tried to cut across two lanes of traffic in the attempt to exit the freeway	6	3.80
F6	The Plaintiff has fully recovered physically but continues to suffer from post-traumatic stress disorder after being pulled from the car just moments before it burst into flames	6	3.70
D2	Witnesses at the scene heard the Defendant saying the Plaintiff "deserved it" for being "a stupid driver"	5	3.16
D4	The Defendant has admitted to being in a hurry before the collision because "I knew people were waiting for me"	4	2.22
C6	The Defendant was attempting to make a left turn and failed to yield to the oncoming traffic	3	1.88
B6	The Defendant, age 55, is the minister of a large church and well known from television broadcasts	2	1.53
A3	The Plaintiff is a homemaker and mother of three children aged two through eleven	2	1.34
F1	The Plaintiff was taken to surgery twice and was hospitalized for five days following the collision, but is expected to make a full recovery	2	1.12
A1	The Plaintiff is a 21 year old female in her senior year of college, studying to be a teacher	1	0.54
B5	The Defendant is a publishing company senior executive driving a BMW 760Li Sedan	1	0.48
A2	The Plaintiff, although originally from Mexico, has been in the United States for most of the last 23 years doing carpentry and painting work	1	0.30
B4	The Defendant is a young white female who was driving a	0	0.14

	borrowed car with friends during a break from school		
A6	The Plaintiff owns and operates a small business with his wife, has one college-aged child, two grown children, and four grandchildren	0	0.02
B3	The Defendant is a black male, age 21, who was driving his personal car at the time of the collision	0	-0.20
A5	The Plaintiff is 34 years old, unmarried and unemployed, but had been considering a return to school to obtain a high school GED	0	-0.26
B1	The Defendant is a white male, age 30, who was traveling on business at the time of the collision	0	-0.26
B2	The Defendant is a 43 year old Hispanic male who was driving a work truck when the collision occurred	0	-0.26
D6	The Defendant admits to making bad choices as a driver but says those choices weren't what caused the collision	-1	-0.48
D5	The Defendant, who had just learned of a close friend's death, admits now to being too emotionally wrecked to be driving at the time of the collision	-1	-0.50
A4	The Plaintiff, age 16, had just obtained his driver's license two weeks prior to the collision	-1	-0.72
D3	The Defendant acknowledged full responsibility at the scene of the collision and expressed remorse for what had happened	-2	-1.10
E2	The Defendant went to the hospital the day after the collision to check on the Plaintiff, and has expressed the desire now to do whatever is right for the Plaintiff	-2	-1.10
F5	The Plaintiff was released from the hospital after two days of observation, but continues to be treated by a chiropractor for back and neck pain	-2	-1.44
E5	At the time of the collision the Defendant was facing directly west into a setting sun, which may have impaired the Defendant's vision	-3	-2.07
E4	In the moments after the collision, while being extracted from the car, the Plaintiff kept repeating, "I'm sorry, I'm so sorry, it was an accident"	-5	-3.23
E3	This is the third lawsuit of this type that the Plaintiff has filed	-7	-4.21
E1	One witness at the scene says that the collision possibly could have been avoided if the Plaintiff had been paying more attention to the traffic	-9	-5.75

How do we really know that the transformed scale and the original are similar (Figure 2.3)

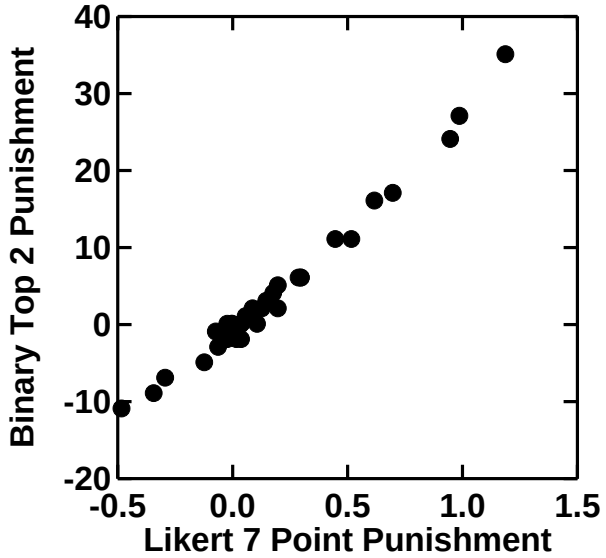
Our goal in RDE is to link together the independent variables, our elements of the case, and the response, which for this particular study on an automobile accident happens to be the severity of the fine. Our first analysis looked at the seven point rating scale as a Likert scale, analyzing the seven points as if they fell on a continuum from low punishment

(1) to high punishment (7). Our second analysis discarded the scale itself, and simply looked at a two point scale, mild punishment (operationally defined as 1-5), versus strong punishment (operationally defined as 6-7). Our focus was on membership in the group who would punish the defendant.

Do these two approaches end up yielding the same results? They should, because the 7-point rating scale (our so-called Persuasion Scale) is the progenitor of our 2-point rating scale (0/100; our so-called Interest Scale).

We can directly compare the two scales through a scatter plot, shown in Figure 2.3. Every one of the filled circles corresponds to one of the 36 elements. We have two estimates of the performance of the elements, the first from the use of the 7-point Likert scale, and the second from the 2-point Interest Scale (top 2-box). Figure 2.3 shows that these two estimates are linearly related to each other. Strong punishments on one scale correspond to strong punishments on the other scale. The same goes for weak punishments.

Figure 2.3 Scatter plot, showing how impact values for the 36 elements from the 7-point Likert scale is almost perfectly related, linearly, to the impact values from the Interest scale (top 2-box, 1-5 → 0; 6-7 →100).



<u>Transforming the data even more equally into more versus less serious punishment (Table 2.13)</u>

Let's finish this section on transformations by looking at one final simple transformation, a transformation where we divide the range of answers into a slightly more even break. We look at the lowest three ratings (1-3) as 'mild' punishment, and

transform them to 0. We look at the highest for ratings (4-7) as 'strong', and transform them to 100. The astute reader will realize that we are simply doing the binary transform that we did before, this time with a different cut-point. The OLS regression we will use does not 'care' about the criterion; it sees only two values for the dependent variable.

We can learn some interesting things by making this transform, and running yet a third regression. Table 2.13

1. The numbers in the three columns show the results for the original 7-point Likert scale (Rate1), the transformed binary Interest scale (Rate0Top2, 1-5→0, 6-7 → 100), and the other transformed binary interest scale (Rate0Top4, 1-3 →0, 4-7 →100).

2. Our major analysis will be comparing the two transformed scales.

3. The top2 scale has a lower additive constant, that number showing thus the percent of respondents would rate a vignette on the top of the scale (100), in the absence of elements. As expected, when we deal with more stringent scale, the Top 2, we have only 25% ready to assign strong punishment in the absence of elements. Of course, when we reduce the criteria, so the top of scale becomes 4-5-6-7, then 61% are willing to assign the more severe punishment. What we have done merely to expand the definition of what is a severe punishment, now including half the scale. No special findings here.

4. We get our important results from the performance of the elements. We have similar, albeit not identical orders of performance; severe elements in the top2 and top4 columns, as we should have. However, the effect if increasing the effective scale width of 'top4' is to reduce the proportion of respondents who would switch their vote to 'more severe' when the element is introduced. This reduction in the magnitude of the impact values for 'top4' vs. the higher impact values for 'top2' occurs because loosening the criterion for a 'severe' punishment ends up putting a lot of the effect of the individual elements into the additive constant.

5. As we explore these different scales and transformations, it becomes increasingly clear that we would do better with a transformed scale to get us to 'percent who would give a strong punishment,' From the perspective of discovering important elements, the better transformation,, should be dividing the scale so that 1-5 are low, or 0;6-7 are high or 100.

Table 2.13: Additive constants and strong performing elements for the Grand Models, using as dependent variables the ratings of seriousness expressed in a 7-point Likert scale) and in two binary scales, one with the top 2 box (1-5 →0, 6-7 →100), and the other with the top 4 box (1-3 →0, 4-7 →100).

		7-Point	Top2	Top4

	Additive constant	4.16	25	61
F4	The Plaintiff is now a quadriplegic permanently paralyzed from the neck down as a result of the collision	1.19	35	20
F2	The Plaintiff's left leg was amputated above the knee as a result of the collision	0.99	28	18
C3	Immediately following the collision, in which the Defendant slammed into the rear of the Plaintiff's vehicle, the Defendant's blood alcohol level was double the legal limit	0.95	24	15
C1	The Defendant apparently crossed the center line of the highway into oncoming traffic while texting on a cell phone	0.70	17	12
F3	The Plaintiff has been diagnosed with mild traumatic brain injury as a result of the collision, and is still struggling with short-term memory deficits and depression	0.62	15	13
D1	The Defendant had already been cited for this kind of conduct on two prior occasions in the last year and a half	0.45	12	9
C2	Witnesses say the Defendant ran a red light while traveling at least 20 miles per hour above the speed limit	0.52	11	12
E4	*In the moments after the collision, while being extracted from the car, the Plaintiff kept repeating, "I'm sorry, I'm so sorry, it was an accident"*	*-0.12*	*-5*	*-1*
E3	*This is the third lawsuit of this type that the Plaintiff has filed*	*-0.29*	*-7*	*-5*
E1	*One witness at the scene says that the collision possibly could have been avoided if the Plaintiff had been paying more attention to the traffic*	*-0.34*	*-9*	*-6*
E6	*Evidence indicates that the Plaintiff may have been driving in excess of the speed limit*	*-0.48*	*-11*	*-8*

Working with individual models (Figure 2.4)

A key aspect of RDE is the use of an experimental design to underly the vignettes evaluated by each respondent. That is, each respondent evaluates a unique set of vignettes, combinations of elements. The elements remain the same, but each indivdiual evaluates different sets of combinations. There are thousands of these combinations. By permuting the elements and then applying the experimental design, we end up with different RDE studies, one RDE study for each respondent.

The benefit of an indivdual-level model is what statisticians call a 'within-subjects' design. Every respondent serves as his own control. That is, all the information needed to make a decision is contained within the data of one person.

There is another benefit to individual-level designs. We can create the model, e.g., the Top2 Model, for each repsondent, and then shuffle respondents, placing them into different groups, according to external criteria. We don't have to worry that one group that we create is unbalanced, having more appearances of an element per respondent than another group. Every person is a unit. We simply average the appropriate units, after putting these individual units into groups according to criteria, these criteria coming from who the respondent is, what the respondent does, what the respondent says he believes, and even how the respondent acts in an RDE study.

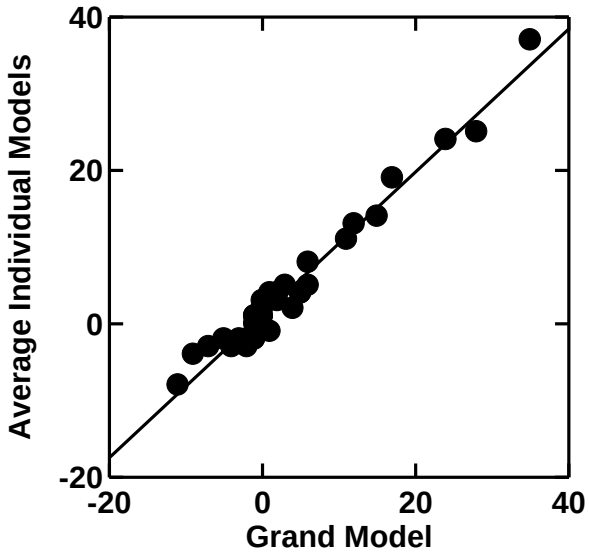
Before we accept the usefulness of analysis of individual-level models, and then their addition to the group model, we ought to check that the results we get from averaging these individual levels models is the same as the results we get from creating a grand model. We will focus our comparison on the results from the Top2 Model, because that type of model will constitute most of the models whose results we will discuss in the subsequent chapters when we look at different cases.

The similarity of element impacts is brought home clearly in Figure 2.4. The elements come from the Top2 model, where the original ratings of 1-5 were transformed to 0, and the ratings of 5-7 were transformed to 100. We added a very small random number to the transformed number, so that were were dealing with a cloud of numbers, all around 0, buit not exactly 0, or all around 100, but not exactly 100. After all is said and done, we see from Figure 2.4 that the elements are virtually exactly the same. A strong performing elements in the Grand Model with all the vignettes considered in one analysis is also a strong performing element when we estimate the parameters of the 311 models (additive constant, element impact value), and then average.

The one key difference in the additive constant. It is 21 for the average across 311 individual-level models, and 25 for the Grand Model. From previous studies, this 4-point difference is relatively minor.

A technical note: As a precautionary measure, the small random number, less than 10-5, is added to all of the values of the Top2 value, the 0/100 transformation (1-5 → 0, 6-7 → 100). The reasons for this is to ensure that the OLS regression 'runs' when an individual clearly differentiates across all 48 vignettes he tested, but assigned all 48 vignettes either ratings 1-5, making the top 2 value all 0's, or assigned all 48 vignettes ratings of 6-7, making the top 2 value all 100's. Adding the small random number prevents the regression from coming back with the very valid complaint that there is 'no variation in the dependent variable,' a complaint which typically 'crashes' the regression model. The small random number generates impact values or coefficients around 0 for both cases, and an additive constant of 0 for the former case, or an additive constant of 100 for the latter case.

Figure 2.4: Scatterplot, showing the impact values of the 36 elements from the Top2 Model, when the model is run on all the vignettes simultaneously (Grand Model, abscissa), versus when the the elements come from the averaging of 311 individual level model (ordinate). The impact values are almost the same.


Average Individual Models
Grand Model
40
20
0
-20
-20
0
20
40

Chapter 03
Learning about the topic by looking at reliability and at key subgroups

Introduction

Up to now we have looked at the data from the total panel. Our objective was satisfied by simple linear regression, wherein the independent variables included all 311 sets of 48 vignettes (Grand Model), or wherein the independent variable comprised 311 individual sets of vignettes, each set being rated by a different respondent, and then being analyzed separately, only to have the corresponding parameters averaged.

In this section we move on to how to look at data. Depending upon the problem, we will either use the Grand Model, or the Individual-Level Model. Some analyses require the grand model, such as split half reliability; we cannot otherwise divide the data in a way that we can ensure having both halves of the division perfectly balanced. Other analyes are easier to do by averaging parameters, i.e., from individual-level models of individuals who fall into different, complementary group, such as the experience of having been injured in an accident. Since each respondent generates his own model, we can simply divide the data into the models for those who have not been injured in an accident versus those who have been injured

Measuring Reliability

How do we demonstrate 'reliability' or ..can people really evaluate 48 vignettes? (Figure 3.1)

We begin with a study of subgroups to establish the 'reliability' o the method. Relaibility is the ability of the 'test' to come up with the same answers, when repeated. Reliability is important, because when a test or method is unrelaibility, we don't go any further. When we cannot repeat the results, there's no reason to delve into the topic more deeply because the phenomenon that we are investigatiing is simply too random, too uncontrollable. Serious scientists lose interest.

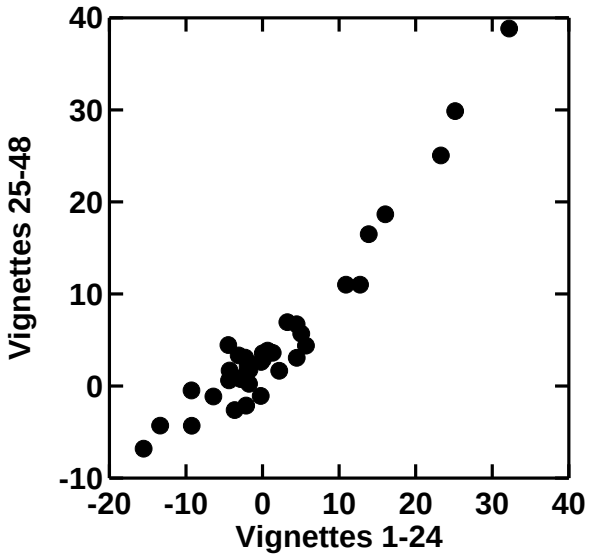
Reliability is an important issue in RDE, and something that must be established at the outset, or it is not worth pursuing. The truth of the matter is that anytime a respondent is asked to evaluate a lot of stimuli, a professional's eye raise in an air of hard to conceal disbelief. It is the nature of academics, of professionals, of researchers to attack methods, especially at what seems to be the weakest point. Asking someone to evaluate 48 vignettes is a hard to accept. Disbelief, and the chance of 'prove it' are fellow-travelers with the daa.

RDE allows us to establish reliability in different ways. We could repeat the study with the same group or with different groups, to determine whether or not our resuls are the same. Another way to establish reliability splits the data set into two or more equal parts, using some splitting criterion (e.g., first half of the vignettes, 1-24 vs second half of the vignettes, 25-48). After the split we estimate comparable parameters on each half, e.g., the impact values. To the degree that the results are similar, we say that the method generates reliable data.

Figure 3.1 shows us a scattergram of impact values from the Grand Model for Top2, with the abscissa corresponding to impact values obtained from vignettes 1-24, and the ordinate corresponding to impact values obtained from vignetetes 25-48. We cannot use the individual level models, since we need a complete experimental design for each respondent. Dividing the vignettes into the two halves, Vignettes 1-24 and Vignettes 25-48, destroys the experimental design.

It is clear from Figure 3.1 that the impact values from the first half of the interview (vignettes 1-24) are similar to the impact values from the second half of the interview (vignettes 25-28). The lack of agreement occurs with elements whose impact values are around 0, i.e., no incremental impact by the element in terms of the severity of the punishment inflicted by the court on the defendant.

Figure 3.1: Scatterplot showing the impact values estimated for the 36 elements using the first half of the RDE interview (vignettes 1-24), versus the impact values estimated for the same elements using the second half of the RDE interview (vignettes 25-48). The impact values were created for the Top2 value, using the Grand Model (data from all respondents combined).



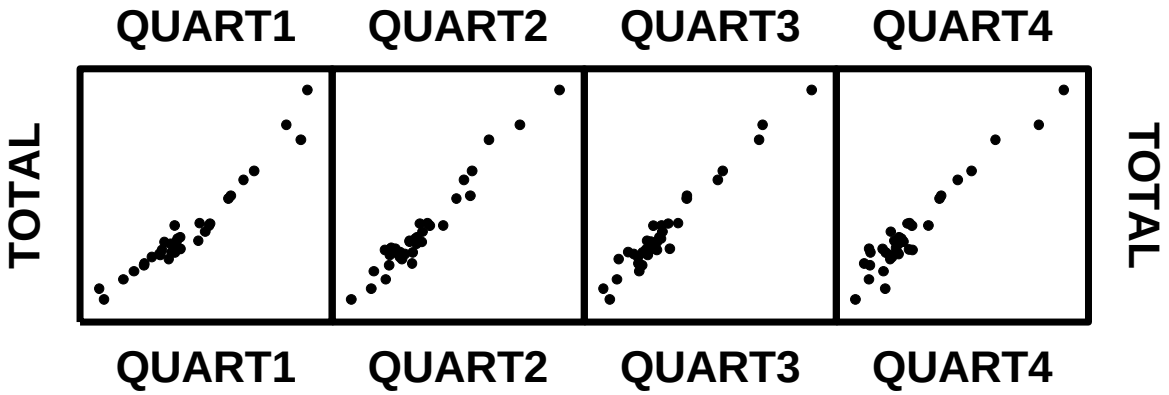
<u>Reliability at a granular level – looking at the four quartiles of vignettes (Figures 3.2 & 3.3)</u>

Let's finish our analysis of 'reliability' by a more granular view of the RDE interview, looking this time at the four 'quartiles' of the 48 vignettes. These are vignettes 1-12 (quartile 1), vignettes 13-24 (quartile 2), vignettes 25-36 (quartile 3), and finally vignettes 37-48 (quartile 4).

When we plot the impact values of the 36 elements for each quartile versus the total, we see a straight line, or perhaps a slight curvature (Figure 3.2). We estimate the impact values using the Grand Model for Top2 (ratings 6-7 →100), since dividing the RDE

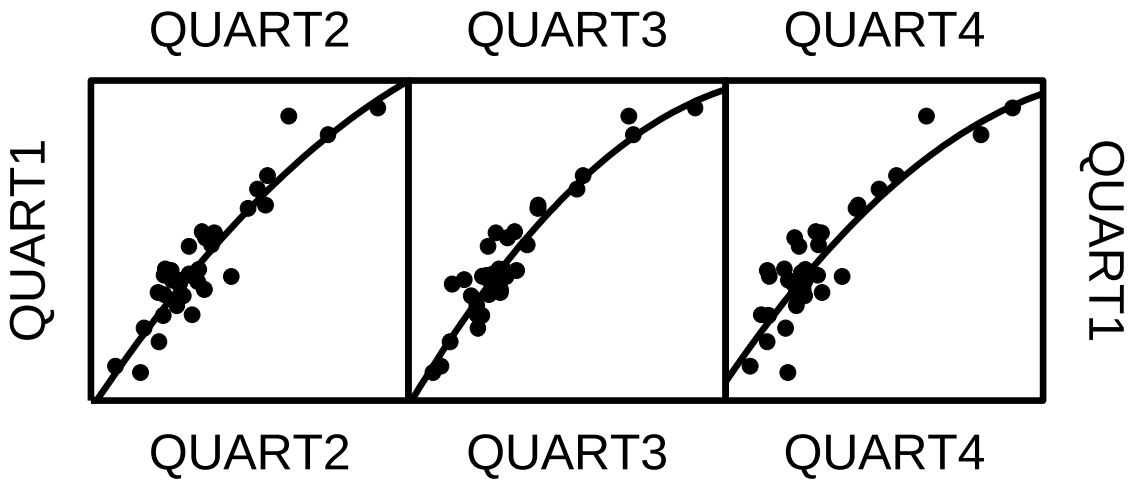
interviews into the four quartiles destroys the carefully constructed experimental design for each individual. Figure 3.2 shows that that as a first approximation there is very little change in the impact value across the RDE interview.

Figure 3.2: Scatterplot matrix showing how the impact values for the 36 elements estimated for each quartile of the RDE interview co-vary with the impact value for the 36 elements estimated for the total panel. The impact value is estimated for the variable Top2 (ratings of 6-7 → 100). The figure suggests no major disagreements in the impact value across the four quartiles of the interview.



It may well be that there is a slow 'drift' in the value of the impacts as we move from the first quartile of the RDE interview (vignettes 1-12), to the fourth quartile of the RDE interview (vignettes 37-48). Figure 3.3 shows us that as the interview proceeds, the strong performing elements with high positive imapcts continue to perform strongly, but the weak performing elements vary. In simple terms, we see a drift in the value of weak punishments (low impacts, near 0), but little drift in the value of strong punishments (high impacts)

Figure 3.3: Scatterplot matrix showing the impact values for Top2, based upon estimates from the four quartiles of the RDE interview. The figure suggests that as the interview proceeds from start to finish, we will see slight drifts in the values of low impact elements (mild punishment), but little drifts in the values of high impact elements (strong punishment)



How defined subgroups respond to the elements

Introduction

It is the custom of researchers to look at the total panel, and then probe more deeply into the subgroups, the components of the total panel. RDE works in this fashion, beginning with the top, and then cutting apart the data into complementary subgroups, based either upon who the respondent says he is (geo-demographic), what he done (behavior), what he believes (attitudinal), and even how he respondents in an RDE study ('mind-genomically,' i.e., mind-sets). The subgroup analysis often provides far more insight than does the analysis based upon the total panel. The reason becomes obvious once one works with RDE data. The elements themselves are 'cognitively rich.' That is, the elements themselves have meaning. When we look at the subgroups, we are drawn to what elements 'win,' i.e., perform well, satisfying our curiosity, and then we can step back to discern a pattern, i.e., become 'researchers.'

It is in this spirit that we look at four different ways of creating subgroups, four ways that could be multiplied hundreds of times. When we look at the subgroups, we will use the individual level models. We will aggregate the individual models, incorporating those respondents who fit the criterion for the subgroup (e.g., have no children versus have children). Since individual levels provide us with an estimate of the additive constant and the impact of each element on the Top2 measure (1-5 –0, 6-7 →100), we will be able to determine, for the subgroup, the strength of the group's propensity to assign a severe punishment (rating 6-7 for question 1), in the absence of elements. We will also learn which elements drive additional severe punishment, and the degree to which the subgroups agree with each other or disagree.

Our four ways of dividing the respondents are the following:

1. Who am I – we will look at those respondents who say they have no children versus those respondents who say that they have at least one child (Table 3.1)
2. My automobile experience – have I ever been injured in an automobile accident (Table 3.2)

3. How do I react emotionally when I read about these cases – do I select the feeling of 'outrage' more than 20% of the time when I read a vignette (Table 3.3)
4. What is my mind-set – there are two emergent mind-sets for this particular case. In which mind-set do I belong (Table 3.4)

Strategies for looking at subgroups

RDE provides us with a wealth of data, sometimes with what might seem to be a plethora of information. Our joy at having such concrete information, with so much depth, may evaporate when we realize that we have to create a coherent picture.

In order to make sense out of the data, it is necessary to eliminate most of the elements when one looks for patterns. Typically, it has been the custom to look at each subgroup in a complementary set of subgroups, sorting the elements from high imapct to low impact, and then elimianting those elements whose impact value falls below a cut-off value. Typically, the cut-off lies around 10. The result is a small set of elements, each of which 'adds' at least 10% more respondents to the base of those respondents already strongly responsive to the fundamental idea. In other words, begin with the additive constant (the base of strongly interested respondents, according to the top2 box metric), and select only those elements with impact values of +10 or higher.

There is another aspect of this strategy – comparing the impact values of the complementary subgroups. One easy way is to present the strongest or 'winning' elements for each subgroup, showing how those elements perform, and comparing the performance of those winning elements across the different complementary subgroups. We see this, for example, in Table 3.1, which presents data from respondents without children versus data from respondents with children.

1. We present two sets of data, strong performers for those respondents without children, and strong performers those respondents with children
2. The table comprises three columns, the first for total panel, the second for those without children, the third for those with children.
3. We shade the cells where the impact value is +10 or more, on a rounded basis, or elements whose impact is 9.51 or higher on an unrounded basis.
4. By showing all three columns, and by showing two sets of data, one per subgroup, we see immediately whether there is a difference between the two complementary subgroups.
5. We also learn whether creating the subgroups breaks apart the tendency towards 'average,' allowing strong performign elements to emerge.

Does having a children affect the punishment the respondent assigns (Table 3.1)

1. The additive constant is virtually the same (21 for those without children, 24 for those with children). In the absence of elements, only about one of four to one of five respondents is likely to assign a vignette about this particular auto accident a rating of 6-7 on the 7-point punishment scale (question 1). It's the elements which must do the work.
2. The very strong performing elements for both groups comprise both statements about the long term injuries to the plaintifff (e.g., quadriplegic, leg amputation), as well as as

statements about the clear violations by the defendant (high blood alcohol, texting on a phone)

3. There is no clear pattern of differences between the two groups.

Table 3.1: Strong performing elements for two subgroups, based upon having no children or at least one child.

		Total	No children	At least one child
	Additive constant for question 1 (severity of punishment)	22	21	24
	No Children			
F4	The Plaintiff is now a quadriplegic permanently paralyzed from the neck down as a result of the collision	**37**	**34**	**40**
C3	Immediately following the collision, in which the Defendant slammed into the rear of the Plaintiff's vehicle, the Defendant's blood alcohol level was double the legal limit	**24**	**26**	**22**
F2	The Plaintiff's left leg was amputated above the knee as a result of the collision	**25**	**24**	**26**
C1	The Defendant apparently crossed the center line of the highway into oncoming traffic while texting on a cell phone	**19**	**23**	**16**
C2	Witnesses say the Defendant ran a red light while traveling at least 20 miles per hour above the speed limit	**11**	**13**	**10**
	Children			
F4	The Plaintiff is now a quadriplegic permanently paralyzed from the neck down as a result of the collision	**37**	**34**	**40**
F2	The Plaintiff's left leg was amputated above the knee as a result of the collision	**25**	**24**	**26**
C3	Immediately following the collision, in which the Defendant slammed into the rear of the Plaintiff's vehicle, the Defendant's blood alcohol level was double the legal limit	**24**	**26**	**22**
C1	The Defendant apparently crossed the center line of the highway into oncoming traffic while texting on a cell phone	**19**	**23**	**16**

Does having been injured in an auto accident affect the punishment the respondent assigns? (Table 3.2)

1. The additive constants are slightly different. Not having been injured shows an additive constant of 24, or one out of four respondents assigning a severe punishment in the absence of elements describing the particulars of the accident. For those who were previously injured, the additive constant is substantially lower, 17.
2. It is in the elements that we see the biggest difference.

3. Both groups respond strongly to the injuries sustained by the plaintiff, and to the actions of the defendant causing the accident
4. When we look at the elements describing the defendant's actions leading up the accident, those who were previously injured in an accident showed higher impacts. That is, the previously-injured respondents assigned more severe punishments when they read about the traffic violations leading up to the accident.

Table 3.2: Strong performing elements for two subgroups, based upon having been injured in an automobile accident

		Total	Accident No	Accident Yes
	Additive constant for question 1 (severity of punishment)	22	24	17
	Not previously injured in an auto accident			
F4	The Plaintiff is now a quadriplegic permanently paralyzed from the neck down as a result of the collision	**37**	**38**	**35**
F2	The Plaintiff's left leg was amputated above the knee as a result of the collision	**25**	**26**	**21**
C3	Immediately following the collision, in which the Defendant slammed into the rear of the Plaintiff's vehicle, the Defendant's blood alcohol level was double the legal limit	**24**	**21**	**32**
C1	The Defendant apparently crossed the center line of the highway into oncoming traffic while texting on a cell phone	**19**	**18**	**24**
F3	The Plaintiff has been diagnosed with mild traumatic brain injury as a result of the collision, and is still struggling with short-term memory deficits and depression	**14**	**14**	**12**
D1	The Defendant had already been cited for this kind of conduct on two prior occasions in the last year and a half	**13**	**11**	**20**
C2	Witnesses say the Defendant ran a red light while traveling at least 20 miles per hour above the speed limit	**11**	**10**	**14**
	Previously injured in an auto accident			
F4	The Plaintiff is now a quadriplegic permanently paralyzed from the neck down as a result of the collision	**37**	**38**	**35**
C3	Immediately following the collision, in which the Defendant slammed into the rear of the Plaintiff's vehicle, the Defendant's blood alcohol level was double the legal limit	**24**	**21**	**32**
C1	The Defendant apparently crossed the center line of the highway into oncoming traffic while texting on a cell phone	**19**	**18**	**24**
F2	The Plaintiff's left leg was amputated above the knee as a result of the collision	**25**	**26**	**21**
D1	The Defendant had already been cited for this kind of conduct on two prior occasions in the last year and a half	**13**	**11**	**20**

C4	The Defendant appeared to swerve into the side of the Plaintiff's car while attempting a highway pass in the face of oncoming traffic	8	6	**16**
C2	Witnesses say the Defendant ran a red light while traveling at least 20 miles per hour above the speed limit	**11**	**10**	**14**
F3	The Plaintiff has been diagnosed with mild traumatic brain injury as a result of the collision, and is still struggling with short-term memory deficits and depression	**14**	**14**	**12**

Does feeling 'outraged' when reading the vignette co-vary with the punishment the respondent assigns? (Table 3.3)

Question 2 instructed the respondent to select the feeling he was experiencing after reading the particular vignette. Respondents were instructed to select exactly one of the five feelings/emotions for each vignette, but could change the selection for each new vignette. For this third analysis of subgroups we looked at those respondents who choose the feeling/emotion 'outraged' at least 10x in 48 vignettes.

1. The two groups differ in their additive constant. Those who were 'outrage'd 10x or less frequently showed a higher additive constant (26), whereas those who were 'outrage'd more frequently showed a lower additive constant (16)
2. The real difference between the two groups occurs in the elements.
3. Those who did not select outraged frequently showed consistenly lower impact values, i.e., fewer severe punishments.
4. Those who selected outrage frequently showed consistently higher impact values, i.e., more severe punishments.
5. Those who selected outrage frequently responded with severe punishments for more elements, and indeed selected severe punishments for elements that the comparable groups did not feel deserved severe punishment (e.g.,. *The Plaintiff has fully recovered physically but continues to suffer from post-traumatic stress disorder after being pulled from the car just moments before it burst into flames).*

Table 3.3: Strong performing elements for two subgroups, based upon the frequency of selecting 'outraged' in question 2 when reading a vignette

		Total	**10x**	**10x+**
	Additive constant for question 1 (severity of punishment)	22	26	16
	Low outrage frequency - fewer than 10x in 48 vignettes			
F4	The Plaintiff is now a quadriplegic permanently paralyzed from the neck down as a result of the collision	**37**	**32**	**45**
F2	The Plaintiff's left leg was amputated above the knee as a result of the collision	**25**	**23**	**28**

C3	Immediately following the collision, in which the Defendant slammed into the rear of the Plaintiff's vehicle, the Defendant's blood alcohol level was double the legal limit	**24**	**20**	**30**
C1	The Defendant apparently crossed the center line of the highway into oncoming traffic while texting on a cell phone	**19**	**16**	**26**
	High outrage frequency – 10x or more of in 48 vignettes			
F4	The Plaintiff is now a quadriplegic permanently paralyzed from the neck down as a result of the collision	**37**	**32**	**45**
C3	Immediately following the collision, in which the Defendant slammed into the rear of the Plaintiff's vehicle, the Defendant's blood alcohol level was double the legal limit	**24**	**20**	**30**
F2	The Plaintiff's left leg was amputated above the knee as a result of the collision	**25**	**23**	**28**
C1	The Defendant apparently crossed the center line of the highway into oncoming traffic while texting on a cell phone	**19**	**16**	**26**
D1	The Defendant had already been cited for this kind of conduct on two prior occasions in the last year and a half	**13**	7	**23**
F3	The Plaintiff has been diagnosed with mild traumatic brain injury as a result of the collision, and is still struggling with short-term memory deficits and depression	**14**	9	**22**
C2	Witnesses say the Defendant ran a red light while traveling at least 20 miles per hour above the speed limit	**11**	9	**16**
F6	The Plaintiff has fully recovered physically but continues to suffer from post-traumatic stress disorder after being pulled from the car just moments before it burst into flames	4	-1	**13**
C5	The collision occurred when the Defendant suddenly tried to cut across two lanes of traffic in the attempt to exit the freeway	5	1	**11**
C6	The Defendant was attempting to make a left turn and failed to yield to the oncoming traffic	5	1	**11**

Do there exist different mind-sets in the population, based on patterns of 'punishment severity?' (Table 3.4)

A hallmark of RDE (rule developing experimentation) is the uncovering of patterns relating the presence/absence of elements in vignettes to the pattern of reactions. From the previous three analyses it appears that we cannot uncover truly strong group-to-group differenceswhen we 'slice' our respondent population of 311 individuals into two complementary groups. It may be that there are no differences between groups, in which case our continuing efforts will reveal similar patterns across groups. Or, as seems to be the case from many other RDE studies, the traditional criteria by which we divide the respondent population into complementary subgroups simply is the wrong thing to do. It may be that more profound analyses are called for, analyses based upon the pattern of responses. This section reveals one of these more profound analyses, based upon the pattern of impact values.

Our method to analyze the data is known as 'clustering,' or 'segmentation.' In the simplest terms, segmentation generates patterns relating the presence/absence of the elements to the actual rating of the 7-point punishment scale (Persuasion Model), and then uses the statistical method of 'clustering' to discover homogeneous groups based upon these patterns. In the end, we will uncover 2-4 complementary subgroups, each subgroup showing radically different patterns of impact values.

Note: Although we present the data in terms of the Top2 Box values, the actual segmentation is based upon the pattern of impact values from the 7-point punishment scale, in question 1. That is, we present the results in our easy-to-understand format (percent of respondents choosing the more severe punishment) – but we use the more granular data from the 7-point scale for our calculations. We won't look at the calculations themselves from clustering, just look at the results.

Our approach follows these simple steps

1. The Persuasion Model: Using the original data matrix, relate the presence/absence of the 36 elements to the actual 7-point punishment ratings. This is called the Persuasion Model

2. Individual-level model: The output of Step 1 comprises a set of 36 coefficients, one coefficient for each element, as well as the additive constant. Each respondent generates his own set of 36 coefficients or impact values, as well as his own additive constant.

3. Impacts (coefficients) only, not the additive constant: We have 311 rows of data, one row for each respondent. Each row comprises 36 numbers, our coefficients from the Persuasion Model. We don't use the additive constant, which simply represents the average magnitude of the rating, for question 1. There is no additional information provided by the additive constant, since we are interested in the pattern of coefficients.

4. Search for similar patterns: Our objective in clustering or segmenting is to discover groups of respondents (i.e., rows) showing 'similar patterns.' We put the phrase 'similar patterns' in quotes because there are a variety of alternative criteria which define the term 'similar.' For our particular segmentation, we want to identify groups of respondents whose 36 impact values from the 7-point Persuasion Model are highly correlated with each other.

5. Operationally defining 'similar patterns.' Going further into the underlying operations, we create a measure of 'distance' between each pair of our 311 respondents. We estimate the distance by first computing the Pearson Correlation statistic for each pair of the 311 respondents, based upon the 36 coefficients or impacts, these coefficients estimated from the Persuasion Model. The Pearson correlation statistic (abbreviated as 'R') tells us the strength of a linear relation between one respondent and another, based upon the 36 coefficients. The value of R goes from a high of +1.00 when the 36 coefficients from two respondents are perfectly linearly related, down to a middle value

of 0.00 when the 36 coefficients from two respondents are not at all linearly related, to the a low of -1.00 when the coefficients from two respondents are inversely related.

6. The computational formula for 'distance' between two profiles: Using the Pearson Correlation statistic, we then compute the distance between two respondents, based upon the following simple formula: Distance = 1-R. When the coefficients are perfectly related, R = 1, and 1-R = 0, i.e., no distance. When the coefficients are not at all related, R=0, and 1-R = 1, i.e., a moderate distance. When the coefficients are inversely related, R=1, and 1-R = 2, i.e., the greatest distance.

7. Clustering algorithms: The clustering program attempts to minimize the distances between respondents within a cluster or segment, and maximize the distance between the centroids, the centers of gravity, the midpoints, of all segments.

8. Empirical decisions by evaluating solutions comprising different, and limited numbers of clusters: Statistical programs can extract two, three, four, five, six and more clusters or segments. The more segments which emerge, the more similar are the patterns within a segment, and the more different are the centroids of the segments. However, the more segments which emerge, the more difficult it is to work with the segmentation.

9. Statistical parsimony and subjective interpretability as the key to the solution: The ideal segmentation is parsimonious – few segments, and interpretable – the segmentation makes sense, and tells a story.

Our data suggests that we can do well with only two segments. Sometimes the data requires 3-4 segments or more, but we see a reasonably coherent story in the two segment solution shown in Table 3.4.

1. Segment 1 focuses on the illegal driving actions of the defendant, and then pays attention to the medical outcome. Segment 2 focuses most strongly on the medical outcomes, and does not pay attention to the illegal driving actions.

2. Segment 1 , focusing on the actions first and then the medical outcome, shows a very low additive constant, 8. It is the elements which do virtually all the 'work' to drive the punishment.

3. Segment 2, fovusing on the medical results, focuses most strongly on the medical outcomes, scarcely paying any attention to the illegal driving actions of the defendant

4. If we were to continue the segmentation exercise, we would expect to look at the strong performing elements for three complementary groups of respondents. It is clear, however, that we can stop at two segments, and still have a coherent, indeed compelling pair of subgroups who pay attention to different types of 'facts' presented by the vignettes.

Table 3.4: Strong performing elements for two subgroups, based upon clustering the respondents using the pattern of 36 coefficients from the Persuasion Model. Respondents in a segment show similar patterns in terms of the elements which drive them to assign to the defendant a strong punishment.

		Total	Seg1	Seg2
	Additive constant Top 2	22	8	33
	Segment 1 - Focus on the illegal action and then the results			
C3	Immediately following the collision, in which the Defendant slammed into the rear of the Plaintiff's vehicle, the Defendant's blood alcohol level was double the legal limit	**24**	**41**	**10**
C1	The Defendant apparently crossed the center line of the highway into oncoming traffic while texting on a cell phone	**19**	**37**	6
F4	The Plaintiff is now a quadriplegic permanently paralyzed from the neck down as a result of the collision	**37**	**32**	**41**
C2	Witnesses say the Defendant ran a red light while traveling at least 20 miles per hour above the speed limit	**11**	**28**	-2
C4	The Defendant appeared to swerve into the side of the Plaintiff's car while attempting a highway pass in the face of oncoming traffic	8	**20**	-1
F2	The Plaintiff's left leg was amputated above the knee as a result of the collision	**25**	**19**	**30**
D1	The Defendant had already been cited for this kind of conduct on two prior occasions in the last year and a half	**13**	**19**	9
C6	The Defendant was attempting to make a left turn and failed to yield to the oncoming traffic	5	**16**	-4
C5	The collision occurred when the Defendant suddenly tried to cut across two lanes of traffic in the attempt to exit the freeway	5	**15**	-3
F3	The Plaintiff has been diagnosed with mild traumatic brain injury as a result of the collision, and is still struggling with short-term memory deficits and depression	**14**	**12**	**15**
A3	The Plaintiff is a homemaker and mother of three children aged two through eleven	4	**11**	-2
	Segment 2 - Focus on the severe medical consequences			
F4	The Plaintiff is now a quadriplegic permanently paralyzed from the neck down as a result of the collision	**37**	**32**	**41**
F2	The Plaintiff's left leg was amputated above the knee as a result of the collision	**25**	**19**	**30**
F3	The Plaintiff has been diagnosed with mild traumatic brain injury as a result of the collision, and is still struggling with short-term memory deficits and depression	**14**	**12**	**15**

A fundamental issue – just who are these two segments?

Now that we have two clearer patterns of response to the facts of the case as presented in the vignettes and quantified by RDE, the standard question is 'who are the people in the segments?' They are clearly different in the elements to which they respond,

giving us a sense that with two groups (or occasionally with three or four groups, obtained in a similar fashion), we have identified something profound, something real in the mind of the respondent, and perhaps in the mind of the juror.

Yet the question continues. Just who are these people? Just because we know them from the pattern of their responses doesn't mean that we really know what to do. We are accustomed to interacting with people, to addressing our argments towards judges and jurors, to giving out the facts of a case to reporters, and then to the reading public at large. We work, write, communicate with the end person in mind. We 'know' the end person, and we adjust what we say and write. Here, however, we seem to be identifying a 'mind-set,' almost a disembodied set of ideas which move together, which seem to be coherent. Yet when a person presents himselves, we have no idea whehther that person in in Mind Segment 1 (focus on the illegal action and the results), or the person falls into Mind Segment 2 (focus on the severe medical consequences). If we know the mind-set segment into which a respondent falls, we can adjust our communications so that they have the maximum effect. Of course, we can also decide to compromise, to choose a set of communictions that generate a judgment for severe punishment, no matter who the person is to whom we talk or write. But we're missing the bigger opportunity to tailor our message. And, in those cases when our two (or more) mind-set segments are opposite, so that what appeals to one group 'turns off' the other group, this comprise strategy will itself end up being very weak.

The first strategy to identify se to dgments is the one used by researchers. That standard, relatively naïve strategy, looks at the two segments, attempting to find key observable differences. The differences could be standard geographic variation (Segment 1 could be primarily younger, or women, etc. and Segment 2 could be primarily older or men). That standard approach doesn't work. It's easy to do, of course, because we have information about the respondents, or if need be, we could go to a data company like Experian, and buy lots of information about the 311 respondents, information about who they are, but also information about what they do behaviorally in purchasing products, paying bills and so forth. Asking people about themselves we might call 'little data,' It doesn't really help us predict a person's membership in a mind-set segment. Sifting through reams of purchable data about a person, so-called 'big data,' doesn't work either. Again and again we don't find more than suggestive patterns. And the effort is enormous to sift through terrabytes of big data to find patterns linking data about a person to membership in a mind-segment.

To give us a sense of what we face, look at Table 3.5. The table shows us the pattern of responses of the two segments to seven of the questions asked in the self-profiling classification. Certainly we see some differences on the pattern of responses to the classificaiton questions, so that Mind Segment 1 (Focus on the illegal action and then the results, abbreviated 'Legal') and Mind Segment 2 (Focus on the severe medical consequences, abbreviated 'Empathic'). But we may get a sense that these simple associations between mind-set segment and classification are lucky, not under our control, not what we want.

Table 3.5: Cross tabulation, showing the percent of respondents from Segment 1 versus Segment 2 selecting each answer for seven questions in the self-profiling classification (second half of the RDE study).

	Seg1	Seg2
	Legal	Empathic
Total	**74**	**26**
3QS What is your household income per year BEFORE TAXES?		
S1 Under US $30,000	**75**	**25**
S2 US $30,000-$39,999	**77**	**23**
S3 US $40,000-$49,999	**85**	**15**
S4 US $50,000-$74,999	**74**	**26**
S5 US $75,000-$99,999	**71**	**29**
S6 US $100,000-$124,999	**60**	**40**
S7 US $125,000 and over	**75**	**25**
4QS How many children currently live in your household?		
S1 0	**72**	**28**
S2 1	**81**	**19**
S3 2	**61**	**39**
S4 3	**96**	**4**
S5 4 and more	**71**	**29**
7QS State laws are too weak and need significant revision		
S1 Strongly Agree	**74**	**26**
S2 Somewhat Agree	**74**	**26**
S3 Neither Agree nor Disagree	**73**	**27**
S4 Somewhat Disagree	**86**	**14**
S5 Strongly Disagree	**57**	**43**
8QS Federal government has grown too restrictive		
S1 Strongly Agree	**73**	**27**
S2 Somewhat Agree	**65**	**35**
S3 Neither Agree nor Disagree	**77**	**23**
S4 Somewhat Disagree	**76**	**24**
S5 Strongly Disagree	**71**	**29**
10QS Would you file a lawsuit if you or a family member were injured by someone else's negligence?		
S1 Yes, otherwise people at fault have no accountability	**78**	**22**
S2 Probably, depending on the seriousness of the injury	**72**	**28**
S3 Not likely, unless there was some intentionally bad conduct	**75**	**25**
S4 No, I don't believe in suing and there are already too many lawsuits	**57**	**43**

13QS Do you have driver's license?		
S1 Yes	**75**	**25**
S2 No	**60**	**40**
15QS Have you ever received a traffic ticket for your driving?		
S1 Never	**74**	**26**
S2 Once	**73**	**27**
S3 Two to three times	**72**	**28**
S4 Four to eight times	**79**	**21**
S5 More than eight times	**100**	**0**

Finding the segments – turning the problem around from the epidemiological approach to the medical approach (Table 3.6)

In today's medicine when it's time to diagnose a problem, we begin wih a simple set of tests. A patient presents himselves, and the doctor has an aray of tests of all kinds by which to diagnose what might be causing the patient's suffering. Certainly there are facts in the case; what the patient does. Those facts are duly recorded and put into the patient's file. What's more important to the doctor, however, is how the patient reacts to known tests, or challenges. The pattern of reactions, e.g., to the different aspects of a blood test, often tells the doctor a lot about the patient, and in medical/diagnosis/treatment/prognonis, who the patient is. The key is the intervention – a small 'experiment with the patient tells the doctor a lot, as the doctor compares the profile of responses in the test with the known information about diseases and how the patient with those diseases reacts on these very same tests.

We can following the same logic with our data. We know information about the 311 respondents in terms of how they responded to the vignettes, we created an individual-level model for each responsed (the Persuasion Model), and we know the mind-set segment to which the respondent belongs.

Parenthetically we created both the Persuasion Model and the the top 2 model for each respondent for this study. We use the Persuasion Model (original 1-7 ratings without transformation as the deendnet variable), The Persuasion Model is more granular.

Statisticians have given us tools such as DFA (discriminant function analysis), which creates a simple scoring tool. That scorindg tool assigns a new person to a group (e.g., mind-set) based upon a limited set of questions. We will increase the likelihood of creating a successful DFA by creating our questions out of the 36 elements.

Operationally, our approach is straight forward, following these steps:

1. Array the 311 individual level Persuasion Models in a matrix. Recall that the Persuasion Model used the actual scale ratings as the dependnet variable. Here we use a 7-point scale.

The same logic applies if we were to have used a 5 point scale, an 8-point scale, a 9-point scale, and so forth.

2. Add in a new column showing us the mind-set segment

3. Using the Persuasion Model, estimate on the 7-point scale the rating that each element would be been assigned by the respondent. This means simply adding the additive constant to the 7-point scale

4. Do the same for all respondents. Keep in mind that each respondent generated his own Persuasion Model

5. We know have 311 rows of data, one row for each respondent. Each row comprises the segment membership, and then 36 numbers, estimates of how each element wuld have performed on the 7-point scale (question 1), had the element appeared alone.

6. Reduce the matrix of ratings down to three numbers. Typically estimated raings of less than 2.5 would be coded 1, estimated ratings 2.5 to 5.5 would be coded 2, and ratings of 5.5 or higher would be coded 3. These cut-points are abitrary, but they work.

7. Our data now comprises 311 rows of data, with the segment member of each respondent, and an estimate of how that respondent would have score each element separately, had the element been the focus of a 1-element vignette. The numbers for each element are 1,2, or 3, based upon the individual respondent's own Persuasion Model.

8. DFA now uses that information to identify the best set of elements which differentiate the three clusters or segments. DFA uses the information about the rating of each element (expressed on a 3-point scale).

9. Table 3.6 shows us how the elements perform. Four of the elements perform best as differentiators. These elements show the highest F value, i.e., the highest signal/noise ratio, or ability to differentiate between the two segments. DFA looks for these key differentiating elements, and uses them to build the classification model (Table 3.7)

Table 3.6: F ratios from the DFA (discriminant function analysis). These four elements together best differentiate the two segments from each other.

ID	Element	F value
A3	The Plaintiff is a homemaker and mother of three children aged two through eleven	25.30
C2	Witnesses say the Defendant ran a red light while traveling at least 20 miles per hour above the speed limit	30.94
D4	The Defendant has admitted to being in a hurry before the collision because "I knew people were waiting for me"	26.18

F4	The Plaintiff is now a quadriplegic permanently paralyzed from the neck down as a result of the collision	13.71

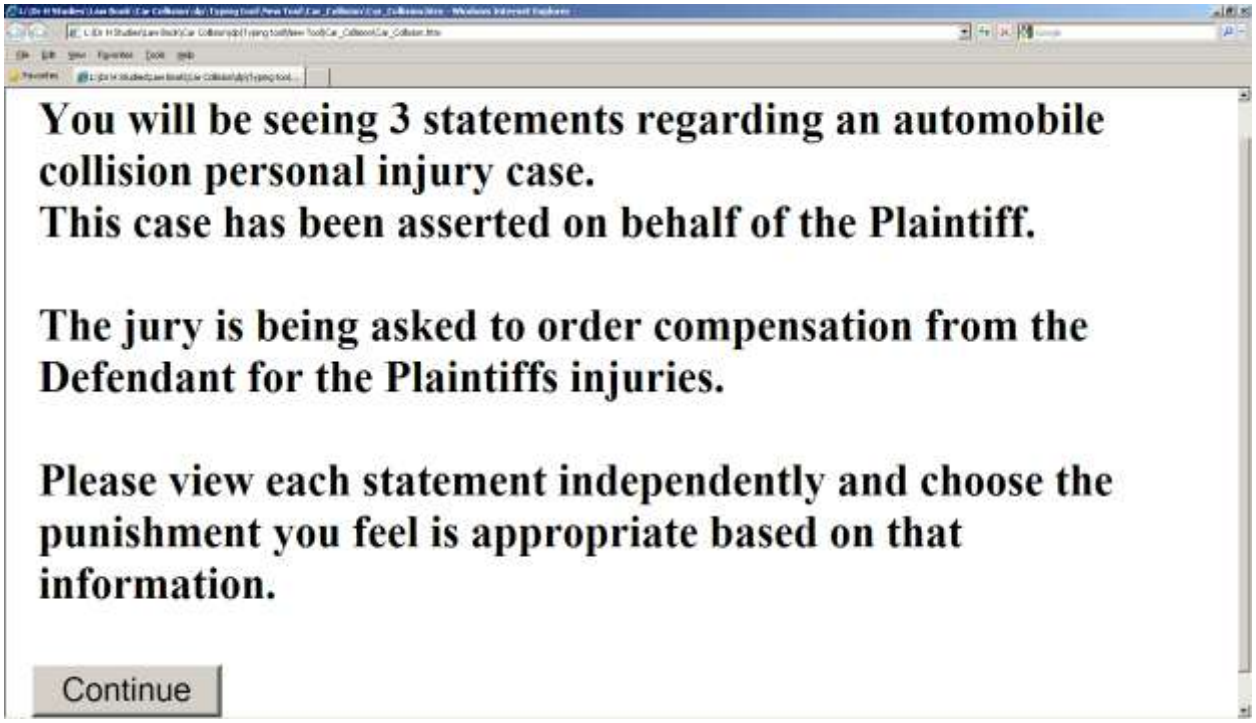
10. We choose the four number of elements, those which are strongest, and create a small questionnaire, show in Figure 3.4, the pattern of answers to which assign a prospect to a mind-set segment, based upon what is known as a classification function. Table 3.7 shows the classification function. There are two classification functions, for for Segment 1 (the Legals), and the other for Segment 2 (the Empathics)

Table 3.7: The classification function, emerging from the DFA analysis. The user simplys'plugs' in the ratings by the respondent of the four elements in Table 3.6, using a 3-point scale. The classification function calculates a value based upon the parameters of the function and the values selected by the respondent. DFA estimates two values, one for Segment 1 and the other for Segment 2. DFA then selects the function with the highest positive value as the segment to which the person belong.

	Classification Functions	Seg1 Legals	Seg2 Empathics
	Constant	-14.73	-14.88
A3	The Plaintiff is a homemaker and mother of three children aged two through eleven	2.83	1.96
C2	Witnesses say the Defendant ran a red light while traveling at least 20 miles per hour above the speed limit	2.71	1.75
D4	The Defendant has admitted to being in a hurry before the collision because "I knew people were waiting for me"	2.08	2.91
F4	The Plaintiff is now a quadriplegic permanently paralyzed from the neck down as a result of the collision	4.50	5.24

11. When a new person comes, the person can be introduced to the case, either with a short writeup or a long writeup, depending upon the particulars of the situation. Figure 3.1 shows the introduction to the situation, in a 'short form,' comprising a single sentence.

Figure 3.1: Introduction to the case for subsequent 'mind-typing.' The respondent reads the introduction.



12. The respondent then reads a screen which comprises three columns (for the three suggested levels of punishment), and four elements (rows). The respondent selects an appropriate punishment for each element. (Figure 3.2). In order to prevent respondents from 'gaming' the system, DFA procedure creates a four-element typing tool, and two three-element typing tools. All three tools perform equally well. By changing the tool for different people, the RDE system prevents the respondents from 'learning the patterns.'

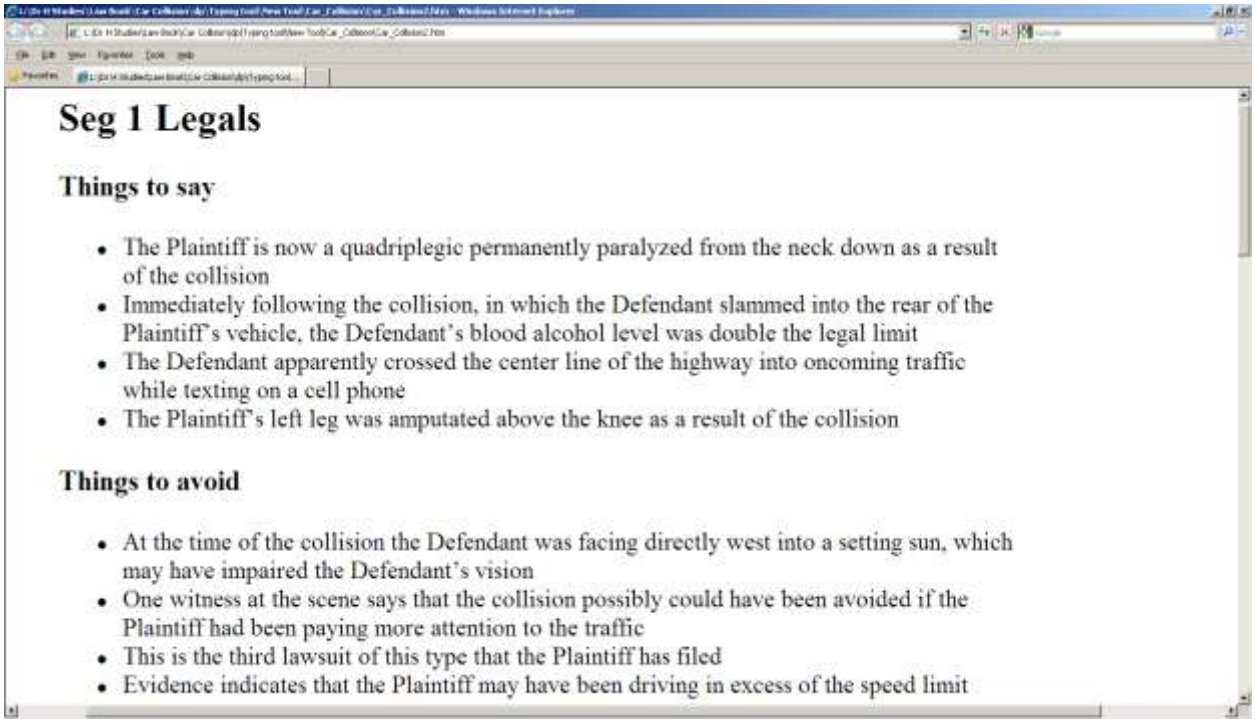
Figure 3.2: One of the typing tools, showing three elements (rows), and the three graded punishments (columns). For each element the respondent selects the appropriate punishment.

What punishment do you consider fair for the Defendant?

Options	Compensation to Plaintiff equal to all of Plaintiff's medical charges plus some amount for a period of physical impairment or less	AT LEAST Compensation to Plaintiff for all medical charges, physical impairment and loss of earning capacity	AT LEAST Compensation to Plaintiff for all medical charges, loss of earning capacity, and as much as the court permits for physical impairment, pain and mental anguish
The Plaintiff is a homemaker and mother of three children aged two through eleven	•	•	•
Witnesses say the Defendant ran a red light while traveling at least 20 miles per hour above the speed limit	•	•	•
The Defendant has admitted to being in a hurry before the collision because "I knew people were waiting for me"	•	•	•

13. When the respondent finishes completing the typing questionnaire (i.e., clicking the appropriate punishment for each element), the computer returns with the assignment of the respondent. The computer further provides the statements to say versus to avoid, either for Segment 1, the Legals (Figure 3.3), or for Segment 2, the Empathics (Figure 3.4).

Figure 3.3: What to say versus what to avoid saying for Segment 1, the Legals, when the person is assigned to Segment 1 by the typing wizard



Seg 1 Legals

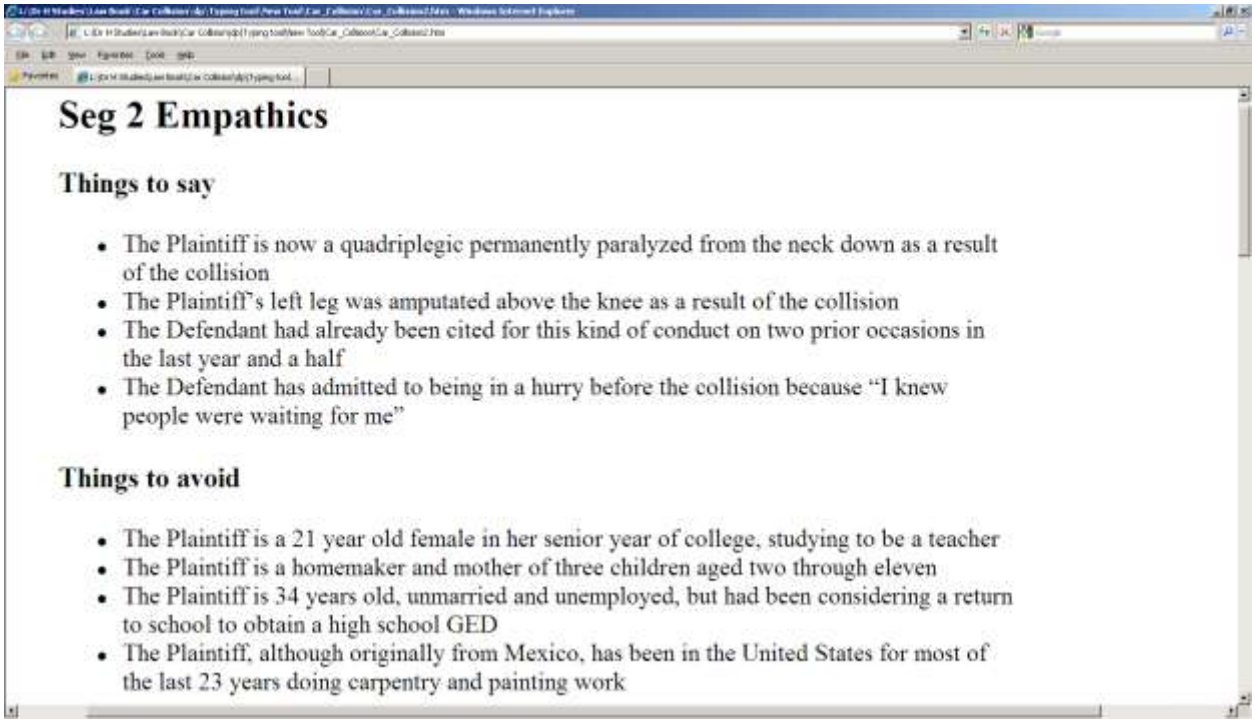
Things to say

- The Plaintiff is now a quadriplegic permanently paralyzed from the neck down as a result of the collision
- Immediately following the collision, in which the Defendant slammed into the rear of the Plaintiff's vehicle, the Defendant's blood alcohol level was double the legal limit
- The Defendant apparently crossed the center line of the highway into oncoming traffic while texting on a cell phone
- The Plaintiff's left leg was amputated above the knee as a result of the collision

Things to avoid

- At the time of the collision the Defendant was facing directly west into a setting sun, which may have impaired the Defendant's vision
- One witness at the scene says that the collision possibly could have been avoided if the Plaintiff had been paying more attention to the traffic
- This is the third lawsuit of this type that the Plaintiff has filed
- Evidence indicates that the Plaintiff may have been driving in excess of the speed limit

Figure 3.4: What to say versus what to avoid saying for Segment 2, the Empathics, when the person is assigned to Segment 2 by the typing wizard



Seg 2 Empathics

Things to say

- The Plaintiff is now a quadriplegic permanently paralyzed from the neck down as a result of the collision
- The Plaintiff's left leg was amputated above the knee as a result of the collision
- The Defendant had already been cited for this kind of conduct on two prior occasions in the last year and a half
- The Defendant has admitted to being in a hurry before the collision because "I knew people were waiting for me"

Things to avoid

- The Plaintiff is a 21 year old female in her senior year of college, studying to be a teacher
- The Plaintiff is a homemaker and mother of three children aged two through eleven
- The Plaintiff is 34 years old, unmarried and unemployed, but had been considering a return to school to obtain a high school GED
- The Plaintiff, although originally from Mexico, has been in the United States for most of the last 23 years doing carpentry and painting work

14. We see a worked example using the classification functions. This particular typing tool, one of three, comprises four elements (Table 3.8). . Table 3.8 shows us the 'solved' classification functions for repsondents 1-3, and the likely segment assignment As noted above, each segment generates its own classification function. A respondent selects one of three scale points (1, 2, 3, corresponding to the columns in Figure 3.2, starting from the left). The pattern of selection is entered into both classification functions. The classification functions are then 'solved' for the pattern selected. The classification function generating the highest (in this case higher) positive number, tells us to the segment to which the respondent likely belongs.

N*ote: DFA creates a four-element typing wizards and two three-element typing wizards*

Table 3.8: Worked example of a mind-typing exercise, using the classification function developed for four elements. Each respondent (Resp 1-3) generates a pattern of respondents, which are solved for the two classification functions. The classification function showing the highest positive value shows the segment to which the respondent likely belongs.

	Pattern of responses from three respondents, and assignment to one of the two mind-set segments			
		Resp 1	**Resp 2**	**Resp 3**
A3	The Plaintiff is a homemaker and mother of three children aged two through eleven	2	1	1
C2	Witnesses say the Defendant ran a red light while traveling at least 20 miles per hour above the speed limit	3	1	3
D4	The Defendant has admitted to being in a hurry before the collision because "I knew people were waiting for me"	2	2	2
F4	The Plaintiff is now a quadriplegic permanently paralyzed from the neck down as a result of the collision	3	3	1
	Segment 1 (Legals)	**16.7**	8.5	**4.9**
	Segment 2 (Empathics)	15.8	**10.4**	3.4

15. DFA operates on actual data, so we do not expect DFA to assign the respondents accurately all the time. It's important to know how successful we can be with a data set. To the degree that we assign our respondents to the 'correct' segment, we can feel confident in the procedure used to segment respondents, viz., the mind-set segmentation. DFA will be correct when the respondents in the segments differ dramatically from each other. DFA will be correct fewer times when the segmentation is 'forced,' and arbitrary. Table 3.9 the success table – the percent of respondents correctly versus incorrectly assigned to the segment. We know the actual segment membership of our respondents, so we can use our 311 data cases for the automobile accident as our 'learning sample'. Using the classification functions and the assignment criterion (highest positive value), DFA is correct 72% of the time with a 4-question typing tool/. The DFA solution can be used with new people to

assign them to one of the two segments, but only segments relevant to this particular automobile collision case

Assignment Performance (cases in row category assigned to column category)			
	Seg1 Legals	**Seg2 Empathics**	**%correct**
Seg1 Legals	168	62	73
Seg2 Empathics	25	56	69
Total	193	118	72

Table 3.9: The success table for the four-element typing tool, created by DFA for the

16. It is important to realize that each case, each situation, will involve a different set of facts, different elements, and result in a different micro-science created by RDE. Thus the DFA solution presented here should be viewed as limited to these particular facts

Chapter 04

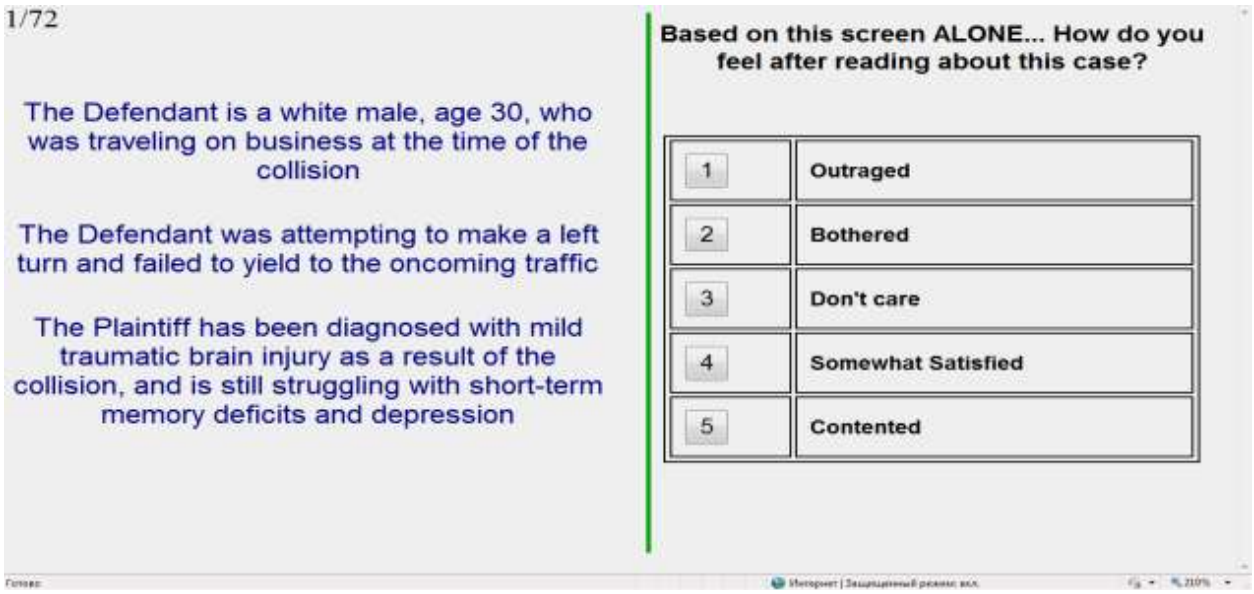
Dealing with explicitly rated emotions

It is the job of the lawyers in the case to weave together facts with emotions, presenting the facts in such a way that they elicit the proper emotions, and lead to the desired case outcome. This chapter deals with the linkage of elements to emotions in the mind of the respondent participating in an RDE study. The chapter is not meant to be a lesson in emotions and argument, but rather a way that RDE links elements to limited sets of feelings/emotions.

Figure 4.1 shows a screen shot for the second rating question. The instructions require the respondent to read the vignette and then select one of five emotions which best 'fits' the feeling that the respmdemt is experiencing. The list of feelings/emotions in Figure 4.1 is limited. As such, the list is exploratory, simply to identify the dominant feeling associated with each element. The choice of the feelings/emotions is left to the researcher. Since this second question is exploratory, we have the luxury to trying 5-7 feelings/emotions in the hopes of learning something new.

Note: A full exploration of the linkage of feelings/emotions with elements is not feasible. There are many dozens, perhaps hundreds of different nuances of feelings/emotions that could link with the elements. In a short RDE study it's important to limit the number of choices to 5-7. That limited number of alternatives from which to select allows RDE to develop a sufficient base size of linkages. As the number of choices moves beyond seven, and as an increasing number additional feelings/emotions are explored, the data become more 'sparse.' There are fewer possible linkages between each element and each feeling/emotion. In the end, 5-7 suffice.

Figure 4.1: A sample screen showing a vignette from the automobile collision study (left side) and the list of five feelings/emotions (right side). The respondent is to select one of the five feelings/emotions after reading the screen, describing the case.



A superficial analysis – frequency of using each feeling/emotion

Perhaps the easiest analysis is to count the frequency or number of times that respondents select each of the five feelings/emotions, without regard to the elements and vignettes presumably causing that selection. Just counting gives us a sense of what feelings/emotions keep reoccurring. For our autocollision study, we generate this tabular information by counting the number of times each feeling/emotion is selected. However, that count is the number of times, and will vary across the different studies. When the numbers of respondents differ, or when the nature of the experimental differs, so it's not six silos each with six elements, the result is a different number of total vignettes seen in the study, and therefore different numbers. A better solution is to calculate percents. Table 4.1 shows both the actual count and the percents.

Table 4.1: Absolute frequency (count) and relative frequency (percent) for the choice of feelings/emotions in the automobile collsion study.

	Frequency	Percent
Bothered	5907	40
Content	1406	9
Don't Care	2954	20
Outraged	2303	15
Somewhat Satisfied	2359	16
Total	14928	100

Do the segments differ in the emotions that they choose? (Table 4.2)

Chapter 3 showed us that the segments respond strongly to different messages. Segment 1 (Legals) respond strongly to messages about breaking the law. Segment 2 (Empathics) respond strongly to messages about what happened to the plaintiff. Given their differences in the arguments and messages to which they respondent, we might

expect these groups to differ in their selection of feelings/emotions. Table 4.2 disconfirms this expectation. The pattern of selecting feelings/emotions is remarkably similar across these two segments. The most frequently selected feeling/emotion is 'Bothered,' the least frquently select is 'content.'

Table 4.2: Frequency of selection by the two mind-set segments of the each of five feelings/emotions, for the automobile collision case. Despite the fact that the segments differ dramatically from each other in what they find compelling for punishment, the segments show similar patterns of selection.

	Segment 1 (Legals)	Segment 2 (Empathics)	Total Panel
Bothered	37	41	40
Content	10	9	9
Don't Care	22	18	20
Outraged	16	15	15
Somewhat Satisfied	15	16	16
Total	100	100	100

Selecting emotions for the two most severe punishments (Table 4.3)

Our failure to find a substantial difference between the two segments in terms of pattern of selected feeling/emotions might have arisen from the possibility that there is little or no emotion attached to vignettes that don't drive 'punishment.' We have a group of vignettes which generate relatively weak or moderate punishment (61% generating ratings of 1-5 on the punishment scale), and a smaller, but still sizeable group of vignettes which generate stronger punishment (39% generating ratings of 6-7 on the punishment scale).

When we eliminate the 61% of vignettes generating low weak punishments, we are left with the 39% of vignettes generating stronger punishment. The differences between the two segments are still very small.

The remarkable resilience of the patterns for selecting feelings/emotions is quite surprisingly. Whereas we can find individuals with dramatically different mind-sets with regard to what drives their judgment of what's worthy of punishment, these individuals respond the same. Segment 1, the Empathics, for example, as sensitive as they are to the stories of injury, don't feel any more outraged in general than do the Legals, Segment 2.

Table 4.3: Distribution of emotions selected by the mind-set segments and the total panel. The table shows percents selected, but only considering those vignettes generating a punishment level of 6-7 on question 1 (severity of punishment)

Emotions selected for those vignettes with the two most severe punishments selected	Segment 1 (Legals)	Segment 2 (Empathics)	Total Panel

Bothered	37	43	37
Content	12	9	12
Don't Care	8	6	8
Outraged	34	31	34
Somewhat Satisfied	10	11	10
Total	100	100	100

Linking feelings/emotions with elements

We learn a great deal by linking together the specific elements and the feelings/emotions. When we do the linking using OLS (ordinary least-squares) regression, we end up understanding far more deeply the nature of the elements that we are using to describe the automobile accident. Just as OLS regression allowed us to understand how elements 'drive' the selection of punishment, OLS regression allows us to understand how elements 'drive' the selection of the feeling/emotion.

Before using OLS regression with the five feelings/emotions, we have to transform the data. We are going to treat the five feelings/emotions as five different and unrelated responses to the vignette. We will not assume that they form a continuum. (In contrast, when we dealt with the punishment scale, question #1, we did assume that the seven punishments constituted a continuum).

There is a rationale for this shift in thinking, for this treatment of the five feelings/emotions as totally separate, unrelated choices. There will be many times that we will use feeling/emotions that are far less related to each other than the five that we use now. For example, we could have instructed the respondent to select one of three feelings/emotions: Curious, Outraged, Surprised respectively. These three feelings/emotions are not particularly related to each other. Rather, they represent three different responses to a vignette. We would still focus on the linkage of the elements to the selection of each feeling/emotion.

Step1 in the analysis – transforming the data (Figure 4.2

The mechanics of linking together elements with feelings/emotions follows a simple series of steps, which end up creating five new dependent variables (one per feeling/emotion), and in turn creating five models, one model per feeling/emotion. This strategy, creating new variables from one 'rating scale' (question #2), will serve us well, when we deal with any rating scale comprising choices that are not necessarily related to each other.

We begin the analysis by looking at transformed data (Figure 4.2). The figure shows us the data from one respondent, whose UID (unique identification numbr) is 903623. This respondent evaluated 48 vignettes, shown in the 48 rows. As we have seen before, the vignettes are developed by experimental design. For this particular design, we explored six silos or topic areas (A-F), each silo comprising six options, 1-6.

Figure 4.2 show the data for the respondent in a format that a computer can use for OLS, our workhorse program, ordinary least-squares regression. The 36 elements are

presented 36 independent variables. When an element is present in the vignette, the cell for that element is coded '1.' In contrast, when an element is absent from the vignette, the far more frequent case, the cell for that element is coded '0.' So, we are repeating what we did for the analysis of the punishments, question #1, wherein we coded the presence of the element '1,' and coded its absence '0.'

After the elements comes a column labelled 'Rate.' This column shows numbers from 1-5. The numbers correspond to the selection of the five emotions we investigated in the automobile collision study. For our purposes here, we simply call these answers 1-5, and assume that there is no necessary connection of any sort among them, other that they are alternative answers for the same generate question, e.g., select an emotion, select a venue for the trial, select the expected ethnic background of the defendant, and so forth.

The key to the analysis comes in the recoding of the rating. The five alternatives of the rating are not necessarily related to each other. Thus, they do not form a scale. In fact, we have to treat each scale 'point' or 'choice option' as a completely unique variable, in and of itself.

We now rethink our data. The respondent is selecting a feeling. We must represent each feeling as a separate new variable, which, for each vignette, is either selected (coded 100), or not selected (coded 0).

We have done two things to make our analysis tractable for OLS regression:

1. *We have converted one response variable to five variables, each of which must be treated separately*
2. *We have given a 'number' to choice (100), and a complementary number to non-choice (0)*

These two actions allow us to move forward, linking together the presence/absence of the elements, to the choice of each feeling/emotion.

To give us a sense of what data will look like, we show a 'random' case in Figure 4.2. We simple assume that a respondent randomly assigns one of the five feelings/emotions to a vignette. To make the demonstrate simple, we assume that for the first vignette the respondent selects Emotion 1, for the second vignette the respondent selects Emotion 2, for the third vignette the respondent selects Emotion 3, and so forth. As soon as we finish with Emotion 5 for the fifth vignette, the process repeats. We array all the data from our 311 respondents (14,928) so that we simply keep repeating these five patterns, independent of the respondent. Each of the five emotions appears viritually equally often, and in effect randomly.

Figure 4.2: Example of the data set of one respondent prepared for the analysis of emotions. The first column shows the respondent's UID (unique identification number). The second set of 36 columns show the 36 elements (A1-F6), and whether or not the element was present in the vignette. The third column shows the 'rating,' i.e., the selection of one of five answers corresponding to the five differenet feelings/emotions. The final set of five columns shows the recoding of the selection

into five new dependent variables, EM1-EM5. When a feeling/emotion was selected, the cell corresponding to that feeling/emotion has the value '100.' When a feeling/emotion was not selected, the cell has the value '0.'

Microsoft Excel - Auto.collision.Emotion.Resource.v41.xls [Compatibility Mode]

UID	A1	A2	A3	A4	A5	A6	B1	B2	B3	B4	B5	B6	C1	C2	C3	C4	C5	C6	D1	D2	D3	D4	D5	D6	E1	E2	E3	E4	E5	E6	F1	F2	F3	F4	F5	F6	Rate	EM1	EM2	EM3	EM4	EM5
903623	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	100	0	0	0	0
903623	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	2	0	100	0	0	0
903623	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	3	0	0	100	0	0
903623	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	4	0	0	0	100	0
903623	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	0	0	0	0	100
903623	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	1	0	0	0	1	100	0	0	0	0
903623	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	2	0	100	0	0	0
903623	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	3	0	0	100	0	0
903623	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	4	0	0	0	100	0
903623	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	5	0	0	0	0	100
903623	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	1	0	0	1	100	0	0	0	0
903623	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1	2	0	100	0	0	0
903623	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	3	0	0	100	0	0
903623	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	4	0	0	0	100	0
903623	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	0	0	0	0	100
903623	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	1	0	1	100	0	0	0	0
903623	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	100	0	0	0
903623	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	3	0	0	100	0	0
903623	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	4	0	0	0	100	0
903623	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	1	0	0	0	0	0	5	0	0	0	0	100
903623	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	100	0	0	0	0
903623	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	2	0	100	0	0	0
903623	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	3	0	0	100	0	0
903623	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	4	0	0	0	100	0
903623	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	4	0	0	0	0	100
903623	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	1	0	0	0	1	100	0	0	0	0
903623	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	2	0	100	0	0	0
903623	0	1	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	3	0	0	100	0	0
903623	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	4	0	0	0	100	0
903623	1	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	0	0	0	0	100
903623	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	100	0	0	0	0
903623	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	2	0	100	0	0	0
903623	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	3	0	0	100	0	0
903623	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	4	0	0	0	100	0
903623	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	5	0	0	0	0	100
903623	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	1	100	0	0	0	0
903623	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	100	0	0	0
903623	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	3	0	0	100	0	0
903623	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	4	0	0	0	100	0
903623	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	5	0	0	0	0	100
903623	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	100	0	0	0	0
903623	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	2	0	100	0	0	0
903623	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	3	0	0	100	0	0
903623	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	4	0	0	0	100	0
903623	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	5	0	0	0	0	100
903623	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	100	0	0	0	0
903623	0	1	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	100	0	0	0
903623	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	3	0	0	100	0	0

<u>Step 2 in the anaysis – running OLS (ordinary least-squares) regression (Table 4.4)</u>

Figure 4.2 presents us with a dense amount of information. People are pattern seekers. We can't really say much about the patterns in a dense pattern of 0's and 1's, or a dense pattern of 0's and 100's. There may be a pattern there, but it's quite unlikely that we will find a pattern which is meaningful.

It is as this point when OLS regression comes in, and does its 'magic.' We know that we allocated the feelings/emotions 'randomly' to the vignettes. We know because we repeated the same pattern thousands of times, in rigid lockstep. No matter what the vignettes were, we put in the same pattern of responses. We see the regularity of the response in Figure 4.2, but what about the linkage between the individual elements and the responses. What if we could pore more closely over the data, 'jump into the matrix,' and with a microscope see exactly what our actions in Figure 4.2 produces. We will do that using OLS regression.

As we use OLS regression, recall that we created five new variables, EM1 – EM5. For each variable, we know the presence/absence of the 36 elements. Both parts of this 'knowledge' are straightforward, because they are under our control. We began with the

experimental design, a recipe of 48 combinations, which recipe was permuted anew for each of our 311 respondent. We don't exactly repeat the the same set of 48 vignettes for each new respondent. Rather we provide that respondent with a slight modification of the basic set of 48, a modification which changes the specific set of combinations, but doesn't change the number of silos and elements (six silos, each with six elements), and ensures that the elements are statistically independent of each other.

We continue with our dependent variables, the array of five answers, with each row comprising exactly one chosen feeling/emotion, and four unchosen. These follow in lock step, one set of five, then another set of five. The pattern continues as we gradually slide from one respondent to another. In the end these five patterns appear equally often.

Let's now apply OLS regression to this grand set of data, 14,928 rows. We will estimate the likely rating EM1 (the selection of the first emotion), from the presence/absence of the 36 elements. We will base our estimate on 14,928 cases or observations.

We first specify the equation or model:

Linkage (i.e., Selection): $EM1 = k_1(A1) + k_2(A2) \ldots k_{36}(F36)$

The foregoing equation sttes that the 'rating' of an emotion, i.e., the '0' for not selecting the feeling/emotion, or '100' for selecting the feeling/emotion, is a weighted sum of the 36 elements, when these elements are expressed as '0' for absent from a vignette, and '1' for present in a vignette. We do not use an additive constant, because we assume that in the absence of elements, a feeling/emotion will not be selected. This is a simplifying assumption, allowing us interpret the linkage between the element and the selection of the feeling/emotion.

The weighting factors, k_1-k_{36}, show us the linkage between the elements and the selection of the feeling/emotion. These linkages or coefficients can be estimated for the purely 'random' allocation of feelings/emotions to vignettes. We just did that here. We see the results in Table 4.4.

The results from the OLS regression for each of our five feelings/emotions suggest that when we assign feelings/emotions 'randomly' to a vignette, the expected linkage value from OLS regresssion is 5.3. We interpret that as:

The 5.3 is the expected percent of the time that a particular feeling/emotion will be selected when a particular element is present in the vignette. Based on the reasoning below, we expect to see linkages of 5-6 when there is a random linkage between an element and a feeling/emotion. We will look at linkages of 11 or higher as suggesting a non-random linkage between an element and a feeling/emotion.

1. *On average, each vignette comprises 3.75 elements, according to the experimental design, with ¾ of the vignettes comprising four elements, and ¼ of the vignettes comprising three elements.*
2. *There are 5 feelings/emotions.*
3. *There are thus a possible 3.75 * 5 or 18.75 opportunities for each of the 3.75 elements to be linked to each of the 5 feelings/emotions.*
4. *If everything were random, we would expect for 100 opportunities to see (100/18.75) or 5.3 opportunities for each element to be linked to each feeling/emotion.*
5. *Table 4.4 shows us that the foregoing calculations are on target for the average linkage of the 36 elements. However, we are dealing with data, so the individual elements show linkages which depart from the expected 5.3, although the averages are stable. If we were to repeat this simulation with another pattern, the five feelings/emotions in a different order but the pattern repeated in lockstep, we would see the same mean linkages, but different linkages for the elements*
6. *Given the foregoing demonstration, we will look at a linkage of 11 or higher as suggesting non-random linkage between an element and a feeling/emotion. This value of 11 is more than twice the expected linkage of 5.3, when that linkage is purely random.*

Table 4.4: Expected linkage between each of 36 elements each of five feelings/emotions (EM1 – EM5), when the elements are arrayed according to an experimental design (six silos, six elements/silo), when the selection of elements is purely random, and for the case of 311 respondents. The table gives a sense of what is to be expected, on average, for the linkage values. The values of the linkages are obtained from the Grand Model, where all 14,298 vignettes were assigned the feelings/emotions in a purely random manner.

	EM1	**EM2**	**EM3**	**EM4**	**EM5**
Summary statistics across 36 elements					
Mean	5.3	5.3	5.3	5.3	5.3
Std Dev	1.3	1.1	1.2	1.4	0.9
Max	8	8	8	8	7
Median	5	5	5	5	5
Min	2	3	3	1	3
Individual linkage of element and feeling/emotion					
A1	6	7	4	4	6
A2	7	5	6	4	6
A3	7	4	5	6	6
A4	6	5	5	5	5
A5	6	6	5	4	7
A6	6	7	4	5	4
B1	8	5	5	4	5
B2	4	7	7	4	5
B3	4	6	6	7	4
B4	7	5	6	4	6

B5	7	6	8	1	5
B6	5	8	5	4	5
C1	5	6	3	7	4
C2	7	6	3	5	6
C3	2	5	6	8	6
C4	6	4	4	7	5
C5	3	6	5	7	5
C6	6	6	3	6	6
D1	5	4	6	6	5
D2	4	7	5	5	5
D3	5	5	7	5	3
D4	6	5	7	5	5
D5	5	4	6	5	6
D6	7	4	5	5	6
E1	5	3	7	5	5
E2	5	5	6	4	6
E3	3	4	6	6	5
E4	5	5	5	5	5
E5	4	5	5	5	5
E6	6	4	4	5	5
F1	5	5	6	5	5
F2	4	6	4	6	7
F3	4	5	5	7	6
F4	4	4	7	8	4
F5	6	5	5	6	5
F6	6	6	4	5	7

Linking the elements to the five feelings/emotions (Table 4.5)

Now that we have the conceptual framework in place, we can look at the linkages between the elements and the five feelings/emotions. We followed the above-described steps, which generate the linkages appearing in Table 4.5.

With five feelings/emotions and with 36 elements, the amount of information to be processed by the reader is simply overwhelming. We have a total of 180 numbers, one number for each combination of element and feeling/emotion. The issue facing us is to discover patterns, if they exist, and where they exist.

We begin by arraying the results in a matrix, comprising five data columns (one per feeling/emotion) and 36 data rows (one per element). There is no natural way to order the data to reveal the patterns. For the total panel we will simply rank order the linkages, beginning with the feeling/emotion that we feel to be the strong, 'outraged.' Table 4.5 shows the five elements which generate linkages of 11 or higher between the element itself and the feeling/emotion 'outraged.' There are no other very strong linkages, when we operationally define a 'strong linkage' to be a linkage of 11 or high.

We move now to the next strongest feeling/emotion, at least subjective. This is 'Bothered.' We rank the remaining 31 elements in terms of their linkage with 'Bothered.' Table 4.5 shows these elements. Again we stop at the elements which score 11 or higher in their linkage with 'Bothered.' These high scoring linkages with Bothered range from element F6 (*The Plaintiff has fully recovered physically but continues to suffer from post-traumatic stress disorder after being pulled from the car just moments before it burst into flames)* to element C5 (*The collision occurred when the Defendant suddenly tried to cut across two lanes of traffic in the attempt to exit the freeway*). We then move to the third feeling/emotion 'Don't Care,' and then to the four 'Somewhat Satisfied,' and finally to the fifth feeling/emotion 'Contented.'

It is clear from Table 4.5 that there is no simple linkage between a feeling/emotion and an element. For example, what we feel to be the strongest feeling/emotion, 'Outraged,' links to a simple traffic violation by the defendant without any statement about what happened to the plaintiff (Immediately following the collision, in which the Defendant slammed into the rear of the Plaintiff's vehicle, the Defendant's blood alcohol level was double the legal limit). In turn, the same feeling/emotion, 'Outraged' links to a very severe accident *(The Plaintiff is now a quadriplegic permanently paralyzed from the neck down as a result of the collision).*

Not every element generates strong linkages to emotions/feelings. The 'emotionless' elements typically describe a defendant, or describe an action that is meaningless, in the context of an accident. Here are four of these relatively 'emotionless' elements.

1. *The Defendant is a black male, age 21, who was driving his personal car at the time of the collision*
2. *The Defendant is a publishing company senior executive driving a BMW 760Li Sedan*
3. *The Defendant is a 43 year old Hispanic male who was driving a work truck when the collision occurred*
4. *The Defendant acknowledged full responsibility at the scene of the collision and expressed remorse for what had happened*

Table 4.5: Linkages between the 36 elements from the automobile collision study and the five feelings/emotions. Linkages of 11 or higher are shown in bold type, with shaded cells.

		Outraged	Bothered	Don't Care	Somewhat Satisfied	Contended
C3	Immediately following the collision, in which the Defendant slammed into the rear of the Plaintiff's vehicle, the	**25**	5	-5	1	2

	Defendant's blood alcohol level was double the legal limit					
C1	The Defendant apparently crossed the center line of the highway into oncoming traffic while texting on a cell phone	**16**	9	0	0	0
F4	The Plaintiff is now a quadriplegic permanently paralyzed from the neck down as a result of the collision	**15**	**16**	-7	0	2
F2	The Plaintiff's left leg was amputated above the knee as a result of the collision	**11**	**15**	-4	4	1
D1	The Defendant had already been cited for this kind of conduct on two prior occasions in the last year and a half	**11**	8	1	3	2
F6	The Plaintiff has fully recovered physically but continues to suffer from post-traumatic stress disorder after being pulled from the car just moments before it burst into flames	0	**18**	4	4	1
F3	The Plaintiff has been diagnosed with mild traumatic brain injury as a result of the collision, and is still struggling with short-term memory deficits and depression	6	**17**	1	2	1
A1	The Plaintiff is a 21 year old female in her senior year of college, studying to be a teacher	1	**14**	6	6	1
A2	The Plaintiff, although originally from Mexico, has been in the United States for most of the last 23 years doing carpentry and painting work	1	**13**	7	4	4
D6	The Defendant admits to making bad choices as a driver but says those choices weren't what caused the collision	3	**12**	3	5	4
E6	Evidence indicates that the Plaintiff may have been driving in excess of the speed limit	-3	**12**	10	4	1
C2	Witnesses say the Defendant ran a red light while traveling at least 20 miles per hour above the speed limit	9	**12**	2	0	3
E5	At the time of the collision the Defendant was facing directly west into a setting sun, which may have impaired the Defendant's vision	-1	**12**	7	5	3
A3	The Plaintiff is a homemaker and mother of three children aged two through eleven	3	**12**	4	7	3
F1	The Plaintiff was taken to surgery twice and was hospitalized for five days following the collision, but is expected to make a full recovery	0	**12**	5	6	5
D2	Witnesses at the scene heard the Defendant saying the Plaintiff "deserved it" for being "a stupid driver"	10	**12**	2	0	2
E1	One witness at the scene says that the collision possibly could have been avoided if the Plaintiff had been paying more attention to the traffic	-2	**12**	9	5	2
C4	The Defendant appeared to swerve into the side of the Plaintiff's car while attempting a highway pass in the face of oncoming traffic	5	**12**	4	2	3
E2	The Defendant went to the hospital the day after the collision to check on the Plaintiff, and has expressed the desire now to do whatever is right for the Plaintiff	-4	**11**	6	7	5

E4	In the moments after the collision, while being extracted from the car, the Plaintiff kept repeating, "I'm sorry, I'm so sorry, it was an accident"	-2	**11**	9	7	2
E3	This is the third lawsuit of this type that the Plaintiff has filed	1	**11**	9	4	1
A5	The Plaintiff is 34 years old, unmarried and unemployed, but had been considering a return to school to obtain a high school GED	2	**11**	8	4	3
C5	The collision occurred when the Defendant suddenly tried to cut across two lanes of traffic in the attempt to exit the freeway	4	**11**	5	4	2
B1	The Defendant is a white male, age 30, who was traveling on business at the time of the collision	1	8	**11**	5	2
B4	The Defendant is a young white female who was driving a borrowed car with friends during a break from school	3	7	**11**	5	2
A4	The Plaintiff, age 16, had just obtained his driver's license two weeks prior to the collision	1	9	9	5	1
F5	The Plaintiff was released from the hospital after two days of observation, but continues to be treated by a chiropractor for back and neck pain	0	9	9	5	4
B6	The Defendant, age 55, is the minister of a large church and well known from television broadcasts	3	9	9	4	3
D4	The Defendant has admitted to being in a hurry before the collision because "I knew people were waiting for me"	7	6	8	4	1
A6	The Plaintiff owns and operates a small business with his wife, has one college-aged child, two grown children, and four grandchildren	2	8	7	8	3
B5	The Defendant is a publishing company senior executive driving a BMW 760Li Sedan	5	6	6	7	2
B2	The Defendant is a 43 year old Hispanic male who was driving a work truck when the collision occurred	3	8	5	7	4
D3	The Defendant acknowledged full responsibility at the scene of the collision and expressed remorse for what had happened	2	7	4	7	6
D5	The Defendant, who had just learned of a close friend's death, admits now to being too emotionally wrecked to be driving at the time of the collision	2	10	7	4	3
C6	The Defendant was attempting to make a left turn and failed to yield to the oncoming traffic	2	9	7	4	3
B3	The Defendant is a black male, age 21, who was driving his personal car at the time of the collision	5	8	7	4	2

Elements linking to 'Outrage' – Do subgroups respond the same way? (Table 4.6)

Now that we have a procedure to link together elements and feelings/emotions, let's explore on feeling/emotion in detail, 'Outrage.' Outrage is a very strong emotion. We know that some of the elements link strong to 'Outrage,' with these elements comprising both

traffic violations and actual severe injuries to the plaintiff. At least that's the case for the total panel of 311 respondents. But what about gender? Do males and females show similar patterns of Outrage. What about ethnic groups. The study comprises four ethnic groups in sufficient large numbers so that we estimate the linkage of element to Outrage, by ethnic group? We could look at the data from other key subgroups as well, such as age and income, but for right now it's sufficient to look at the linkages by gender and by ethnicity, respectively.

Our data appear in Table 4.6. When we look at the results, we get a sense that:

1. There are subgroup 'effects' that emerge clearly when we look at individual subgroups, but which get lost in the averaging. For example, look at the really strong linkages with Outraged in the total panel. We see five very strong linkages, from C3 (Immediately following the collision, in which the Defendant slammed into the rear of the Plaintiff's vehicle, the Defendant's blood alcohol level was double the legal limit) to F2 (The Plaintiff's left leg was amputated above the knee as a result of the collision). The other elements shown in Table 4.6 do link strongly to Outraged, but not among the total panel. Recall that we operationally define a strong linkage as a linkage of 11 or higher. *To reduce the amount of information, and to make the patterns more easy to grasp, we present only those elements with a linkage value above 11, i.e., 12 or more, for at least one feeling/emotion.*

2. When we look at males versus females, we find in general that the males are less outraged than are the females. The differences between males and females in the linkage of elements to Outraged are not constant. For example, there is one very big difference. Females are strongly outraged by the element: The Defendant apparently crossed the center line of the highway into oncoming traffic while texting on a cell phone. Males are not so outraged at all. On the other hand, there are elements showing virtually the same degree of linkage to Outraged: *The Defendant had already been cited for this kind of conduct on two prior occasions in the last year and a half*, and *The Plaintiff's left leg was amputated above the knee as a result of the collision.*

3. When we look at ethnicity, we again see differences. It's clear from Table 4.6 that the Asian respondents are the least outraged by the various elements, although there is one element which outrages the Asians, but no one else: *The Plaintiff has been diagnosed with mild traumatic brain injury as a result of the collision, and is still struggling with short-term memory deficits and depression*. The White respondents tend to be the most outraged. The Black and Hispanic respondents are in between.

4. The group to group differences in linkage of element to Outrage suggests general similarities, but not identical patterns. There is no clear pattern by subgroup about which element links to outrage. There are clear element to element differences, but no clear rule.

Table 4.6: Strong linkages between the feeling/emotion of 'Outrage' and elements, organized by key subgroup (gender, ethnicity). The table shows those elements which have a linkage value of at least 11 for the total panel or a key subgroup.

	Outrage	Total	Male	Female	White	Black	Hispanic	Asian
	Base size:	311	148	161	111	81	67	50
C3	Immediately following the collision, in which the Defendant slammed into the rear of the Plaintiff's vehicle, the Defendant's blood alcohol level was double the legal limit	**25**	**21**	**28**	**30**	**27**	**20**	**16**
C1	The Defendant apparently crossed the center line of the highway into oncoming traffic while texting on a cell phone	**16**	10	**21**	**24**	**14**	**12**	5
F4	The Plaintiff is now a quadriplegic permanently paralyzed from the neck down as a result of the collision	**15**	**13**	**17**	**16**	**11**	**24**	7
D1	The Defendant had already been cited for this kind of conduct on two prior occasions in the last year and a half	**11**	**11**	**12**	**14**	**15**	9	4
F2	The Plaintiff's left leg was amputated above the knee as a result of the collision	**11**	10	**12**	10	**11**	**16**	9
D2	Witnesses at the scene heard the Defendant saying the Plaintiff "deserved it" for being "a stupid driver"	10	10	9	9	**15**	8	4
F3	The Plaintiff has been diagnosed with mild traumatic brain injury as a result of the collision, and is still struggling with short-term memory deficits and depression	6	7	6	3	7	7	**13**

<u>Looking at Mind-set segments for linkages with 'Outraged' and 'Bothered' (Table 4.7)</u>

Now that we have a way to link together elements with feelings/emotions, let's apply the method to our two mind-set segments, Segment 1 being the Legals, and Segment 2 being the Empathics. These two mind sets respond strongly to the elements, but to different elements. Do they differ from each each in their selection of feelings/emotions.

Our strategy once again is to look at the strong linkages, again looking at elements with linkages above 11, i.e., 12 or higher, for at least one of the two segments. We look first at linkages with 'Outraged,' and then at linkages with 'Bothered.'

1. 'Outraged': For Legals, severe traffic violations both drive the selection of 'Outrage' and of severe punishment. For Empathics, it's the medical consequences which drive the selection of 'Outrage' and of severe punishment. Thus selecting the feeling/emotion 'Outrage' clearly parallels the pattern of strong punishment.
2. 'Bothered': There are a lot more elements which link to 'Bothered' than which link to 'Outraged.'' The linkages to 'Bothered' reverse the pattern of selections. Segment 1, the

Legals, is bothered by the medical aspects. Segment 2, the Empathic, is bothered by the traffic violations.

3. It appears as if 'Outraged' and 'Bothered' are duals of each other. The Legals select 'Outraged' for their response to clearly legal traffic violations, and then select 'Bothered' for their response to severe medical problems resulting from the traffic accident. The Empathics do just the opposite, selecting 'Outraged' for the severe medical problems resulting from the accident, and then selecting 'Bothered' for the clear traffic violations.

Table 4.7: Elements linking strongly to 'Outraged' and to 'Bothered.' The data comes from the linkage estimated separately for the two mind-set segments, the Legals (Segment 1), and the Empathics (Segment 2)

	Feeling/Emotion = Outraged	**Seg1 - Legals**	**Seg2 - Empathics**
C3	Immediately following the collision, in which the Defendant slammed into the rear of the Plaintiff's vehicle, the Defendant's blood alcohol level was double the legal limit	**30**	**21**
C1	The Defendant apparently crossed the center line of the highway into oncoming traffic while texting on a cell phone	**20**	**13**
F4	The Plaintiff is now a quadriplegic permanently paralyzed from the neck down as a result of the collision	**13**	**18**
C2	Witnesses say the Defendant ran a red light while traveling at least 20 miles per hour above the speed limit	**13**	7
F2	The Plaintiff's left leg was amputated above the knee as a result of the collision	**11**	**15**
	Feeling/Emotion = Bothered	**Seg1 - Legals**	**Seg2 - Empathics**
F4	The Plaintiff is now a quadriplegic permanently paralyzed from the neck down as a result of the collision	**17**	**12**
F2	The Plaintiff's left leg was amputated above the knee as a result of the collision	**15**	**14**
B6	The Defendant, age 55, is the minister of a large church and well known from television broadcasts	**13**	9
F3	The Plaintiff has been diagnosed with mild traumatic brain injury as a result of the collision, and is still struggling with short-term memory deficits and depression	**13**	**15**
F6	The Plaintiff has fully recovered physically but continues to suffer from post-traumatic stress disorder after being pulled from the car just moments before it burst into flames	**12**	**15**
D5	The Defendant, who had just learned of a close friend's death, admits now to being too emotionally wrecked to be driving at the time of the collision	**11**	**13**
C2	Witnesses say the Defendant ran a red light while traveling at least 20 miles per hour above the speed limit	10	**13**
D6	The Defendant admits to making bad choices as a driver but says	9	**13**

	those choices weren't what caused the collision		

Do emotions co-vary with punishment? (Table 4.8)

We finish this chapter with a new look at the relation between the severity of punishment (question #1) and the presence/absence of elements. There are two new things that we introduce here. The first is that we create the models for punishment using all the relevant vignettes, independent of respondent. This is the so-called Grand Model. The second is that we divide the vignettes into five groups or piles, one group for the vignettes associated with each of the five feelings emotions. Thus the column 'Outraged' presents data from only those vignettes associated with the selection of 'Outraged' in question #2.

Looking at Table 4.8 we see first the percent of respondents who would assign the two most severe punishments (punishments with values 6 and 7 on the 7-point punishment scale in question #1).

1. We have to use the Grand Model because the 'cases' or vignettes in each group are those linked with one of the five feelings/emotions. The individual-level experimental design no longer applies, because a respondent who selects several different feelings/emotions, depending upon the vignette, will have his vignettes allocated to different groups, depending upon the particular feeling/emotion selected for a particular vignette.

2. The results from the Grand Model are always close to the results from the average of the individual models, but there are slight differences.

3. When we look across the columns, we see that the biggest effect comes in terms of basic severity; the additive constant, the expected percent of respondents who would assign the most severe punishments (6 and 7), in the absence of additional messaging. The highest basic severity occurs, not unexpectedly, when the respondent says he feels 'Outraged' after reading a vignette. The lowest basic severity occurs, again not unexpectedly, when the respondent says he 'Doesn't Care' after reading the vignette.

4. It is when the respondent says he feels 'Outraged' where we have a number of strong performing elements, i.e., those generating an additional 11 points on the scale. These 11 points correspond to an additional 11% of the respondents selecting a strong punishment. Thus, when the respondent says he feels outraged, get ready for more respondents punishing more severely, and more elements driving additional severe punishment.

5. Finally, when the respondent says he 'Doesn't Care,' we have both low basic likelihood of assigning a severe punishment, and only two elements which drive additional severe punishment.

Table 4.8: Grand Models showing how elements drive 'severe punishment' (question #1). The dependent variable is choosing 6-7 on the 7-point punishment scale. The Grand Model was computed for the total panel, and then separately for five groups of vignettes, each of the groups linked to one of the five feelings/emotions.

		Total	Outraged	Bothered	Don't Care	Satisfied	Content
		Severity of punishment (top2 box, ratings 6-7 →100)					
	Additive constant	26	60	31	7	14	31
F4	The Plaintiff is now a quadriplegic permanently paralyzed from the neck down as a result of the collision	**35**	**20**	**33**	**18**	**30**	**38**
F2	The Plaintiff's left leg was amputated above the knee as a result of the collision	**28**	**20**	**24**	**12**	**16**	**32**
C3	Immediately following the collision, in which the Defendant slammed into the rear of the Plaintiff's vehicle, the Defendant's blood alcohol level was double the legal limit	**24**	**16**	**12**	2	**15**	**21**
C1	The Defendant apparently crossed the center line of the highway into oncoming traffic while texting on a cell phone	**17**	10	**13**	4	10	**16**
F3	The Plaintiff has been diagnosed with mild traumatic brain injury as a result of the collision, and is still struggling with short-term memory deficits and depression	**15**	**12**	**13**	9	**14**	**17**
D1	The Defendant had already been cited for this kind of conduct on two prior occasions in the last year and a half	**12**	10	8	3	10	6
C2	Witnesses say the Defendant ran a red light while traveling at least 20 miles per hour above the speed limit	**11**	**11**	7	1	7	**13**

Part II
Cases

Chapter 05 – Arson & Murder

Introduction to the case - *the Mark Gibson arson / murder case*

At approximately 4:00 a.m. on November 13, 1999, fire swept through an old wood-frame house that had been converted to an apartment building. When firefighters arrived, they found that a husband and wife had escaped from one of the upstairs apartments by jumping with their baby from a second-floor window. Janie Rios, a young mother with children, was suspected to still be trapped in another upstairs apartment. The front stairway of the old house was on fire, so the firefighters tried to make a rescue up the back stairs. The rescue failed. There had originally been a back door leading from Janie Rios' apartment to the back stairs, but that door had been sealed shut and concealed by wall paneling before she moved in. Janie Rios and her baby daughter Abby died in their bathroom trying to hide from the fire.

1. Fire investigators quickly determined that the fire had been intentionally set. Some type of accelerant had been poured and lit on fire at the bottom of the front stairs leading up to the apartments of the two young families. Unfortunately, there was no physical Three of the four witnesses came from one family – two brothers and a sister.
2. It turns out that one of the brothers, Armando Castillo, is the same informant who, in 2002, had reported hearing self-incriminating statements from another suspect, Steven.
3. Armando is a convicted felon.
4. At the time Armando Castillo reported to police in 2006 that Mark had claimed responsibility for setting the fire,
5. Armando was again under arrest, for robbery.
6. Armando says Mark had admitted years before, shortly after the fire, to burning down the house. According to Armando, this admission by Mark occurred while Mark, Armando, and Armando's sister Valerie were drinking and inhaling paint thinner.
7. Valerie corroborated Armando's story. She says Mark told them he burned down the house so he could get his two boys back.
8. Valerie says she waited seven years to report Mark's admission because she was afraid of Mark.
9. Another brother, Orlando Castillo, also says that Mark has admitted setting the fire.
10. Like Armando, Orlando is a convicted felon and, in 2006, was under arrest for robbery.
11. Orlando says that Mark claimed responsibility for the fire when Orlando was put in the same jail cell with Mark and twenty other prisoners for one night in 2006.
12. Additionally, a fourth witness named Bradley Saurez reports that Mark has claimed responsibility for the fire.
13. Like Armando and Orlando, Bradley is a convicted felon.
14. Bradley says that Mark threatened to "trap" Bradley "the same way he [Mark] trapped is own ex-wife" if Bradley didn't pay $25 he owed to Mark.
15. At trial, all four of the witnesses against Mark deny that their testimony results from any deal with prosecutors. They each say they have now come forward because it's the right thing to do.
16. He denies having ever said anything to the contrary.
17. Mark professes his innocence. evidence pointing to a suspect.

In 2002, almost three years after the crime, police heard through an informant that a man by the name of Steven was making statements suggesting had been present at the fire. Steven moved to the top of the suspect list. Police prepared a warrant for his arrest. However, after running a computer check into Steven's criminal background, it appeared to the investigating officer that Steven was in prison on the date of the fire. Police dropped Steven as a suspect, and the arrest warrant was never executed. (Police say now that current computer records do not show Steven being in prison at the time of the fire, but it is unclear whether Steven was ever investigated further.) The criminal investigation again faltered, apparently without leads. Then finally, in 2006, Mark Gibson became the primary suspect.

Mark Gibson had once been married to Janie Rios. Janie and Mark had two sons before they divorced. Janie was granted primary custody of the preschool-aged boys after the divorce. Janie's daughter Abby had been born after the divorce, fathered by someone other than Mark. On the night of the fire, the two boys happened to be staying with Janie's mother. Only Janie and Abby were at home in the apartment.

The police heard from informants in 2006 that Mark had bragged about how he killed Janie. Until that point in time, the investigating officer had thought it was highly unlikely that Mark was responsible for the fire. Ultimately four witnesses reported hearing these statements from Mark.

The case against Mark has been tried twice, to two different juries, first in August 2007, and then again in February 2008. The first trial resulted in a hung jury when jurors could not reach a unanimous verdict. In the second trial, prosecutors again sought a conviction, asking for a life sentence without chance for parole.

After the verdict was rendered in the second case, we decided to compile and perform RDE testing of the evidence and arguments that the second jury heard, in order to understand what statements likely had the greatest impact on jurors. With that information in hand, we then wanted to see if whether there was any difference in the evidence presented in the two trials which might explain why the second jury was able to reach a conclusion that the first jury could not.

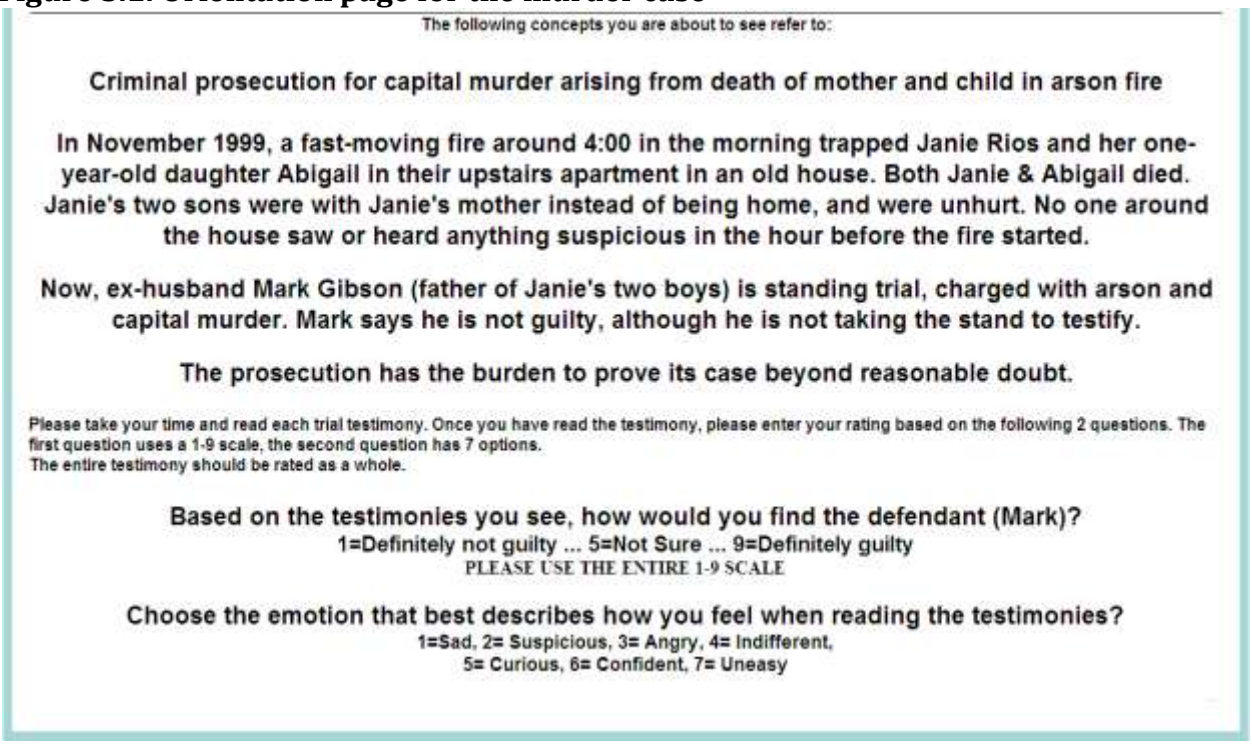
Interestingly, after doing our RDE testing, we found that some of the evidence with the greatest likely impact had in fact been heard by the second jury only, and not by the first jury.

Learning from the RDE results

We now move from discussing the facts of the case to the data provided by respondents, who evaluated different combinations of statements. To reiterate, the 'electronic jurors' did not listen to a recitation of the case as would happen in a court. Rather, the 'electronic jurors' evaluated 48 short vignettes, each vignette telling part of the story. These 'electronic jurors' are our respondents in the test.

We begin with the orientation page, describing the specifics of the case (Figure 5.1). The orientation page provides a 'reasonable' amount of detail about what happened, sufficient to communicate but (hopefully) absent information that would lead to a verdict. It is the elements which must drive the verdict, not the orientation page.

Figure 5.1: Orientation page for the murder case



We continue now with an example of what the respondent saw. The elements are presented in stacked, order, without connectives. The rating scale is on the bottom. Figure 5.2 shows us a four element vignette with question #1 on the bottomt (not guilty versus guilty). Figure 5.3 shows us the same four element vignette, this time with question #2 on the bottomt (select the feeling/emotion).

Figure 5.2: Four element vignette for the arson/murder case, showing question #1 on the right (not guilty versus guilty).

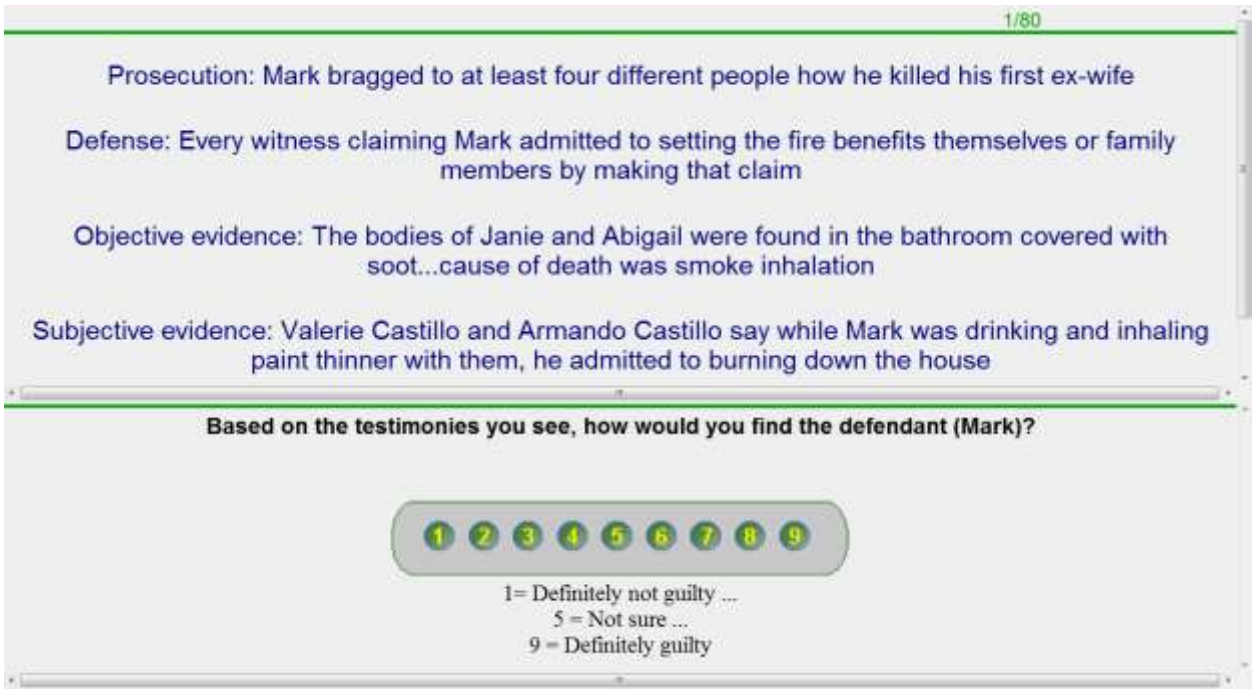
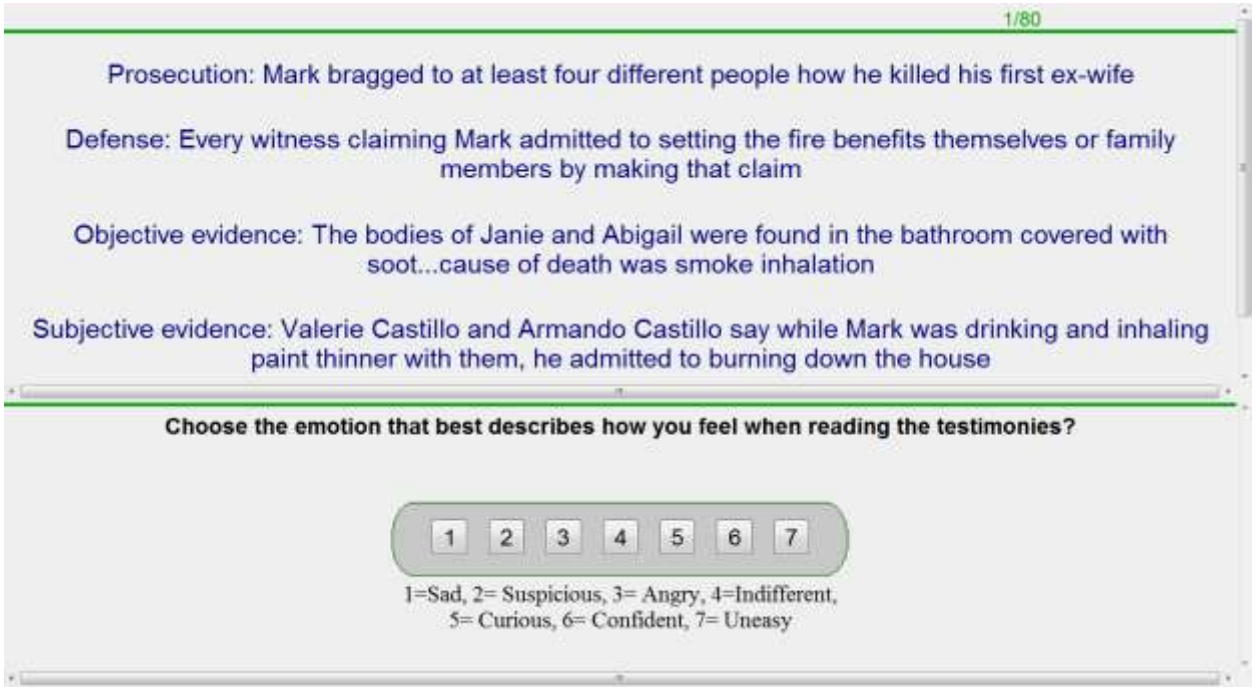


Figure 5.3: The same four element vignette for the arson/murder case, this time showing question #2 on the right (select the feeling/emotion from a set of seven alternatives).



How do respondents feel (Table 5.1)?

In total, we worked with 150 respondents by Internet, using the RDE procedures described in the introductory chapters. We began with six silos of elements, each silo

comprising six elements. Each of our respondents evaluated a unique set of 48 vignettes, featuring every element appearing five times, and absent 43 times. For each respondent, as well as for the total panel, we created the INT model, relating the presence/absence of the 36 elements to the likelihood of assigning a guilty rating 7-9 on the 9-point scale.

We begin our analysis of the RDE data with a simple count of the ratings. We are dealing here with a murder case. What are the predominant ratings? And the predominant feelings/emotions? Our answer appears in Table 5.1:

1. The modal response for question #1, not guilty versus guilty, is 5, halfway between. Given a chance to equivocate, respondents do.

2. Respondents do vary their ratings of not guilty versus guilty, so we are dealing with a case where the information makes a great deal of difference.

3. The model response for question #2, select the feeling/emotion, is the negative 'suspicious' (28% of the vignettes), followed by positives 'indifferent' (20%) and curious (18%).

4. We see more votes towards 'guilty' than towards 'not guilty.' In general the facts as presented suffice to convince the respondent of the defendant's guilt, but not all the time.

.**Table 5.1: Distribution of ratings for not guilty versus guilty (question #1), and the selection of feelings/emotions (question #2). The data comes from the 7200 vignettes, 48 vignettes rated by each of 150 respondents.**

Q1	%		Q2	%
1	5%		Suspicious	28%
2	6%		Indifferent	20%
3	7%		Curious	18%
4	8%		Confident	11%
5	32%		Sad	8%
6	12%		Angry	8%
7	11%		Uneasy	6%
8	9%			
9	11%			

<u>Transforming the data and creating the INT (Interest Model) for 'guilty'</u>

Rather than working with the original 9-point scale for degree of guilt, we modified the scale so that it became a binary scale, of no guilt or weak guilt (original ratings 1-6, now transformed to 0), versus strong guilt (original ratings 7-9, now transformed to 100).

We transformed the ratings, created the individual-level models (called INT or interest models), and averaged the corresponding parameters across the 150 respondents.

What elements 'drive' to the verdict of guilty? (Table 5.2)

We begin the formal analysis of the data by looking at the relation between the 36 elements and the rating of guilty, using the INT model.

1. The additive constant is 23. This means that in the absence of any elements, about 23% of our respondents, our 'electronic jurors' would rate a vignette 7-9, i.e., deem the defendant to be guilty.

2. We have sorted the impact values within each silo, to get a sense of how strongly the elements in the silo drive towards the guilty verdict.

3. Looking across the entire table, we find both positive and negative impacts, meaning that an element can drive the guilty verdict, or drive a respondent away from the guilty verdict.

4. There are no very strong drivers towards guilty, nor strong drivers away from guilty.

5. A rule of thumb us that impacts of 5+ are significant, but we should be looking for impacts of 10+ as breakthrough arguments. We have a number of elements with impacts of 5+, which can be said to be statistically significant (i.e., above 0), but for the total panel we have no breakthrough statements, which strongly drive the guilty verdict.

6. *The strongest performing elements come from different silos*. The rating of guilty does not dependent upon strong performance in only one area. Several different types of statements drive the guilty verdict.

7. The three strongest performing elements are:
    a. *Prosecution: Mark bragged to at least four different people how he killed his first ex-wife (impact = +8)*
    b. *Subjective evidence: Valerie Castillo says Mark told her he burned down the house so he could get his boys back, and she says she waited seven years to report the crime because she was afraid of him (impact = +7)*
    c. *Other information: Bradley Sauro, a convicted felon, says Mark threatened to trap Bradley the same way he (Mark) trapped his own ex-wife if Bradley didn't pay $25 he owed (impact = +7)*

8. Those elements pushing away from the guilty verdict show impacts of -2, i.e., are really 0.

9. Summing up: RDE suggests a modest propensity to assign the guilty verdict (additive constant = 10), and the need to marshall a combination several arguments, each of

modest impact (around +6 to +7). There are no single 'breakthrough' arguments which strongly drive the guilty verdict.

Table 5.2: Murder case – the INT Model for the total panel

	Murder Case: INT Model (top 3 box) for the total panel	
	Additive constant	23
	Silo 1: Prosecution Framing Statements	
A4	Prosecution: Mark bragged to at least four different people how he killed his first ex-wife	8
A2	Prosecution: Prior police reports from Mark's own mother and from Mark's second ex-wife show he has threatened to kill them	6
A3	Prosecution: Mark's mother and Mark's second ex-wife changed their stories to provide an alibi for Mark	5
A6	Prosecution: Mark has admitted to killing his ex-wife because he thinks he's safe...he's already gotten away with it	4
A1	Prosecution: Mark killed Janie to get his two boys back from her and not pay child support to Janie	3
A5	Prosecution: Mark should not get off simply because the fire destroyed all the physical evidence...Mark's own admissions are the best evidence	3
	Silo 2: Defense Framing Statements	
B2	Defense: Police never finished checking alibis of the men who were dating Janie before her death	0
B4	Defense: There is no physical evidence of any dispute or legal battle between Mark and Janie at the time of her death	0
B3	Defense: During a bar fight shortly before her death, Janie cracked a man in the forehead with a pool cue...and before the fire that man asked people where Janie lived	-1
B5	Defense: Investigating police officer reported shortly after the fire that Janie had "numerous enemies" and "a history of disputes with boyfriend(s)"	-1
B1	Defense: There's no way Mark would have set fire to a house when he believed his own sons, aged 5 and 3, were sleeping there	-2
B6	Defense: Every witness claiming Mark admitted to setting the fire benefits themselves or family members by making that claim	-2
	Silo 3: Objective Evidence	
C5	Objective evidence: Mark owed Janie more than $10,000 in back child support at the time of Janie's death	6
C3	Objective evidence: When firemen arrived, the front stairs were on fire, so they tried to make a rescue up the back stairs...the apartment's back door was sealed shut from the inside	2
C2	Objective evidence: Arson investigators agree the fire was intentionally set by lighting the front stairs of the house...but no physical evidence to suggest who set the fire	1
C1	Objective evidence: The house was divided into three apartments, with different people living in each one...it's hard to know if one person in particular was a target	0

C4	Objective evidence: The bodies of Janie and Abigail were found in the bathroom covered with soot...cause of death was smoke inhalation	0
C6	Objective evidence: Janie's cousin went to Mark's house where Mark lived with his mother and second wife to tell them of the fire...and found Mark at home in bed asleep	-2
	Silo 4: Subjective Evidence	
D1	Subjective evidence: Valerie Castillo says Mark told her he burned down the house so he could get his boys back, and she says she waited seven years to report the crime because she was afraid of him	7
D3	Subjective evidence: Valerie Castillo and Armando Castillo say while Mark was drinking and inhaling paint thinner with them, he admitted to burning down the house	6
D2	Subjective evidence: Three witnesses who now claim Mark confessed to setting the fire are all part of one family - brothers Armando and Orlando Castillo and sister Valerie Castillo	5
D4	Subjective evidence: Armando Castillo told police in 2006 that Mark had admitted setting the fire, although he had previously told police in 2002 that someone else had admitted to it	5
D6	Subjective evidence: Orlando Castillo says Mark admitted to burning down the house when Orlando was in the same jail cell with Mark and twenty other prisoners for one night	5
D5	Subjective evidence: Two of the witnesses against Mark, brothers Armando and Orlando Castillo, have been to prison before, and are currently under arrest for robbery	0
	Silo 5: Moral and Social Factors	
E1	Other information: Bradley Sauro, a convicted felon, says Mark threatened to trap Bradley the same way he (Mark) trapped his own ex-wife if Bradley didn't pay $25 he owed	7
E3	Other information: Mark's mother denies ever being afraid of Mark...but she previously reported to the police that Mark was mad at her and had threatened to burn her house down	6
E2	Other information: All of the witnesses against Mark, who claim they heard him admit in the past to setting the fire, say they now come forward because it's the right thing to do	5
E5	Other information: Mark's second ex-wife reported to police that Mark threatened to kill everyone in her house when she left him...but she now says she was mad and lied in that report	4
E4	Other information: Mark's second ex-wife, who says Mark was with her the night of the fire, reported once that Mark beat her until she collapsed...but she denies being afraid of him	2
E6	Other information: Mark's second ex-wife says Mark would never hurt kids	0
	Silo 6: Collateral Factors	
F2	Other information: Abigail was born to Janie after Janie's divorce from Mark...and Mark was not her father	1
F4	Other information: The investigating officer originally prepared an arrest	1

	warrant for another suspect...until he discovered that the other suspect was probably in jail at the time of the fire	
F6	Other information: The family living in the other upstairs apartment survived the fire by jumping out of a second-floor window with a baby	0
F5	Other information: Janie was actually still friends with Mark's mother after Janie's divorce from Mark...and would sometimes leave her boys with Mark's mom for babysitting	-1
F1	Other information: There had originally been a back door out of Janie Rios' apartment...but that door had been concealed by wall paneling before she moved in	-2
F3	Other information: Until witnesses said years later that Mark had admitted to setting the fire, the investigating officer thought it was highly unlikely that Mark was responsible	-2

How do emotions link with elements (Table 5.3)?

Let's move on from what drives the verdict of guilty to what emotions come into play. In the chapter on dealing with emotions (Chapter XX), we discussed how to move from the selection of feelings/emotions to quantifying how each element drives each feeling/emotion. That is, we can move deeply into the mind of the respondent, to identify not only how the elements drive a verdict, but in some sense the respondent's 'sentiment.' Of course we are limited to the seven feelings/emotions that we studied here, ranging from sad to uneasy. Nonetheless, even with this limited set we can get a sense of the sentiment attached to each element.

Our basic data from the total panel appears in Table 5.3. We show only those linkages with values of 11 or more. We know that on a purely random basis, if there were no strong linkage between element and feeling/emotion, we expect to have linkage values of (100 percent)/(3.75 elements/vignette x 7 feelings/emotions). That ratio is 3.8. To make our analysis easy we will look at linkages of 8 or higher, a cutoff sufficiently high to make us confident that the results are not random.

The key finding from our linkages is the overwhelming selection of 'suspicion' as the strongest linking feeling/emotion. However, the linkage of element with 'suspicion' is not complete. There are many elements which do not link strongly to 'suspicion,' however, none worth further discussion because of very low linkages to all the feelings/emotions.

Table 5.3: Linkage of elements to the seven feelings/emotions. The table shows only those 'strong linkages,' operationally defined as a linkage value of 8 or higher, sufficiently high to warrant confidence that there is a strong linkage.

		Sad	Suspicious	Angry	Indifferent	Curious	Confident	Uneasy
A2	Prosecution: Prior police reports from Mark's own mother and from Mark's second ex-wife show he has threatened to kill them	2	**11**	2	3	3	3	3
D5	Subjective evidence: Two of the witnesses against Mark, brothers Armando and Orlando Castillo, have been to prison before, and are currently under arrest for robbery	1	**11**	1	6	5	2	1
B6	Defense: Every witness claiming Mark admitted to setting the fire benefits themselves or family members by making that claim	3	**11**	0	6	6	1	1
D2	Subjective evidence: Three witnesses who now claim Mark confessed to setting the fire are all part of one family - brothers Armando and Orlando Castillo and sister Valerie Castillo	1	**10**	2	4	4	1	3
A3	Prosecution: Mark's mother and Mark's second ex-wife changed their stories to provide an alibi for Mark	2	**10**	2	5	4	4	1
A4	Prosecution: Mark bragged to at least four different people how he killed his first ex-wife	3	**9**	3	4	2	4	1
E5	Other information: Mark's second ex-wife reported to police that Mark threatened to kill everyone in her house when she left him...but she now says she was mad and lied in that report	2	**9**	3	3	4	0	2
A1	Prosecution: Mark killed Janie to get his two boys back from her and not pay child support to Janie	3	**9**	3	5	1	4	2
B2	Defense: Police never finished checking alibis of the men who were dating Janie before her death	1	**9**	1	6	6	2	1
E1	Other information: Bradley Sauro, a convicted felon, says Mark threatened to trap Bradley the same way he (Mark) trapped his own ex-wife if Bradley didn't pay $25 he owed	1	**8**	3	3	4	4	3
D1	Subjective evidence: Valerie Castillo says Mark told her he burned down the house so he could get his boys back, and she says she waited seven years to report the crime because she	0	**8**	3	3	5	3	2

	was afraid of him							
C5	Objective evidence: Mark owed Janie more than $10,000 in back child support at the time of Janie's death	2	**8**	4	3	4	3	3
E2	Other information: All of the witnesses against Mark, who claim they heard him admit in the past to setting the fire, say they now come forward because it's the right thing to do	1	**8**	2	4	4	2	3
A5	Prosecution: Mark should not get off simply because the fire destroyed all the physical evidence...Mark's own admissions are the best evidence	2	**8**	2	5	4	5	1
F5	Other information: Janie was actually still friends with Mark's mother after Janie's divorce from Mark...and would sometimes leave her boys with Mark's mom for babysitting	2	**8**	1	7	7	4	-1
F3	Other information: Until witnesses said years later that Mark had admitted to setting the fire, the investigating officer thought it was highly unlikely that Mark was responsible	2	**8**	-1	**8**	**8**	3	0
F4	Other information: The investigating officer originally prepared an arrest warrant for another suspect...until he discovered that the other suspect was probably in jail at the time of the fire	2	7	1	**8**	5	2	2

Do emotions drive guilty? (Table 5.4)

Now that we have established the existence of linkages between elements and the decision to find Mark, the defendant, guilty, we can ask whether having a negative feeling/emotion when reading a vignette co-varies with the likelihood of assigning a high rating on the guilt scale (question #1).

Our method to establish a relation between feelings/emotions and overall ratings was explained in Chapter XX. We simply divide our 7200 vignettes into two piles or groups, one pile corresponding to all vignettes associated with the four negative feelings/emotions (sad, suspcious, angry, uneasy) and the three other feelings (indifferent, curious, confident). We then run the Grand Model for the Top3 box (ratings 7-9 →100) three times:

a. Total panel (all vignettes)
b. Vignettes generating a negative feeling
c. Vignettes generating a positive or other feeling

For our workhorse regression (OLS), we estimate the impact values by running the Grand Model because we can no longer create a guilt model for question 1 (INT), at the level of the individual. The experimental design carefully crafted for each individual requires that individual to evaluate all 48 vignettes assigned to him. When we select vignettes on the basis of their associated feelings/emotions, we may destroy the experimental design for the individual. The Grand Model eliminates this worry by combining all the data into one group, and making one pass through the data.

After our preparations we end up with the data in Table 5.4. The table shows only those elements with impact values for guilty of 6 or higher, for either the total panel or either of the two key subgroups (those vignettes eliciting negative feelings/emotions, those vignettes eliciting other feelings/emotions).

Our results suggest that:

1. The additive constant, the proclivity to find Mark guilty in the absence of elements, ends up being 22 for the Grand Model, meaning about one in five respondents is likely to rate the vignette 7-9 in the absence of elements. When we deal with those vignettes eliciting a negative feeling/emotion, the additive constant rises to 30, meaning there is a greater likelihood that the respondent will select 7-9. When we deal with those vignettes eliciting a positive or neutral feeling/emotion, the additive constant drops down to 16. We conclude, therefore, that there is a co-variation of basic predisposition to judge the defendant guilty when the vignette is perceived to elicit a negative emotion. *(Parenthetically, this analysis is called R-R, response-response. We attempt to establish a pattern between one response, ratings of guilty, and another response, selection of feeling/emotion).*

2. When we look at the individual elements, we find that the vignettes eliciting negative feelings/emotions are characterized by lower impact values, i.e., lower ratings of guilt. The vignettes eliciting other feelings/emotions are characterized by higher impact values.

3. We see two very strong performing elements, performing strongly only in vignettes eliciting 'other,' feelings/emotions.

   Prosecution: Mark bragged to at least four different people how he killed his first ex-wife

   Subjective evidence: Valerie Castillo says Mark told her he burned down the house so he could get his boys back, and she says she waited seven years to report the crime because she was afraid of him

4. We see no strong performing elements associated with vignettes eliciting negative feelings/emotions

5. We conclude that the basic effect of a negative feeling/emotion is on the additive constant, the general proclivity to increase the rating of guilty, and not on the impact of the individual messages.

Table 5.4: How elements drive the rating of 'guilty,' when these elements are associated with vignettes eliciting a negative feeling/emotion, versus when the elements are associated with vignettes eliciting a positive or neutral (other) feeling/emotion. Only strongly performing elements for any group are shown in the table.

		Total	Negative	Other
	Additive constant	22	30	16
A4	Prosecution: Mark bragged to at least four different people how he killed his first ex-wife	8	5	10
D1	Subjective evidence: Valerie Castillo says Mark told her he burned down the house so he could get his boys back, and she says she waited seven years to report the crime because she was afraid of him	7	4	9
E1	Other information: Bradley Sauro, a convicted felon, says Mark threatened to trap Bradley the same way he (Mark) trapped his own ex-wife if Bradley didn't pay $25 he owed	7	5	8
A2	Prosecution: Prior police reports from Mark's own mother and from Mark's second ex-wife show he has threatened to kill them	6	4	7
C5	Objective evidence: Mark owed Janie more than $10,000 in back child support at the time of Janie's death	6	7	3
D3	Subjective evidence: Valerie Castillo and Armando Castillo say while Mark was drinking and inhaling paint thinner with them, he admitted to burning down the house	6	5	7
E3	Other information: Mark's mother denies ever being afraid of Mark...but she previously reported to the police that Mark was mad at her and had threatened to burn her house down	6	5	5
A3	Prosecution: Mark's mother and Mark's second ex-wife changed their stories to provide an alibi for Mark	5	2	8
D2	Subjective evidence: Three witnesses who now claim Mark confessed to setting the fire are all part of one family - brothers Armando and Orlando Castillo and sister Valerie Castillo	5	4	6
D4	Subjective evidence: Armando Castillo told police in 2006 that Mark had admitted setting the fire, although he had previously told police in 2002 that someone else had admitted to it	5	4	6
D6	Subjective evidence: Orlando Castillo says Mark admitted to burning down the house when Orlando was in the same jail cell with Mark and twenty other prisoners for one night	5	4	6

E2	Other information: All of the witnesses against Mark, who claim they heard him admit in the past to setting the fire, say they now come forward because it's the right thing to do	5	3	7
A6	Prosecution: Mark has admitted to killing his ex-wife because he thinks he's safe...he's already gotten away with it	4	0	8
A5	Prosecution: Mark should not get off simply because the fire destroyed all the physical evidence...Mark's own admissions are the best evidence	3	-1	7

Another perspective – wrongful convictions, ethics, and the role of RDE

After looking at that evidence, we want to turn to a key question, one of ethics rather than science. If RDE testing can suggest what evidence will have the most impact with a jury, is it right to use RDE testing *before* trial to help guide and shape the way in which facts are presented to a jury? To begin answering that question, we start with another question we often hear asked of criminal defense attorneys: "How can you defend someone who is guilty?"

Wrongful convictions

Based on our belief in law enforcement, as well as our recognition of high conviction rates, we admit to assuming that the great majority of criminal defendants have indeed committed the crime for which they're charged. And presumably, despite the facts, a large percentage of these defendants nevertheless profess their innocence. If these presumptions are true, is it right to use RDE testing to help defeat the government's case, or to put it another way, "*How can you defend someone who is guilty?*"

Of course, that question implies that defense attorneys should be weighing the evidence in each case and personally deciding on their client's guilt or innocence in order to decide whether defend, if so, then how to defend. And that brings us to a phenomenon of the last two decades – the opportunity to reopen certain kinds of criminal convictions and scientifically test the validity of those convictions with DNA testing procedures that weren't available in the original trial.

With the advent of DNA testing, we've seen hundreds of convictions overturned in the last few years based on reexamined evidence pointing to someone else, despite eye witness identifications and/or persuasive circumstantial evidence in most of those convictions. Those are cases (mostly rapes and murders) where evidence with DNA was originally collected and can still be retrieved for testing, years after the conviction. Presumably there are some numbers of wrong convictions in other types of crimes as well, crimes where DNA evidence is unavailable. Although we believe law enforcement usually gets it right, here's the rub – eye witness testimony and/or good circumstantial evidence sometimes point to the wrong person.

> *Vincent Moto was wrongly convicted of rape and spent over ten years in prison in Pennsylvania. He says his four children suffered psychologically during his ordeal. "It destroyed my family. It cost me over $100,000 to get exonerated. That was my mom*

*and dad's money to retire. They're struggling. I'm struggling."**(There was a footnote mark here but no text)***

Nick Yarris was a drug addict already jailed on a different matter when he was charged with the rape and murder of a young woman. He spent more than 21 years on death row, fighting against the loss and destruction of evidence, before DNA testing of the last available evidence finally proved his innocence.

Jeffrey Todd Pierce had no convictions until he was wrongly convicted of rape in Oklahoma, at age 24. His wife divorced him and his twin sons grew up without him. It took 15 years for the truth of his innocence to come out.

Tim Kennedy was convicted of a double murder in Colorado and served 14 years. He pursued his release based on ineffective assistance of counsel before DNA evidence showing a match with someone else led to his release on bail pending retrial.

During the first four years of Ben Salazar's imprisonment, his wife Christina brought their three children to prison to see him. He finally became convinced that she couldn't continue coping with his conviction and imprisonment. He told her to go on with her life, and she obtained a divorce. They had been childhood sweethearts.

Steve Linscott fared better. He was convicted of murdering a young woman in Chicago. His wife and children moved to southern Illinois, near the prison, and waited for him. He served more than three years before he was exonerated by DNA testing.

Lesly Jean is a former Marine who was wrongly imprisoned in North Carolina for a rape he did not commit. Byron Halsey spent almost 25 years in prison after being wrongfully accused of raping and murdering two children in New Jersey.

Richard Danzinger was wrongly convicted in Texas, served 11 years, and suffered permanent brain damage when his head was bashed in by another inmate.

Ronald Williamson, a former minor-league ballplayer, served 11 years in prison and came within five days of being executed for a murder and rape he didn't commit.

Out of the first 20 Dallas County convictions overturned by DNA testing, 19 involved erroneous eyewitness identifications. One murder case had no eyewitnesses.**(Endnote marked here leading to Figure 6.9)** Nationally, eyewitness misidentification has been involved in more than 75% of the cases overturned by later DNA testing. In more than 15% of cases subsequently proven wrong by DNA testing, an informant or "jailhouse snitch" testified against the defendant. **(Endnote marked here that was the text for the rest of the document)**

Ethics

Although retesting of DNA evidence has invalidated hundreds of wrongful convictions, there are no doubt significant numbers of other wrongful convictions, also

based on the testimony of eyewitnesses and informants, which have no surviving DNA evidence to examine. That raises a natural question *... If lawyers for all of these wrongfully convicted defendants had been weighing the evidence in the same way that the juries did, would the defendants' own lawyers have been inclined to believe – understandably but erroneously – that their clients were probably guilty?* And, whether they did or not, is that the way it *should* work?

We posed these questions to Mark Osler, whose diverse criminal law background makes him uniquely well-suited to provide insight. Mark is a graduate of Yale Law School and a former Federal prosecutor from Detroit, a published scholar in the field of professional responsibility and ethics, and now a professor teaching criminal law and procedure at Baylor Law School. He has represented criminal defendants on appeals to the various federal circuit courts and to the U.S. Supreme Court. He has testified before Congress on the issue of sentencing juveniles to life sentences without the possibility of parole.

> *"I certainly wouldn't suggest that most convictions are wrong. I believe that the police and prosecutors generally get it right. But 'generally' isn't good enough. That's why we have such a high burden of proof for criminal convictions.*
>
> *"If I were ever wrongfully charged with a crime, I don't want my lawyer struggling to decide whether he should believe me or not. That's not his moral or ethical duty. In fact, that's the opposite of his ethical duty. I want an attorney who is taking the facts, and who is choosing to believe me, or at least choosing to believe wholeheartedly in my defense. I want someone absolutely committed to giving me the best possible defense within the facts. It's the only way the system works.*
>
> *"I don't want a lawyer who says – based on some apparent 'eyewitness' identification or circumstantial evidence – 'well, he's probably guilty.'"*

The role of RDE

RDE jury testing is designed to identify what is likely to be most effective with a jury, out of the mass of potential evidence and arguments. What can a lawyer do with that knowledge? Obviously, if the evidence or argument is beneficial, then that evidence needs to be appropriately highlighted at trial. But what if it the evidence extremely harmful? Then the lawyer knows where the greatest danger lurks, and knows where to focus the greatest effort, and fight the strongestt. Without this foresight, a lawyer runs the risk of focusing on the wrong things. The Mark Gibson case illustrates this very well.

What Matters Most in the Mark Gibson Case?

Based on the allegations of the four witnesses who claimed to have heard Mark Gibson bragging about killing his ex-wife, Gibson was charged with arson and capital murder. The state indicates its intent to seek a life sentence without opportunity for parole.

1. Prosecution: At trial, the prosecutors begin by telling the jury that Mark Gibson killed Janie Rios so he could get his two boys back from her and so he wouldn't have to pay child support to Janie.
2. Prosecution: They acknowledge that there is no physical evidence tying Mark to the fire, but they tell jurors that Mark has bragged to at least four different people how he killed his first ex-wife.
3. Prosecution: They suggest that Mark has admitted killing his ex-wife because he thinks he's safe, he thinks he's already gotten away with it.
4. Prosecution: They argue that Mark should not get off simply because the fire destroyed all the physical evidence, because Mark's own admissions are the best evidence.

Gibson's defense counsel, in his opening statement, counters with a number of different points:

1. Defense: There's no way Mark would have set fire to a house when he believed his own sons, aged five and three, were sleeping there.
2. Defense: Mark had no way of knowing that the boys were spending the night with Janie's mother.
3. Defense: There is no evidence of any dispute or legal battle going on between Mark and Janie at the time of her death.
4. Defense: Every witness who now claims to have heard Mark bragging about the fire actually benefits personally or helps a family member by making that kind of claim.
5. Defense: Other possible suspects have been ignored. The investigating police officer reported shortly after the fire that Janie had "numerous enemies" and a "history of disputes with boyfriend(s)." For instance, during a bar fight shortly before her death, Janie cracked a man in the forehead with a pool cue, and before the fire that man was asking people where Janie lived. Nevertheless, the police never finished checking the alibis of the men who were dating Janie before her death.

As the facts unfold at trial, it becomes clear that no one living in or around the house saw or heard anything suspicious in the hour before the fire started. The house was divided into three apartments, with different people living in each apartment, so it's hard to know whether one person in particular was a target. But it is revealed that Mark owed Janie more than $10,000 in back child support at the time of Janie's death. And the state's primary witnesses take the stand one by one to testify to hearing Mark claim responsibility for the fire.

Mark does not testify. Instead, the defense calls Martha Loredo (Mark's second wife, now ex-wife) and Mark's mother to testify to Mark's whereabouts during the night of the fire. At the time, Mark and Martha lived with Mark's mother. Martha says Mark was with her the night of the fire. She remembers that she and Mark were awakened early in the morning by Janie's cousin Jimmy Rios who had rushed to their house to tell them about the fire. She adds that Mark would never hurt kids. On cross-examination, she denies being afraid of Mark, despite being confronted with a prior police statement in which she had reported that Mark once beat her until she collapsed.

Mark's mother likewise confirms that Mark was at home on the night of the fire. She points out that, even after the divorce between Mark and Janie, she and Janie had continued their friendship, and Janie would sometimes leave the two boys with her for babysitting. Mark's mother denies ever being afraid of Mark, although the prosecution reveals that she had previously reported an occasion to the police when Mark was mad at her and had threatened to burn her house down.

Before the jurors begin their deliberations, the judge reminds them that, in order to find Mark Gibson guilty, there must be proof beyond a reasonable doubt. Since a defendant has the constitutional right not to testify, they are not to consider Mark's lack of testimony for any purpose.

The jury deliberated for _____ hours. Mark Gibson was found guilty of capital murder and sentenced to life imprisonment without possibility for parole.

With the benefit of hindsight and RDE jury testing, we have the opportunity to do what the defense attorney for Mark Gibson did *not* have the opportunity to do – to examine what our RDE mock jurors identify as the most important components of the evidence and arguments, to see what that might reveal to us about the greatest dangers in the case and what might be done to counter them. If this knowledge had been available to Gibson's counsel before the second trial, would it have changed the outcome? There's no way to answer that question. Would it have changed the defense trial strategy? The most likely answer to that question is yes. What defense counsel *wouldn't* like to know where to focus the greatest fight?

A lawyer looks at the RDE results

We extracted 36 elements of testimony from the transcript of the second trial for submission to our online respondents (set forth in the table below). Of those 36 elements, the following seven elements registered the greatest impact, both when looking at the guilt coefficient standing alone, and when looking at the sum of the guilt coefficient and the total emotion coefficient (other than indifference). In order of impact (as measured by the sum of the guilt and emotion coefficients), these elements appeared to be the most powerful in pushing respondents toward guilt and emotional reactions:

1. Prosecution: Mark bragged to at least four different people how he killed his first ex-wife
2. Other information: Mark's mother denies ever being afraid of Mark...but she previously reported to the police that Mark was mad at her and had threatened to burn her house down

3. Other information: Bradley Sauro, a convicted felon, says Mark threatened to trap Bradley the same way he (Mark) trapped his own ex-wife if Bradley didn't pay $25 he owed

4. Prosecution: Prior police reports from Mark's own mother and from Mark's second ex-wife show he has threatened to kill them

5. Subjective evidence: Valerie Castillo says Mark told her he burned down the house so he could get his boys back, and she says she waited seven years to report the crime because she was afraid of him

6. Objective evidence: Mark owed Janie more than $10,000 in back child support at the time of Janie's death

7. Subjective evidence: Valerie Castillo and Armando Castillo say while Mark was drinking and inhaling paint thinner with them, he admitted to burning down the house

These seven elements fall into three distinct categories:

- Bragging about killing Janie (numbers 1, 3, possibly 5, and 7)
- Threatening others (numbers 2, 3, 4, possibly 5)
- Evidence of motive (numbers 5 and 6)

A criminal defense attorney may or may not have a way to anticipate all of these elements of testimony before trial (even with the benefit of information from a prior trial), since the opportunity for pretrial discovery is more limited in a criminal case than in the typical civil case. However, when a defense attorney had the benefit of these results before trial and trusted them, what priorities might that suggest for trial? Two priorities are obvious, even without these results:

1. Attack by every means possible the veracity of the witnesses who claim to have heard Mark Gibson bragging about setting the fire,
2. Attack the evidence of motive.

Without these results, one priority may have appeared somewhat less obvious: avoid at all costs placing Mark Gibson’s mother in a position to be confronted with a prior police report revealing that Mark had previously threatened to burn down his own mother’s house. This element registered the single most powerful emotional response among respondents. In retrospect, we can understand how jurors would respond at a visceral level, presumably finding it much easier to believe that a man who would threaten his own mother with fire would carry out that threat against an ex-wife.

Of course, any defense attorney would prefer to keep the prior police report by the mother out of evidence. Nevertheless, without the benefit of these results, we can see how a defense attorney might be tempted to run the risk of calling the mother to provide alibi testimony, even if when calling the mother potentially opens the door to allowing in the police report on cross-examination. But with these results, the priority becomes clear – do whatever is necessary to avoid opening the door to the police report. This suggests three strategies:

1. Recognize the police report for the extreme threat it poses, and be prepared with the objections and supporting legal authority (e.g. Rules of Evidence 403, 404, 608) to fight for and obtain a ruling on its exclusion before trial starts.

2. Don't call the mother to testify if the defendant's alibi can also be provided by his second ex-wife.

3. If the mother's alibi testimony is absolutely necessary, then make sure she is also prepared to admit that she has felt threatened by her son in the past, to avoid making the police report admissible as impeachment of her testimony.

These results and strategies suggest two competing conclusions. On one hand, many of the most powerful elements don't seem surprising. They confirm common sense. On the other hand, we also recognize that it can be easy for a powerful element – such as the mother's report of her son's threat – to be obscured by the presence of other competing concerns, until priorities are revealed by the data.

Because Mark Gibson was tried twice, we have the opportunity to compare differences in the presentation of evidence in the two trials, to discover significant differences from the first to the second trial with regard to disclosure of prior threats by the defendant. There are two:

1. In the first trial, in which the jury was unable to reach a verdict, the jury was not permitted to hear testimony and review reports regarding the defendant's threats to his mother and second ex-wife.
2. In the second trial, the evidence of prior threats was admitted (despite defense counsel's objections). Was this difference crucial in helping the jury reach a verdict of guilty, and a life sentence without possibility of parole? That, of course, is impossible to say, but the test results certainly suggest the evidence is harmful to the defense case.

References

For stories of the people listed here, see Sharon Cohen & Deborah Hastings, "For 110 Inmates Freed by DNA Tests, True Freedom Remains Elusive," *Associated Press*, May 28, 2002, available at http://www.deathpenaltyinfo.org/node/529; Nick Yarris, *Seven Days to*

Live (Harper Element 2008); Earl Ofari Hutchinson, "Wrongfully Jailed and Still Wronged After Release," *New American Media*, June 10, 2009, available at http://news.newamericamedia.org/news/view_article.html?article_id=607780a4bc9636819e7f278718193938; Carlyn Ray Mitchell, "After 14 Years in Jail, Man Walks Free," *The Gazette*, May 29, 2009, available at http://www.gazette.com/articles/kennedy-55360-carpenter-dna.html; Anthony Lane, "His DNA in Court," *Colorado Springs Independent*, June 4, 2009, available at http://www.csindy.com/colorado/his-dna-in-court/Content?oid=1367323.

[2] See Steve McGonigle & Jennifer Emily, "At a Glance: Overturned Convictions," *The Dallas Morning News*, October 12, 2008, available at http://www.dallasnews.com/sharedcontent/dws/news/politics/local/stories/DN-DNAbox_05pro.ART.State.Edition1.4a86189.html; "Dallas County Announces Another DNA Exoneration," *Associated Press*, May 26, 2009, available at http://cbs11tv.com/local/DNA.DNA.exoneration.2.1020307.html; Steve Pickett, "After 23 Years DNA Clears Dallas Man of Rape," *CBS Broadcasting Inc.*, May 27, 2009, available at http://cbs11tv.com/local/DNA.exoneration.Jerry.2.1021620.html.

[3] Figures provided by The Innocence Project, available at http://www.innocenceproject.org/understand/.

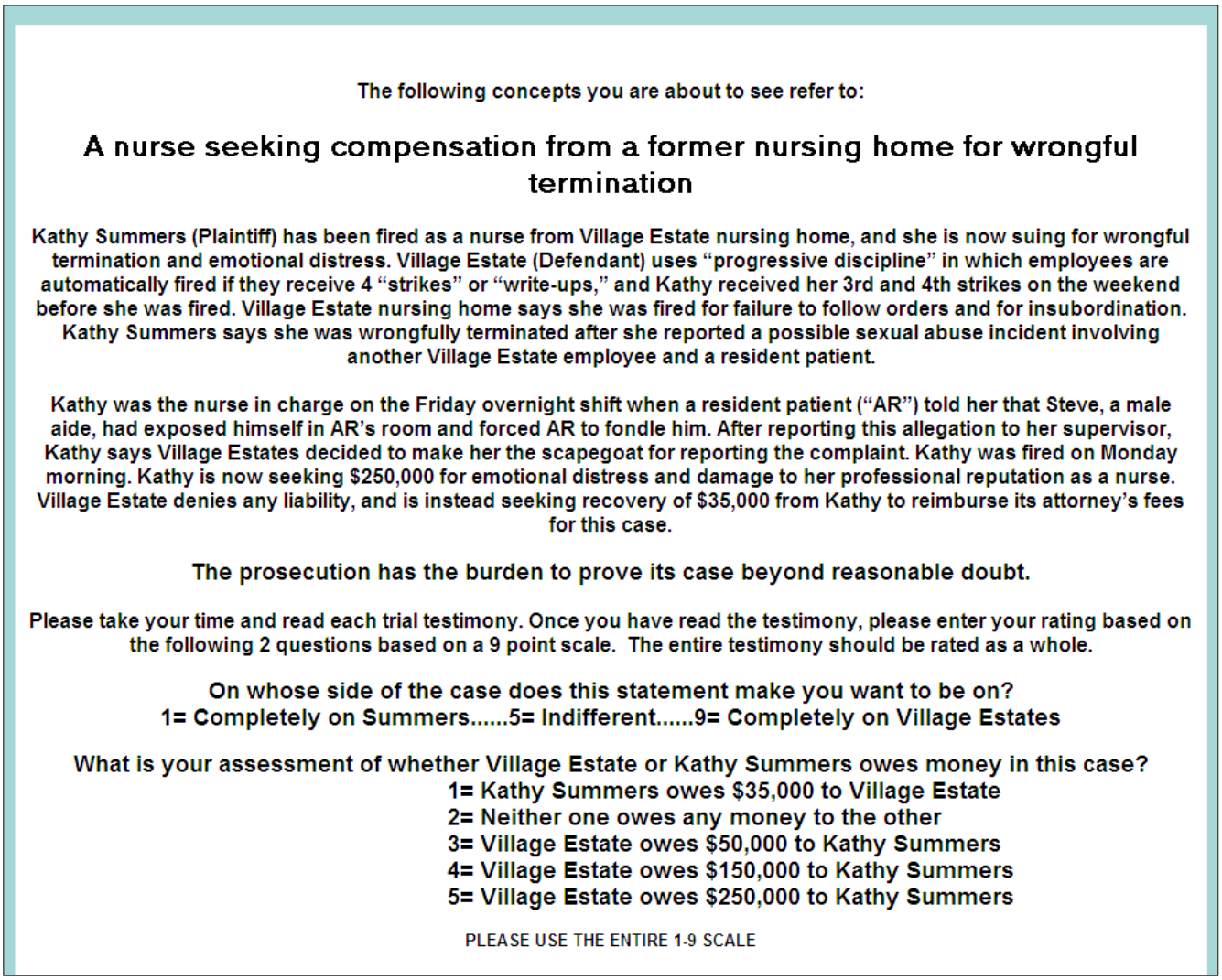
Chapter 06
The Wrongful Dismissal Suit

The RDE study - what the respondents saw and rated (Figures 6.1 – 6.3)

With the foregoing background, let's now approach the case using the RDE tools. We will follow the standard approach of experimental design, taking key aspects of the case, reducing these aspects to easy-to-read elements, mixing and matching the elements, and obtaining the responses from our 'electronic jurors.' For this particular case, we will change our first questions to 'whose side do you want to be, 1=Completely on Kathy Summers .. 5=Neither side .. 9=Completely on village estates.' Our second question is the award, either that Kathy Summers owes money to the Village Estates, that no money is owed, or that Village Estates owes money to Kathy Summers.

We begin the RDE study with the orientation page, that respondents saw (Figure 6.1)

Figure 6.1: Orientation page for the wrongful dismissal suit



We move now to the actual screen shots of the RDE interview, in Figures 6.2 (question #1) and 6.3 (question #2). This time the actual text is on the left, in centered form, so that the elements appear stacked, one above the other. The rating scale appears on the right. This format may be slightly easier for the respondents, compared to the format with the text on the top, and the rating scale at the bottom. It's not clear whether the format makes a difference to the ratings, however. That's a secondary question, not of relevance here.

Figure 6.2: Screen shot of a vignette describing the wrongful dismissal case, with the text on the left, and the rating scale on the right. The screen shot pertains to the first question, which instructs the respondent to select the 'side' which he feels to be correct – for that particular vignette.

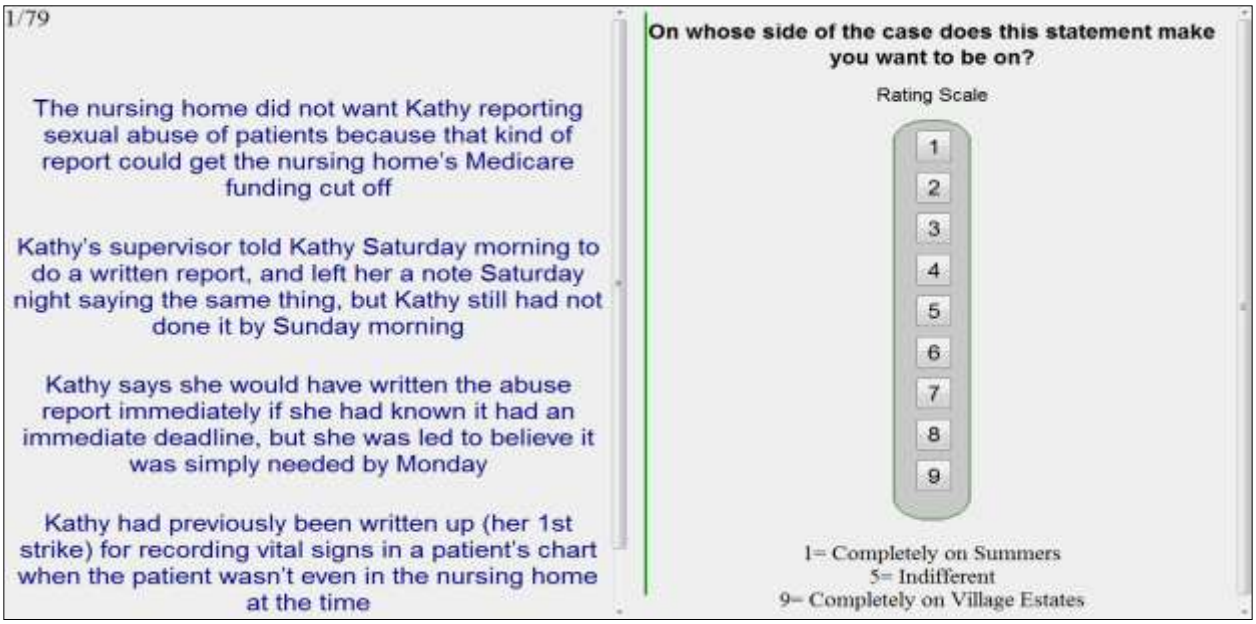
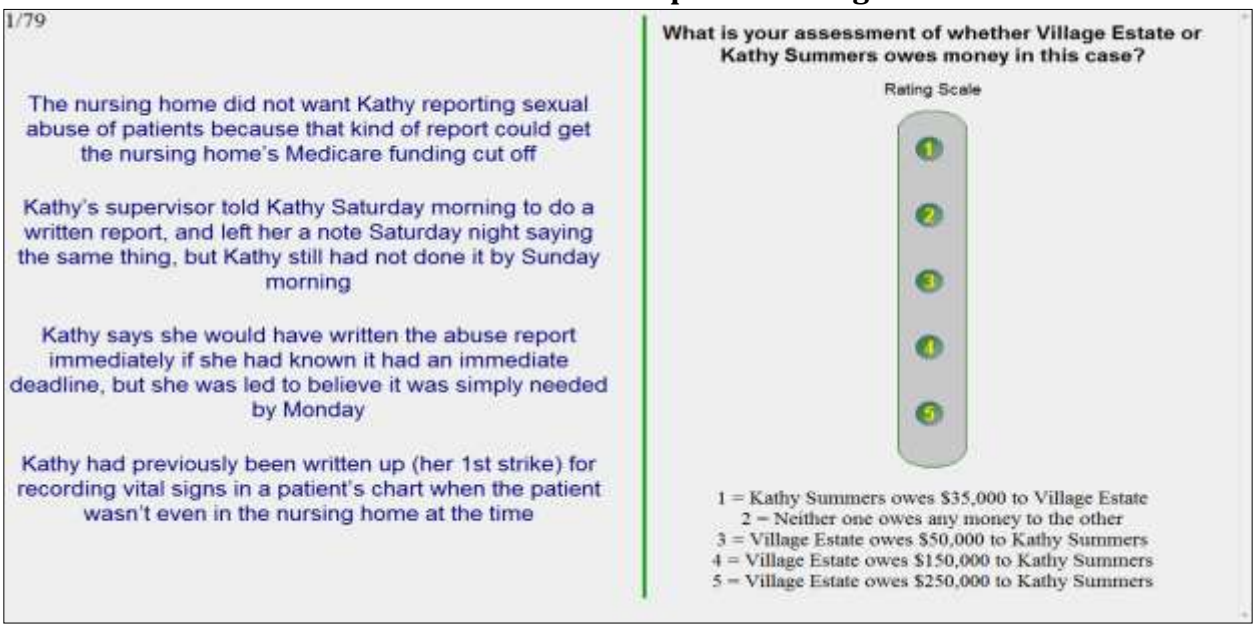


Figure 6.3: Screen shot of a vignette describing the wrongful dismissal case, with the text on the left, and the rating scale on the right. The screen shot pertains to the first question, which instructs the respondent to select the the amount of the award, and to whom the award should be made – for that particular vignette.



<u>Results – how did respondents rate the vignettes? (Tables 6.1 and 6.2)</u>

Based upon the vignettes, and our 150 respondents, each of whom rated every one of the 48 vignettes on the two questions, we find that the preponderance of the votes are for Kathy (64%) or indifferent (21%). The remaining 15% are for Village Estate. Furthermore, 66% of the respondents assigned a fairly high award to Kathy ($150,000 or more), whereas about 32% assigned no award to either.

Table 6.1: Percent of vignettes assigned each of the nine ratings for question #1 (on whose side is the respondent, when reading this vignette), and the five ratings for question #2 (the amount of the award)

Question 1 For Kathy =1 for Village =9	Question 1 % of vignettes assigned this rating	Question 2 Amount of award and to whom	Question 2 % of vignettes assigned this rating
1 = Completely on Summers	29	1=Kathy Summers owes $35,000 to Village Estate	2
2	15	Neither one owes any money to the other	32
3	12	Village Estate owes $50,000 to Kathy	26
4	8	Village Estate owes $150,000 to Kathy	16
5=Indifferent	21	Village Estate owes $250,000 to Kathy	24
6	5		
7	4		
8	3		
9=Completely on Village Estate	3		

We can get a better sense of the choices that our respondents make by creating a two-way table, one way being the vote for Kathy (1) versus for Village Estate (9), with a rating of 5 being for neither. The scale appears as the rows in Table 6.2. The column shows the award and to whom it is made. The first data column shows a 30K award to Village Estate. The second datacolumn shows no award. The third-fifth column shows increasing awards to Kathy.

Table 6.2 shows what we expect;

1. When the vignette moves the respondent to side with Kathy, the award is to Kathy.
2. However, as the degree to which the vignette moves a person towards 'neutral,' siding with neither side, the size of the award to Kathy shrinks.
3. When the respondent feels neutral towards Kathy versus for Village Estate, about 61% assign no award. There are a number of vigenttes where the vote is neutral, but there is a small award of 50K to Kathy.
4. When the respondent reading a vignette sides towards Village Estate, there are a very small number of votes to award anything to Village Estate. Most of the votes are to do nothing, i.e., to make no award.

5. We can say that when a vote is to side with Kathy, stronger votes mean higher awards. We a vote is to side with Village Estate, the vote does not, however, come with an award to Village Estate.

Table 6.2: Two way table showing the distribution of ratings for Kathy versus for Village Estate (Row) versus the amount of award and to whom the money is awarded (column).

	Award Village Estate	**No Award**	**Award Kathy**	**Award Kathy**	**Award Kathy**		
	1=30K	2=0	3=50K	4=150K	5=250K	N	Total
Side-Kathy							
1	2	2	**15**	**18**	**63**	2114	100
2	2	15	**35**	**36**	**12**	1074	100
3	1	32	**47**	**16**	**4**	864	100
4	1	54	**30**	**14**	**1**	582	100
Indifferent							
5	1	**61**	27	4	6	1485	100
Side-Village Estate							
6	**6**	54	28	11	1	348	100
7	**8**	59	15	15	3	265	100
8	**9**	60	10	13	8	234	100
9	**10**	31	10	9	40	234	100
Total	2	32	26	16	24		100
N	171	2268	1859	1177	1725	7200	

What drives a respondent to side with Kathy Summers versus Village Estate? (Table 6.3)

The essence of the RDE study is to identify, on an element by element basis, the degree to which each element drives the respondent to side with Kathy Summers (i.e., assign ratings of 1-4), or drives the respondent to side with Village Estate (i.e., assign ratings of 6-9).

In this particular study we really deal with two scales. After reading a vignette, the respondent first has to decide with whom he sides, and then the degree to which he sides. We are going to analyze the responses to this first rating question in two ways, each way using the so-called Top3 Box, our Interest (INT) Model.

1. We first look at those who side strongly with Kathy. We convert ratings of 1-3 to 100. These are strongly for Kathy. We convert ratings of 4-9 to 0. These are weak rating for Kathy, neutral, or ratings for Village Estate. We then run the model, on a respondent by respondent basis, and average corresponding impact values. The average shows us the elements which drive a vote for Kathy.

2. We do the same type of analysis, but now focus on Village Estate. We convert ratings of 7-9 to 100. These are strong for Village Estate. We convert ratings of 1-6 to 0. These are weak ratings for Village Estate, neutral, or ratings for Kathy. We run the model again, on a respondent by respondent basis, and average corresponding values. The average shows us the elements which drive a vote for Village Estate.

The results of our analysis appear in Table 6.3. The first data column shows the impact of the elements as drivers for siding with Kathy. The second data shows the impact of the elements as driving for siding with Village Estate.

1. The additive constant 'for Kathy' is 50, meaning that without elements, virtually half of the respondents are likely to side strongly with Kathy (i.e., ratings 1-3). In contrast, the additive constant for 'Village Estate' is only 7, meaning that without elements, a mere 7% of the respondents are likely to side strongly with Village Estate.
2. There are are only strong arguments, however, which move beyond the high basic vote for Kathy. Both of these talk to her profession actions:

   Kathy points out that she followed standard procedure in the policy manual by immediately phoning her nursing home supervisor with the abuse complaint
   Before she was fired, Kathy's written Village Estate work evaluations reported her to be an excellent employee with strong nursing skills

3. No elements at all drive the respondent to side with Village Estate. The elements are all low, most around 0.
4. The bottom line here that the basic vote is for Kathy, but only a few argument strengthen that vote. Kathy's strength is in the set up to the case, not in the specific additional communications

Table 6.3: The INT model, showing how elements drive the respondent to side with Kathy (first data column) or to side with Village Estate (second data column)

	Q#1: On whose side of the case does this statement make you want to be? 1= Completely on the side of Kathy Summers...5= Indifferent...9= Completely on the side of Village Estate (1-3	1-3 =100	7-9 = 100

	converted to 100)		
	Total Sample (N=150, each evaluating 48 vignettes)	**For Kathy**	**For Village Estates**
	Additive constant	50	7
C1	Kathy points out that she followed standard procedure in the policy manual by immediately phoning her nursing home supervisor with the abuse complaint	9	-2
C5	Before she was fired, Kathy's written Village Estate work evaluations reported her to be an excellent employee with strong nursing skills	9	3
F2	Several days after Kathy was fired, regulators contacted the police, and Steve admitted to the police that he had in fact exposed himself to AR and forced her to fondle him	7	-3
A1	The nursing home did not want Kathy reporting sexual abuse of patients because that kind of report could get the nursing home's Medicare funding cut off	5	1
A4	The nursing home's claims about Kathy failing to follow orders and being insubordinate were untrue and were written up in order to justify firing Kathy	5	2
A3	The nursing home wants employees who are willing to play the game and wants to get rid of employees who make reports that get the nursing home in trouble	4	-2
B6	Nursing homes must immediately document any claim of abuse and then report it to regulators, and Kathy's documentation delay put the home at risk with regulators	4	1
D3	Kathy says she refused to sign a written criticism for failing to keep Steve out of AR's room because it was a lie; no one had ever told her to keep him out of AR's room	4	0
D4	Kathy says she would have written the abuse report immediately if she had known it had an immediate deadline, but she was led to believe it was simply needed by Monday	4	2
E4	Before being fired Kathy had an excellent 30 year nursing record, but since then she has struggled with a mix of anger, humiliation and depression from being blamed and fired	4	2
F5	Kathy had previously been written up (her 2nd strike) for allowing an unqualified aide to apply a prescription cream to a patient	4	0
A5	The nursing home feared Kathy would report the abuse complaint to state regulators, so the nursing home simply rushed to shift blame to Kathy instead	3	-1
A6	The nursing home first tried to ignore the abuse complaint; for two days it was not reported to regulators, no investigation was started, and Steve just kept working	3	1
C2	Kathy had already drafted her written report by Sunday afternoon	3	-2

	before she was told not to come in for Sunday night, so she turned it in on Monday just before she was fired		
E6	Kathy says she was never told to keep Steve out of AR's room, and when her supervisor started blaming her for not keeping him out, she knew she was being set up as the scapegoat	3	-1
F3	After the abuse complaint was reported to regulators, Village Estate was put on probation for delayed reporting and for allowing Steve to keep working with patients for two days	3	2
B5	Kathy is suing for money even though she really hasn't lost money; she immediately got another job and is making more money now than ever	2	1
C3	Kathy threatened to call the state regulators on Monday to report the abuse complaint and start an investigation, but the call to regulators was made by the nursing home director	2	1
C6	By federal regulation, all alleged sexual violations are to be immediately reported and the nursing home must protect against potential abuse while the investigation is in progress	2	1
E2	Kathy was turned into the State Board of Nursing for "failing to document" at Village Estate; she had to take remedial courses and is now on probation with the State Board	2	2
E3	The parent company responsible for Village Estate never looked into the circumstances of Kathy's termination by the nursing home	2	-1
F6	This job termination came as Kathy was going through a divorce, and Kathy's psychiatrist says the divorce probably added to her stress even though it wasn't contested	2	-2
A2	The nursing home didn't believe AR (who isn't always believable) and thinks Kathy should have ignored the abuse story rather than following the law and reporting it	1	1
C4	Kathy's supervisor told Kathy Saturday morning to do a written report, and left her a note Saturday night saying the same thing, but Kathy still had not done it by Sunday morning	1	5
D6	Kathy says she was surprised when Steve was allowed to work without restrictions the next night after the abuse complaint, even though she didn't believe there had been abuse	1	1
E1	Kathy got a better paying job the next day after she was fired; in fact, she was hired by another nursing home as soon as she explained why she had been fired by Village Estate	1	1
D5	Kathy's supervisor says she verbally told Kathy to do the written report by 7 a.m. Sunday, although that deadline is not stated in the written note left for Kathy	0	3
F4	Kathy had previously been written up (her 1st strike) for recording vital signs in a patient's chart when the patient wasn't even in the nursing home at the time	0	-1
D1	Kathy says she didn't prepare a written report during work Saturday night because the nursing home left her short-handed and she spent	-1	0

	all of her time taking care of patients		
E5	Following her firing, Kathy's lawyer sent her to a psychiatrist; the psychiatrist has been treating her with medications for severe depression which he says results from the firing	-1	1
B3	Kathy was written up on Sunday for insubordination because she refused to sign for receipt of a written warning about her failure to keep Steve out of AR's room	-2	2
F1	Before this firing, Kathy was already taking medications for depression following the accidental electrocution death of her son seven years before	-2	2
D2	Although Kathy claims she didn't write up the abuse complaint on Saturday night because she was busy, she admits she could have called for help but didn't do so	-4	4
B2	Kathy repeatedly ignored instructions to make an immediate written report of the abuse complaint, which the law requires, so she was written up for that on Sunday	-6	1
B4	Nursing homes need to have standards like the four strike policy, and Village Estate should not be penalized for following those standards	-6	3
B1	Kathy had previously been instructed to keep Steve out of AR's room, but she apparently thought it made her work easier to ignore that order during the night shift	-8	4

How the elements drive the award (Table 6.4)

Question #2 instructed the respondent to select an an award, whether to Village Estate for $35,000, to neither Village Estate nor Kathy, or to Kathy for $50,000, $150,000 or $250,000, respectively. RDE allows us to link the element to the award. Coding the response in terms of the actual dollar amount (with 1=-30,000, 2=0, etc.) allows us to identify the number of dollars associated with each element. Again we use our workhorse program, OLS (ordinary least-squares) regression, to create an individual-level model. We then aggregate the corresponding parameters for that model. For dollar award versus element we choose to use OLS but without an additive constant. That is, in the absence of information, we assume that there will be no award, i.e., the rating will be 0.

Table 6.4 tells us that there is a range of award value, with the highest award coming with statements about the wrongdoing of the nursing home (A1), and the lowest award, yet a positive one, coming from Kathy's negligent behavior.

A1 The nursing home did not want Kathy reporting sexual abuse of patients because that kind of report could get the nursing home's Medicare funding cut off, (award $38,108)

B2 Kathy repeatedly ignored instructions to make an immediate written report of the abuse complaint, which the law requires, so she was written up for that on Sunday (award $11,854)

Table 6.4: How elements 'drive' awards. All elements drive awards to Kathy, rather than to Village Estate, but to various amounts, depending upon the element

	Total panel – dollar value of each element in terms of award	To Kathy
A1	The nursing home did not want Kathy reporting sexual abuse of patients because that kind of report could get the nursing home's Medicare funding cut off	$38,108
F3	After the abuse complaint was reported to regulators, Village Estate was put on probation for delayed reporting and for allowing Steve to keep working with patients for two days	$34,837
A3	The nursing home wants employees who are willing to play the game and wants to get rid of employees who make reports that get the nursing home in trouble	$34,234
A4	The nursing home's claims about Kathy failing to follow orders and being insubordinate were untrue and were written up in order to justify firing Kathy	$32,577
E4	Before being fired Kathy had an excellent 30 year nursing record, but since then she has struggled with a mix of anger, humiliation and depression from being blamed and fired	$32,333
F2	Several days after Kathy was fired, regulators contacted the police, and Steve admitted to the police that he had in fact exposed himself to AR and forced her to fondle him	$31,182
A6	The nursing home first tried to ignore the abuse complaint; for two days it was not reported to regulators, no investigation was started, and Steve just kept working	$30,806
E3	The parent company responsible for Village Estate never looked into the circumstances of Kathy's termination by the nursing home	$30,715
D1	Kathy says she didn't prepare a written report during work Saturday night because the nursing home left her short-handed and she spent all of her time taking care of patients	$30,518
A5	The nursing home feared Kathy would report the abuse complaint to state regulators, so the nursing home simply rushed to shift blame to Kathy instead	$30,245
D4	Kathy says she would have written the abuse report immediately if she had known it had an immediate deadline, but she was led to believe it was simply needed by Monday	$28,772
A2	The nursing home didn't believe AR (who isn't always believable) and thinks Kathy should have ignored the abuse story rather than following the law and reporting it	$28,467
C5	Before she was fired, Kathy's written Village Estate work evaluations reported her to be an excellent employee with strong nursing skills	$27,868

C1	Kathy points out that she followed standard procedure in the policy manual by immediately phoning her nursing home supervisor with the abuse complaint	$27,181
E6	Kathy says she was never told to keep Steve out of AR's room, and when her supervisor started blaming her for not keeping him out, she knew she was being set up as the scapegoat	$27,038
D3	Kathy says she refused to sign a written criticism for failing to keep Steve out of AR's room because it was a lie; no one had ever told her to keep him out of AR's room	$26,453
B6	Nursing homes must immediately document any claim of abuse and then report it to regulators, and Kathy's documentation delay put the home at risk with regulators	$26,375
D6	Kathy says she was surprised when Steve was allowed to work without restrictions the next night after the abuse complaint, even though she didn't believe there had been abuse	$26,210
B4	Nursing homes need to have standards like the four strike policy, and Village Estate should not be penalized for following those standards	$25,891
C6	By federal regulation, all alleged sexual violations are to be immediately reported and the nursing home must protect against potential abuse while the investigation is in progress	$25,637
C3	Kathy threatened to call the state regulators on Monday to report the abuse complaint and start an investigation, but the call to regulators was made by the nursing home director	$25,275
D5	Kathy's supervisor says she verbally told Kathy to do the written report by 7 a.m. Sunday, although that deadline is not stated in the written note left for Kathy	$24,898
C2	Kathy had already drafted her written report by Sunday afternoon before she was told not to come in for Sunday night, so she turned it in on Monday just before she was fired	$24,172
B3	Kathy was written up on Sunday for insubordination because she refused to sign for receipt of a written warning about her failure to keep Steve out of AR's room	$23,708
E5	Following her firing, Kathy's lawyer sent her to a psychiatrist; the psychiatrist has been treating her with medications for severe depression which he says results from the firing	$23,125
F1	Before this firing, Kathy was already taking medications for depression following the accidental electrocution death of her son seven years before	$22,867
F5	Kathy had previously been written up (her 2nd strike) for allowing an unqualified aide to apply a prescription cream to a patient	$21,914
E2	Kathy was turned into the State Board of Nursing for "failing to document" at Village Estate; she had to take remedial courses and is now on probation with the State Board	$21,415

E1	Kathy got a better paying job the next day after she was fired; in fact, she was hired by another nursing home as soon as she explained why she had been fired by Village Estate	$21,113
F6	This job termination came as Kathy was going through a divorce, and Kathy's psychiatrist says the divorce probably added to her stress even though it wasn't contested	$21,102
B5	Kathy is suing for money even though she really hasn't lost money; she immediately got another job and is making more money now than ever	$20,862
C4	Kathy's supervisor told Kathy Saturday morning to do a written report, and left her a note Saturday night saying the same thing, but Kathy still had not done it by Sunday morning	$20,645
B1	Kathy had previously been instructed to keep Steve out of AR's room, but she apparently thought it made her work easier to ignore that order during the night shift	$15,812
D2	Although Kathy claims she didn't write up the abuse complaint on Saturday night because she was busy, she admits she could have called for help but didn't do so	$14,871
F4	Kathy had previously been written up (her 1st strike) for recording vital signs in a patient's chart when the patient wasn't even in the nursing home at the time	$14,571
B2	Kathy repeatedly ignored instructions to make an immediate written report of the abuse complaint, which the law requires, so she was written up for that on Sunday	$11,854

Mind-set segments – it's about focus (Table 6.5)

We saw in the previous sections that the majority of responses to the vignettes sided with Kahy, rather than with Village Estate. We also saw that among the strong performing elements, driving respondents to side with Kathy, were elements of at least two different types. One involves Kathy, the other involves Village Estate. Arguments may revolve around one point or two points, or more. Our case here revolves around two stories; Kathy Summers as good employee, and Village Estate as a wrongdoing employer.

When we analyze the data from our 150 respondents, looking at the pattern of impact values, we find at least very strong patterns, although there may be more. Clustering respondents on the basis of their impact values shows one group (Segment 1) focusing on Kathy as a good employee. The other group (Segment 2) focuses on the bad things that Village Estate did, in its treatment of Kathy.

Table 6.5 shows us the strong performing elements for Segment 1, and then the strong performing elements for Segment 2. The table shows us the elements in descending order of performance for each segment, and then the award generated by that element, according to that segment. Table 6.5 shows us both how the element performs in the segment where it performs strongly, and in turn, how it performs in the other segment.

1. Segment 1 (Kathy as a good employee) is slightly larger than Segment 2 (Village Estate behaved incorrectly).

2. The additive constant (basic propensity for Kathy) is lower for Segment 1 (Kathy as a good employee, additive constant=47), and slightly higher for Segment 2 (Village Estate behaved incorrectly, additive contant = 54). However, the seven point difference is not dramatic. We are not dealing with a huge disparity between segments in their predisposition to side with Kathy.

3. The interesting differences come in the elements, which Table 6.5 lists, showing the strong performing elements and associated dollar awards, first for Segment 1, and then for Segment 2. What one segment finds compelling, the other may find perhaps somewhat compelling (strong positive numbers), but just as likely may find irrelevant, or even off-putting, pushing them away from siding with Kathy.

    a. *A good eample of similar patterns across segments is element C1 (Kathy points out that she followed standard procedure in the policy manual by immediately phoning her nursing home supervisor with the abuse complaint). This element scores +11 among Segment 1 (Kathy as a good employee), and +7 among Segment 2 (Village Estate incorrectly).*

    b. *A good example of opposite patterns across segments is element A4 (The nursing home's claims about Kathy failing to follow orders and being insubordinate were untrue and were written up in order to justify firing Kathy). This element scores -3 among Segment 1, and +16 among Segment 2*.

4. Next to the performance is the award. We get a sense that the award will increase with the strength of the performance. In the next secton (Figure 6.4) we will see how the amount of the award covaries with performance across all 36 elements.

Table 6.5: Strong performing elements for Question 1 (Finding for Kathy), emerging after segmenting the mind-sets of the respondents, based upon the pattern of responses to Question 1. The table shows only these strong performing elements for each mind-set segment, showing in turn how the elements perform in both segments, and the award to be traced to the element according to each segment

		Seg1	Seg1	Seg2	Seg2
		Q1	Q2	Q1	Q2
	Base size	84		66	
	Additive constant	47		54	
	Segment 1 - Kathy as a good employee				

C1	Kathy points out that she followed standard procedure in the policy manual by immediately phoning her nursing home supervisor with the abuse complaint	11	$ 27	7	$27
C5	Before she was fired, Kathy's written Village Estate work evaluations reported her to be an excellent employee with strong nursing skills	10	$ 33	6	$22
F5	Kathy had previously been written up (her 2nd strike) for allowing an unqualified aide to apply a prescription cream to a patient	10	$ 26	-4	$17
F2	Several days after Kathy was fired, regulators contacted the police, and Steve admitted to the police that he had in fact exposed himself to AR and forced her to fondle him	9	$ 31	4	$31
C2	Kathy had already drafted her written report by Sunday afternoon before she was told not to come in for Sunday night, so she turned it in on Monday just before she was fired	8	$ 27	-4	$20
	Segment 2 - Village Estate behaved incorrectly				
A4	The nursing home's claims about Kathy failing to follow orders and being insubordinate were untrue and were written up in order to justify firing Kathy	-3	$ 21	16	$47
E3	The parent company responsible for Village Estate never looked into the circumstances of Kathy's termination by the nursing home	-8	$ 27	15	$35
E1	Kathy got a better paying job the next day after she was fired; in fact, she was hired by another nursing home as soon as she explained why she had been fired by Village Estate	-9	$ 13	13	$31
A3	The nursing home wants employees who are willing to play the game and wants to get rid of employees who make reports that get the nursing home in trouble	0	$ 26	9	$45
E6	Kathy says she was never told to keep Steve out of AR's room, and when her supervisor started blaming her for not keeping him out, she knew she was being set up as the scapegoat	-2	$ 25	9	$29
E2	Kathy was turned into the State Board of Nursing for "failing to document" at Village Estate; she had to take remedial courses and is now on probation with the State Board	-4	$ 17	9	$28
A1	The nursing home did not want Kathy reporting sexual abuse of patients because that kind of report could get the nursing home's Medicare funding cut off	3	$ 38	8	$38

A5	The nursing home feared Kathy would report the abuse complaint to state regulators, so the nursing home simply rushed to shift blame to Kathy instead	0	$ 24	8	$38
D4	Kathy says she would have written the abuse report immediately if she had known it had an immediate deadline, but she was led to believe it was simply needed by Monday	0	$ 20	8	$40
E4	Before being fired Kathy had an excellent 30 year nursing record, but since then she has struggled with a mix of anger, humiliation and depression from being blamed and fired	0	$ 29	8	$37
E5	Following her firing, Kathy's lawyer sent her to a psychiatrist; the psychiatrist has been treating her with medications for severe depression which he says results from the firing	-8	$ 20	8	$27

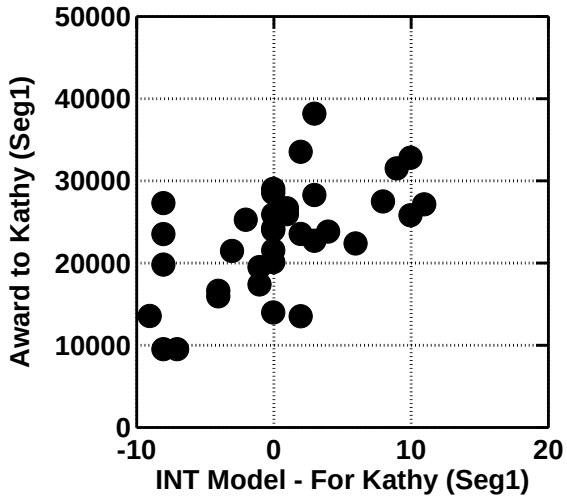
Patterns relating monetary awards to impact values, by segment (Figure 6.4).

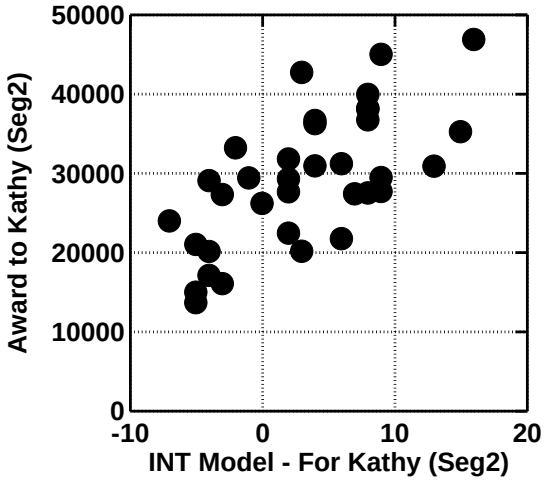
Does the amount of an award to Kathy co-vary with the impact or strength of siding with Kathy? That is, our INT (interest model) from question #1 tells us the incremental proportion of respondents who would side with Kathy were the element to be introduced into the case as an argument. We also know that each element carries with an award. Finally, we know that there are two mind-set segments voting for Kathy, those in Mind-set Segment 1 who vote for Kathy because of herself, and those in Mind-set Segment 2 who vote for Kathy because of the perceived wrongdoing of Village Estate.

Our simple question now devolves to a scatterplot of the amount of the award assigned by the respondent versus the impact of the element as driving for Kathy. We create this scatterplot twice, once using the impacts and awards from Segment 1 (for Kathy), and the second time using the impacts and awards from Segment 2 (against Village Estate).

Figure 6.4 tells the story. Those respondents in Segment 2, who are voting against Village Estate, are both more vehement in their support of Kathy, and likely to assign a greater award to Kathy. It's not that Kathy is so right for Segment 2, as it is that Village Estate is wrong, and 'must be punished.' The punishment comes in the form of the far greater range of awards for Kathy.

Figure 6.4: How the amount of the award (for Kathy) co-varies with the incremental percent of the respondents who would vote for Kathy, beyond the baseline percent. The figures show that Segment 2, who vote for Kathy because they vote against Village Estate, are likely to assign to Kathy a greater award than are Segment 1 (who vote for Kathy herself).





Finding the Mind-set segments in the population (Table 6.6)

Now that we have identified two interesting mind-set segments, how do we know the segment to which a new person belongs? Such knowledge could help us tailor the message to that individual. Are there ways of determining one's membership in a segment, where that segment is strictly determined by the pattern of responses to a limited set of elements?

Today's researchers use data mining, procedures for sifting through masses of information about a person, with the attempt to predict the membership of that person in a group of interest. Data mining works quite well for predicting when a person will purchase an item, such as a car. Data mining does not work, however, in cases where we focus on a specific situation, and where it's not behavior but attitude towards that specific situation which is important.

We turn the approach around, and use dicriminant function analysis (DFA) to develop for a us a 'typing wizard,' a tool which when given to a new prospect, assigns that prospect to Segment 1 (for Kathy), versus for Segment 2 (against Village Estate). Our approach must be rapid, cost-effective, and tailored to this specific case, with the facts, our elements, playing the key role. It does not good to search through terrabytes of data about our 150 respondents, trying to predict from that mass of data the mind-set segment in this case to which the prospect will belong.

We begin with the information that we have. Most important to is us the impacts values for our 150 respondents, based upon the Persuasion Model, the model which relates the 9-point rating (question #1) to the presence/absence of the 36 elements. We did not use this model up to now. This Persuasion Model is granular, telling us the numerical contribution of each element to the rating.

Using the Persuasion Model, we will estimate on the 9-point scale the expected rating for each element. We do that by adding together the additive constant for the

Persuasion Model to the impact of the specific element. For each respondent we now know the expected rating to be assigned to each element on the 9-point scale (question #1), even though we never tested one-element vignettes. We have this information for each of our 150 respondents.

Having estimated the 9-point rating for each element, we now transform our estimates. Estimates of a rating less than 3.5 are transformed to 1. Estimates between 3.5 and 6.5 are transformed to 2. Estimates above 6.5 are transformed to 3. We have now assigned to each element a score on a 3-point scale, likely to be assigned by a respondent, using that respondent's own Persuasion Model.

DFA, discriminant function analysis now takes over. We know the segment assignment for each respondent, having done that previously by clustering. We know whether each respondent falls into Segment 1 (for Kathy), or into Segment 2 (Against Village Estate). We also know the pattern of ratings on the newly-established 3-point scale, for each respondent.

DFA then follows these steps:

1. (Part A): DFA sorts through the new matrix (segment assignment, 3-point rating of element), identifying the elements which best partition the respondents into the two segments. Part A of Table 6.6 says that on average 72% of the time the classification function correctly identifies that repsondent as belonging to the appropriate segment. This 72% is a substantial improvement over the random 50% that we would expect to see were we to assign new people at random to the mind set segments.
2. (Part B): DFA produces four different classification functions, one function comprising four elements, and three other classifications comprising three elements. The reason for several classification functions is to prevent users of the typing wizard from 'memorizing' the right set of answers. Having found, almost equally correct classification functions, reduces the likelihood of someone 'getting it,' and knowing how to 'game' the typing tool. Part B shows us the classification function for both mind-set Segment 1 (For Kathy), and mind-set Segment 2 (Against Village Estate). We need only have a respondent rate each of the four elements on a 3-point scale, and use the classification function to estimate the weighted sum, based on four rated values. The 'F' to remove shows the degree to which each of the four elements drives the 'separation of the mind-set segments.
3. (Part C): Once we create the classification functions, we have the ability to assign people to one of the two mind-set segments. Part C shows us six patterns of responses out of a possible 3x3x3x3 or 81 patterns. For each pattern, we 'solve' the two classification functions, ending up with two numbers. We select the higher of the two numbers, as long as that higher number is positive. That number tells us the segment to which the person is assigned, based upon the pattern of responses. For example, Person 1 generates a pattern with a negative value for Segment 1, and a small positive value for Segment 2, thus being assigned to Segment 2. In contrast,

Person 2 generates a pattern with two positive numbers, that corresponding to Segment 1 being the higher. We assign Person 2 to Segment 2.

Table 6.6: Results of the DFA (discriminant function analysis). Part A shows the classification matrix, with correct and incorrect classifications, based upon the classification functions. Part B shows the classification functions, and the F ratio showing how well the element separates the two segments. Part C shows the assignment of six people to Segment 1 or Segment 2, based upon the pattern of their ratings in a 4-element typing 'wizard.'

Part A - Classification Matrix (Cases in row categories classified into columns)			
	1 For Kathy	**2 Against Village Estate**	**%correct**
Segment 1 – For Kathy	50	34	60
Segment 2 – Against Village Estate	8	58	88
Total	58	92	72

Part B: Classification Functions			
	1 For Kathy	**2 Against Village Estate**	**F-to-remove**
Additive constant	-7.252	-5.924	
The nursing home feared Kathy would report the abuse complaint to state regulators, so the nursing home simply rushed to shift blame to Kathy instead	1.626	0.838	10.2
Kathy had already drafted her written report by Sunday afternoon before she was told not to come in for Sunday night, so she turned it in on Monday just before she was fired	1.405	2.105	7.6
The parent company responsible for Village Estate never looked into the circumstances of Kathy's termination by the nursing home	2.921	1.595	30.7
Kathy had previously been written up (her 2nd strike) for allowing an unqualified aide to apply a prescription cream to a patient	1.308	1.881	5.5
.			

C: Assignment of six new people into segments, based upon the value of the classification function						
	Per1	Per2	Per3	Per4	Per5	Per6
The nursing home feared Kathy would report the abuse complaint to state regulators, so the nursing home simply rushed to shift blame to Kathy instead	1	1	3	2	3	3
Kathy had already drafted her written report by Sunday afternoon before she was	1	2	1	3	2	3

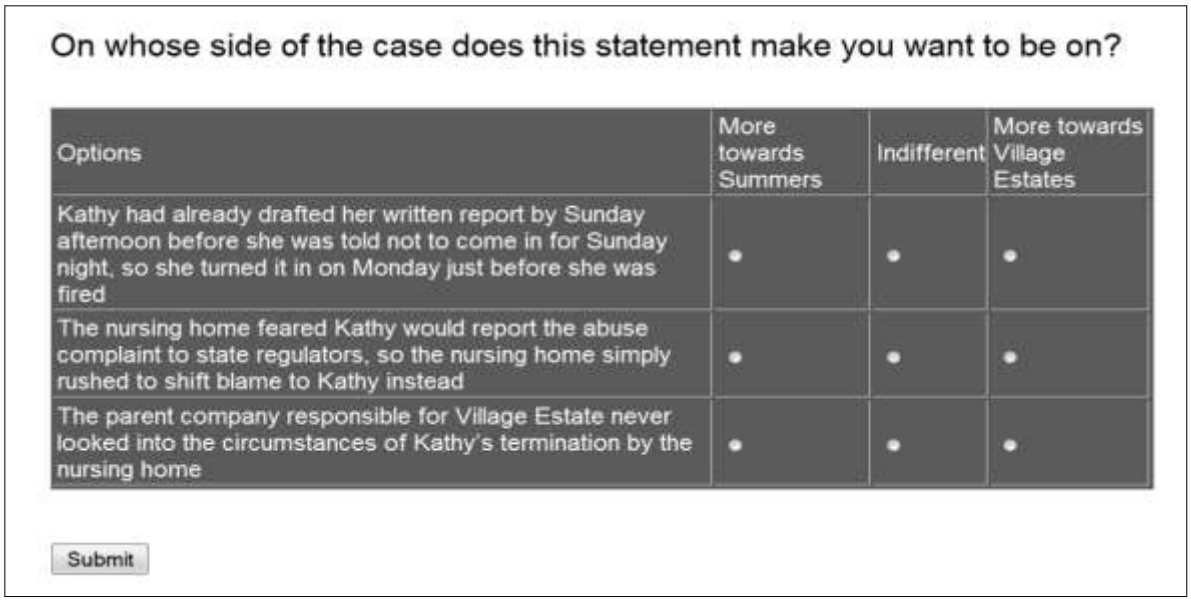
told not to come in for Sunday night, so she turned it in on Monday just before she was fired						
The parent company responsible for Village Estate never looked into the circumstances of Kathy's termination by the nursing home	1	3	2	3	1	3
Kathy had previously been written up (her 2nd strike) for allowing an unqualified aide to apply a prescription cream to a patient	1	1	3	3	2	3
Seg1 – For Kathy	-0.3	**7.0**	**8.5**	**12.6**	5.7	**14.3**
Seg2 – Against Village Estate	**0.5**	5.8	7.5	**12.5**	**6.2**	13.3

Practical application –saying the "right thing" (Figures 6.5 – 6.9)

Now that we have developed the basic typing tool, we can extract other, smaller typing tools, comprising three elements. As noted above, good practice is to create a 'typing wizard' which prevents someone from 'memorizing' the right answer. Two ways to do this are:

1. Present the elements in different orders. With four elements, we have 4x3x2x1 or 24 orders (4!, four factorial orders)
2. Create a family of typing tools, some with three elements, some with four elements. For each typing tool, create the classification function, allowing anyone to be 'typed' using as few as three questions. Figure 6.5 shows one of these alternative typing tools, allowing us to type a person with three, rather than four questions. The questions comprise a subset of the four elements we identified as being able to separate the two segments (see Table 6.6)

Figure 6.5: Screen shot of a three-element typing tool for the wrongful dismissal case



The feedback sheet for Segment 1

1. For practical application, develop a feedback sheet, which is fine-tuned to each segment.
2. For our particular example, first let us assume that we are we fall into Segment 1 (for Kathy).
3. What do we say to a Segment 1 person when we are the lawyer who represents Village Estates? Figure 6.6 shows us what to communicate to the segment 1 Person.
4. What do we say to a Segment 1 person when we are the lawyer who represents Kathy?. Figure 6.7 shows us what to communicate to the Segment 1 person.

Figure 6.6: Feedback sheet for those people falling into Segment 1. The feedback sheet is fine tuned for the lawyer representing Village Estates.

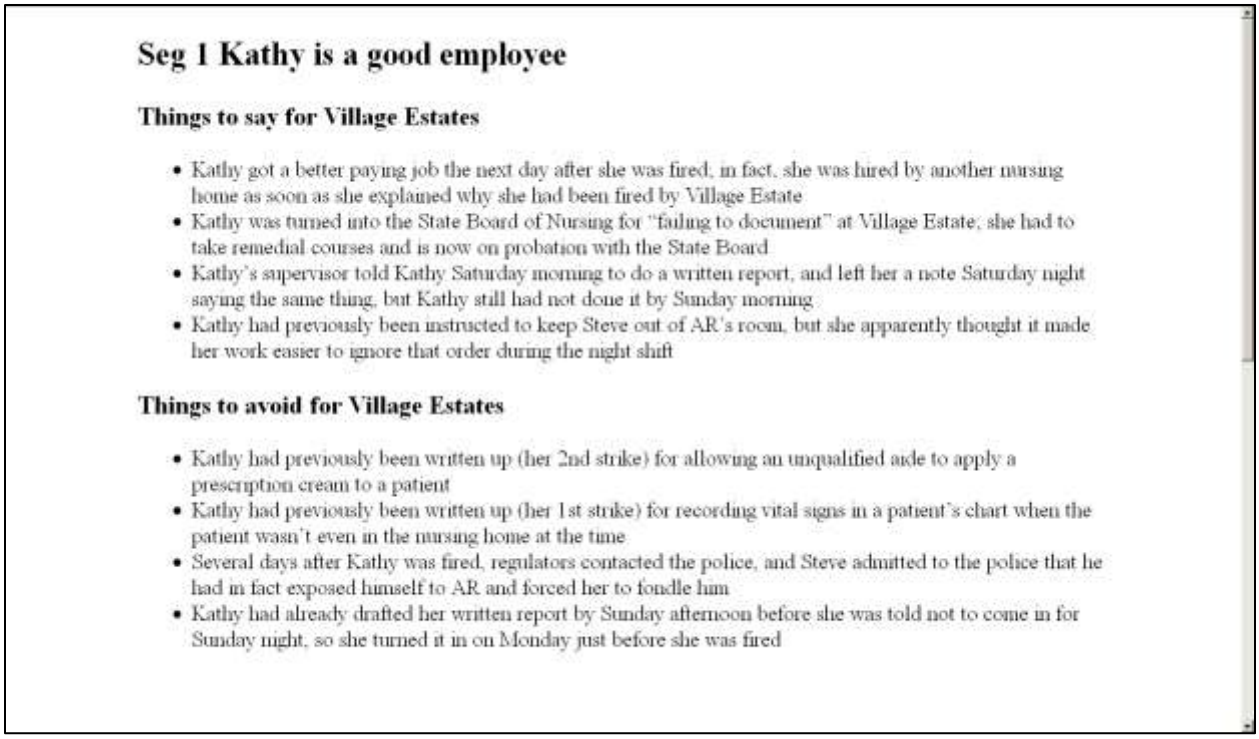
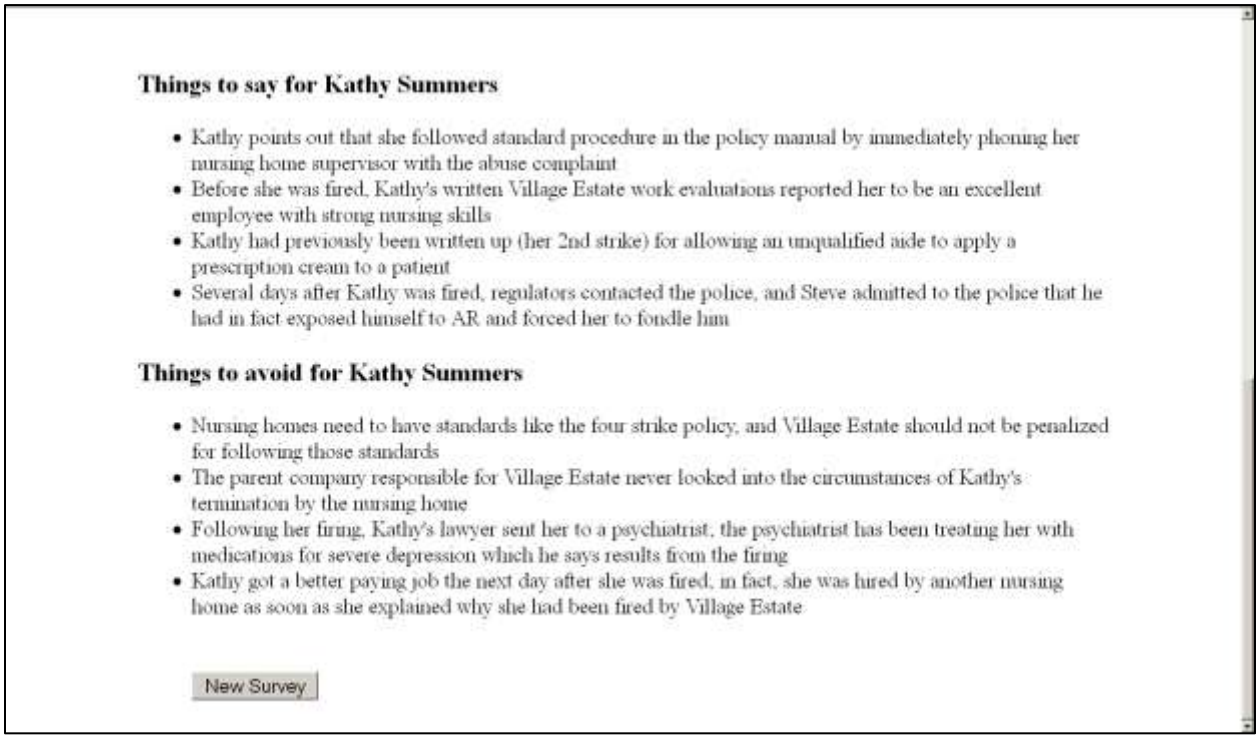


Figure 6.7: Feedback sheet for those people falling into Segment 1. The feedback sheet is fine tuned for the lawyer representing Kathy Summers.

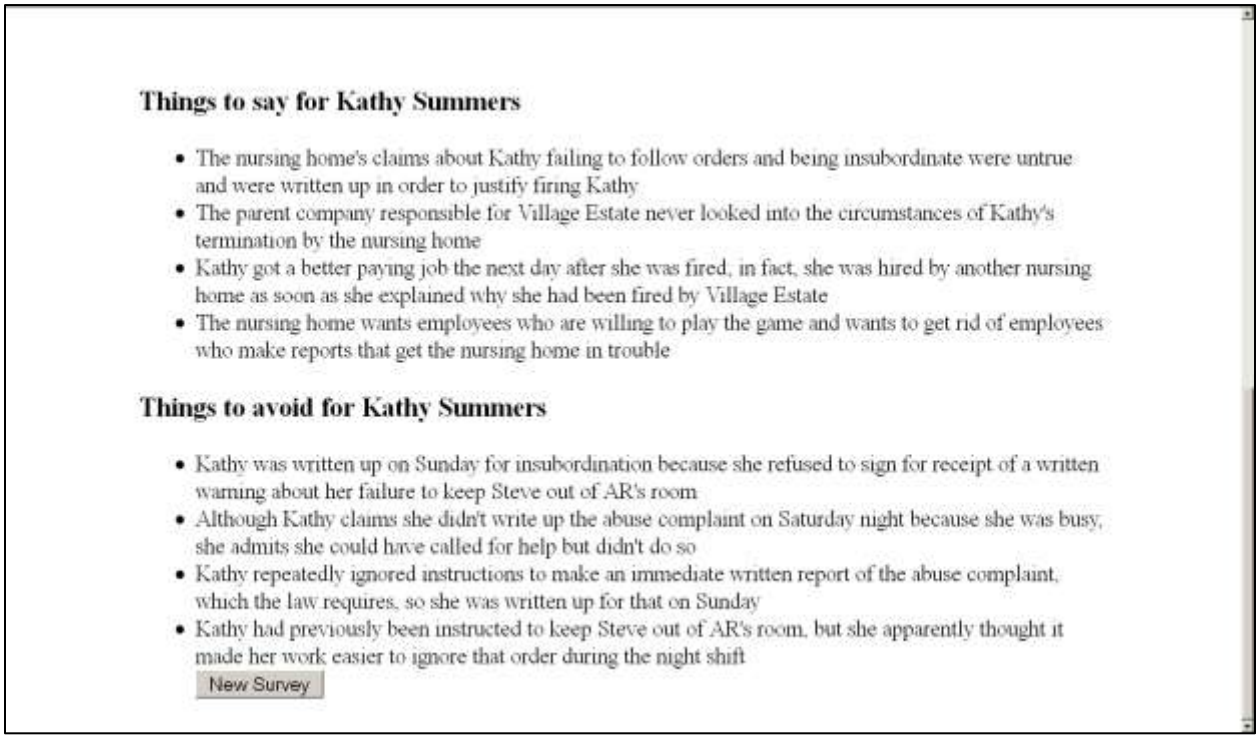


5.

6. Now let us assume we do the typing, but this time the person is assigned to Segment 2 (i.e., the nursing home, Village Estates, is bad).
7. What do we say to a Segment 3 person when we are the lawyer who represents Village Estates? Figure 6.8 shows us what to communicate to the segment 2 Person.
8. What do we say to a Segment 2 person when we are the lawyer who represents Kathy?. Figure 6.9 shows us what to communicate to the Segment 2 person.

Figure 6.8: Feedback sheet for those people falling into Segment 2. The feedback sheet is fine tuned for the lawyer representing Village Estates.

Figure 6.9: Feedback sheet for those people falling into Segment 2. The feedback sheet is fine tuned for the lawyer representing Kathy.



Chapter 7
Aggravated Robbery

Introduction

In the United States, next to the death penalty, the most severe criminal penalty is life imprisonment without possibility of parole. When there is no murder involved, what places a defendant at risk for receiving that kind of penalty? To take it a step further, when the defendant is a juvenile, 16 years old, without any prior conviction for a violent offense, and he is accused of a home-invasion robbery in which the elderly homeowners receive scratches and bruises, what facts place this 16 year-old at the greatest risk for being sentenced to die in prison?

In a pair of similar cases, the U.S. Supreme Court recently agreed to consider whether the sentencing of a juvenile offender to life-without-parole for a non-homicide offense constitutes "cruel and unusual punishment" in violation of the U.S. Constitution's Eighth Amendment.[1] Counsel for one of the appellants states in the initial court filing: "[I]nternational standards prohibit imprisoning juveniles for life without parole. According to a 2005 study, only fourteen nations, in theory, allow juveniles to be imprisoned for life without parole, and only three nations appear to do so in practice. Outside the United States, the total number of persons serving life without parole for juvenile crimes was approximately a dozen, according to the 2005 study. By comparison, as of 2004, the United States had 2225 such persons. . . . Specifically, according to the 2005 study, only seven percent of the 2225 juvenile offenders in the United States serving life sentences without parole were convicted of non-homicides."[1]

Regardless of the constitutional merits of a life-without-parole sentence in this type of case, however, our question is a little different. When a juvenile defendant[1] stands trial in a non-homicide case and faces the prospect of being sentenced to life-without-parole, what facts are most likely to influence jurors to vote yes for that kind of sentence? Obviously this question would be relevant for any defendant facing the possibility of life-without-parole, but the question is particularly compelling for a juvenile defendant in a non-homicide case. So we went looking for a case of that description. It didn't take long to find the case of Jonas Jamar Jackson.

The Home Invasion

The story of this case opens on a Saturday morning. 83-year-old Helen Jordan[1] was watering her front lawn when she saw four young males in a car slowly driving down her street. They pulled into her front drive. One of the teenagers got out of the car, said they were having trouble finding the right house, and asked if he could use her phone. She told him he could come in to call but his friends would need to wait in the car. As she opened the front door of her house, she realized that all four of the males were behind her, and they all pushed in to her house. They immediately started eating food from the refrigerator, and then demanded to know where to find "your guns and your money." When she said she

didn't have any, they broke her telephone and then spent the next 30 minutes ransacking and searching her house. At one point she fell or was pushed to the floor (she's not sure which), and her 83-year-old husband was also pushed or hit. (Her husband is unsure of the details. Mrs. Jordan says that he is blind, diabetic and easily confused.) When the four males left, they took the couple's keys and drove off in their new Saturn automobile.

As soon as the four teenagers left, Mrs. Jordan ran out of her house and yelled to a neighbor working in the yard across the street, "Help, those guys just beat the hell out of both of us." The neighbor called 911. He noticed that Mrs. Jordan's arm was bandaged from a surgery the week before, but he didn't see any blood on her or her husband. When police arrived, they documented scratches and bruises, including a red place on Mr. Jordan's face where he said one of the males struck him with his fist.

The stolen vehicle was found later in the day with three teenage males in it. 16-year-old Jonas Jackson was not in the car, but one of the young men said Jackson had been in the car earlier with the car keys. Although crime scene technicians were able to recover fingerprints and DNA from the stolen car that matched two of the suspects, there was no match linking Jackson to the car.

Mrs. Jordan picked Jackson's photograph out of a lineup of six photographs of black juvenile males, saying he looked familiar. She told police she wasn't wearing her glasses that morning, but she says she remembers Jackson because he was the one in the driveway who asked to use her phone, and he stayed with her while the others ransacked the house. She could not identify any of the other males who were in her house. Jackson was arrested at school the next Monday. At his arraignment Jackson pleaded "not guilty.

The State's Case at Trial

The female prosecutor opened the trial of the case by telling the jury that the law has different standards for hurting someone over age 65 because older people are more vulnerable. "There was no reason to hurt Mrs. Jordan in order to steal from her. She was not fighting back or trying to harm these boys in any way, but they still pushed her around just because they could." The prosecutor explained that it didn't matter which of the males pushed or struck the Jordans. "This defendant [Jackson] participated with the others in robbing and injuring Helen Jordan and her husband, and therefore he is equally guilty for aggravated robbery regardless of who may have inflicted injury."

Jackson's defense attorney responded by telling the jury that Jackson is a defendant because he was picked out of a lineup by a lady who didn't wear her glasses. "There is nothing else linking Jonas to this case." And he reminded the jury that Jonas was only 16 years old when this occurrence happened.

The prosecution's witnesses told the story of that Saturday. The lead detective on the case first recounted how Jackson's picture was identified by Mrs. Jordan. Then Mrs. Jordan told the story of the home invasion. She said Jackson appeared to be the boss and stayed with her in the kitchen the entire time. On cross examination, she agreed that one boy did put a plate down after she asked him not to throw it. She told the jury that it took

her a couple of days after the invasion to realize that a watch and a ring in her back bedroom were gone.

The neighbor from across the street described the circumstances of his 911 call. Then a series of police officers testified to arriving on the scene, documenting what had happened to the Jordans, and ultimately finding the stolen Saturn later in the day with three boys in it.

The state next called as a witness one of the boys, Sean, who was arrested running from the stolen vehicle. Sean denied being part of the home invasion, but said that Jackson had offered him a ride in the Saturn later that same afternoon. According to Sean, at some point Jackson left the automobile, and the police subsequently stopped the vehicle with Sean still in it. On cross examination, Sean admitted to being currently charged with assault in a separate incident, with trial pending, but denied that he had made any deal with the prosecution. He admitted trying to run when the Saturn was stopped by police.
Subsequent crime scene investigators were called to testify. They described and showed pictures of the Jordans' scratches and bruises. They testified to finding condoms and a rap CD titled "Chopped and Screwed" in the recovered Saturn. They also admitted to finding no physical evidence linking Jackson to either the home crime scene or the car, but said that was not necessarily unusual. With that, the state rested its case. The prosecution's witnesses had taken slightly more than one day to present, including cross examination.

The Defense Case

The attorney for the defendant called Jackson's grandmother, Mrs. Jackson, as the first defense witness. Mrs. Jackson had helped raise her grandson, along with his seven siblings, and young Jackson was living with her at the time of the home invasion. Mrs. Jackson testified to her recollection of Jackson being at home eating breakfast on the morning of and during the same time as the reported home invasion. She said he didn't leave the house until late that morning, going to see his grandfather who lived in a separate residence. On cross examination by the prosecutor, Mrs. Jackson agreed that she had not reported this evidence to the police after her grandson's arrest, and instead had told only the defense attorney. She also admitted to having been previously arrested for theft and forgery.

Jackson's grandfather, Mr. Jackson, testified next. He said he remembered Jackson coming to his house late that Saturday morning. His grandson was walking, not driving any car, and he was alone. On cross examination, Mr. Jackson admitted spending time in jail himself for possession of an illegal substance.

The defense attorney also subpoenaed one of the state's forensic scientists to testify to his DNA findings from examination of the Saturn immediately after it was recovered. The forensic scientist admitted taking DNA swabs from the steering wheel and finding matches to other individuals, but not to Jackson. On cross examination by the state, he agreed that the failure to find a match with Jackson did not mean Jackson was uninvolved. He noted that there had been no DNA evidence found that matched the Jordans to the car either, even though they owned it.

The defense attorney did not call his client Jackson to testify. Following three witnesses, the defense rested. The defense case had consumed part of one day.

The Jury's First and Second Verdicts

The prosecutor argued to the jury that the state's case was proven by direct eye witness identification. The defense attorney argued that the eye witness identification was tenuous, and there was simply no physical evidence of any sort connecting Jackson to the home or to the stolen car. The jury agreed with the state. It took the jurors less than __ hours to conclude that the state had established Jackson's guilt beyond reasonable doubt. But the jurors' job wasn't done. As the judge explained, it was now time for the jury to consider the appropriate punishment for Jackson. And the jurors would have the opportunity to hear additional testimony to help them make that decision.

The state started this new round of testimony by calling Bruce Gidron, the news anchor for the local ABC television station. Gidron told the jury of a different day, one when he said he had also encountered young Jackson and friends. After dinner one evening, Gidron and his wife and a visiting newsman from out of town decided to walk in the neighborhood. Several blocks from home, they encountered a group of young males. One of the boys kicked at Gidron's dog. Another asked for Gidron's cell phone, and a third asked for twenty dollars. After Gidron said he didn't have his cell phone or twenty dollars with him, one of the males knocked him down and another pulled a gun. That's when he remembered Jackson saying to the male with the gun, "Shoot him. Just get it over with and fucking shoot him, nigger." No shot was fired. On cross examination, Gidron agreed that he did in fact have his cell phone but had decided against giving it up.

Next, the state presented Ed Stans, age 75. He told the jury of an encounter with three teenage males who came up on his front porch, overpowered him, and held him at knifepoint while one of the boys went into Stans' house to find his car keys. Stans wasn't hurt, but the teenagers took his car. Stans identified Jackson as the male who went into his house and took his car keys.

Stans was followed by the police officer who investigated the robbery of Stans. The officer said he had to calm Stans down before Stans could tell the story of what happened. The inside of the house was dusted for fingerprints but no useable prints were recovered. Stans' car was subsequently found and recovered.

The next several witnesses gave the jury more background on Jackson. Multiple police officers testified to Jackson having a reputation for being a trouble maker and not being a law abiding citizen. He had grown up living with his mother and grandmother and seven other children. He was 9 years old when police officers started dealing with him. At one point he was listed on the local juvenile probation department's Top Ten Most Wanted List.

One of Jackson's former juvenile probation officers explained that Jackson was put into a one-month juvenile boot camp program when he was 13, for evading arrest and violation of probation. Although he completed the program, he refused to participate

afterward in counseling or other voluntary juvenile probation programs intended to assist juveniles. The probation officer expressed her belief that juvenile rehabilitation had not been effective for Jackson. At age14 he was put into juvenile custody for attempted burglary of a habitation and robbery. He has been investigated for engaging in organized crime. The only positive testimony from these witnesses was that Jackson tends to be respectful and quiet in personal interactions.

The last witnesses told the jury of one final robbery, which took place later the same day as the robbery of the Jordans. Three teenage males broke into a home where a grandmother, a 13-year-old granddaughter, and an elderly military veteran lived. The three boys were driving a Saturn matching the description of the one stolen earlier from the Jordans. The teenagers forced their way into the house, used the phone and demanded money. The granddaughter was able to identify two of the males, but not the third. She did not identify Jackson as being one of the males. Jackson was seen by a different witness later in the day riding in the Saturn with three other boys.

There were no witnesses called by the defense. In final argument, the state prosecutor told the jury that Jackson's long history of crime will simply continue and get worse unless he receives a life sentence without opportunity for parole. The defense attorney argued that, whatever trouble Jackson has gotten into in the past, none of it has involved injury to anyone. "Age 16 is too early to write off a young man who has never been convicted of a violent crime, and who has not committed any violent act in this case. . . The claim of 'bodily injury' is this case is a complete stretching of the facts, simply to give the prosecution the chance to ask for a life sentence for something done by a 16-year-old boy." The jury disagreed with the defense attorney's assessment. Jackson was sentenced to life in prison without opportunity for parole.

ENTER RDE (Rule Developing Experimentation)

As have seen in the previous chapters, legal cases provide us a set of facts and arguments that could be made in support of those facts. One objective of the lawyer for each side is to present those facts which are most cogent, most relevant to the case, and of course most favorable to the client. In many cases some of the facts are obvious, but there are other facts which may either directly contradict these cogent facts, or weaken them.

With RDE we will structure the case into different silos, different groups of arguments, select in this situation six alternative statements for each silo, and present mini arguments of 3-4 elements, selected according to what researchers call an 'experimental design.' The design specifies which particular combinations of arguments to create and test. Each of our test respondents, mock electronic jurors, will evaluate 48 of these combinations, each combination comprising 3-4 elements, no more than one element from a silo. The respondent will rate each combination, also called a vignette or test concept, one two rating scales of our choice. Those rating scales will deal with not guilty versus guilty (question 1), and with punishment (parole within 5 years versus life sentence without parole).

Here is the specific wording of the rating question. For each vignette the respondent will see, the RDE program will instruct the respondent to answer the first rating question, make the question (and answer) disappear, and then present the second rating question. After the respondent has finished this vignette, the RDE program proceeds to the next vignette.

1. Based on the testimonies you see, how would you find the defendant (Jackson)?
1= Definitely not guilty ... 5 = Not sure ... 9 = Definitely guilty

2. If proven guilty, what sentencing do you think is appropriate for the defendant (Jackson)?
1 = More towards 5 years with probation ... 9 = More towards life sentence

Creating the raw materials for the case – rationales for the silos

Each silo comprises a specific type of information, e.g., prosecution framing. There is an art to abstracting the proceedings of a case, or creating a case ahead of time. The set of six silos presents us with a story. When we weave together the elements, one element from a silo, into the 3-4 elements in a vignette, we get a feeling of the case.

For this study, here is the sequence of silos created, and the rationale for each:

1. Prosecution framing, metaphors and arguments (i.e. positioning statements that might be used by the prosecution to frame the facts positively for the government's case)

2. Defense framing, metaphors and arguments (i.e. positioning statements that might be used by the defendant to frame the case positively for the defendant or negatively for the prosecution)

3. Objective evidence (i.e. evidence that appears verifiable by an independent source, such as a scientific test or an independent witness)

4. Subjective evidence (i.e. evidence that is not independently verifiable and rests on the credibility of the witness)

5. Moral and social factors (i.e. considerations by jurors focusing on the morality of their verdict or the ultimate effect of their verdict, positively or negatively, such as considering who really deserves what, and whether the verdict will stop other wrongdoing)

6. Collateral factors (i.e. factors that logically have no relation to the issue but which nevertheless may affect the decision at an intuitive, illogical level)

Mechanics - Introducing the study to a respondent

The goal of RDE is to learn, to discover what elements 'drive' the ratings. As such, each of the 36 elements for the case will appear five different times in the 48 vignettes, making it virtually impossible for the respondent to 'game' the system.

Respondents who participate in these RDE studies often do so through the Internet. We don't see them, but we can instruct a 'field service' to provide us with respondents who fit specific criteria. The 'who' of the respondents is not yet relevant, here. It will be later on when we look at the data. The important thing to know is that the respondents are most likely new to the evaluation of vignettes for the law, and more than likely the vast majority of our respondents have never served either as jurors in an actual case, or as mock jurors.

We introduce the facts of the case through a one page screen, shown in Figure 7.1. The screen is longer than typical RDE screens used to study products or services, e.g., buying a car, taking a vacation., RDE deals with the facts of everyday life. There are no detailed arguments setting up a new situation. Most people know about cars and vacations. The situation is different for a legal case. There are specific facts in the case, facts known to be true, facts that are absolutely important for the respondent to 'incorporate' in his thinking. ***These are background facts that every respondent must know ahead of time, and could not know except by reading the orientation screen***.

Figure 7.1: Introductory or orientation screen for the aggravated robbery case

The following concepts you are about to see refer to:

Criminal prosecution of a juvenile certified to stand trial as an adult for aggravated robbery

On a Saturday morning, 83-year-old Helen Jordan was watering her front lawn when she saw four young males in a car slowly driving down her street. They pulled into her front drive. One of the teenagers got out of the car, said they were having trouble finding the right house, and asked if he could use her phone. She told him he could come in to call, but his friends would need to wait in the car.

As she opened the front door of her house, she realized that all four of the males were behind her, and they all pushed in to her house. They immediately started eating food from the refrigerator, and then demanded to know where to find "your guns and your money." When she said she didn't have any, they broke her telephone and then spent the next 30 minutes ransacking her house. At one point she fell or was pushed to the floor, and her 83-year-old husband was also pushed around or hit. When the four males left, they took the couple's keys and drove off in their new Saturn automobile.

Jackson Jones, age 16, has been arrested and charged with the crime of aggravated robbery. Although Jackson is a juvenile, he has been certified by the court to stand trial as an adult. A person commits aggravated robbery if he intentionally or recklessly causes bodily injury to a person over age 65 during the commission of a robbery. If guilty, punishment can range from 5 years with probation, up to a life sentence.

The prosecution has the burden to prove its case beyond reasonable doubt.

Please take your time and read each trial testimony. Once you have read the testimony, please enter your rating based on the following 2 questions based on a 9 point scale. The entire testimony should be rated as a whole.

Based on the testimonies you see, how would you find the defendant (Jackson)?
1=Definitely not guilty ... 5=Not Sure ... 9=Definitely guilty

If proven guilty, what sentencing do you think is appropriate for the defendant (Jackson)?
1 = More towards 5 years with probation ... 9 = More towards life sentence

PLEASE USE THE ENTIRE 1-9 SCALE

The vignettes (Figures 7.2 and 7.3)

The heart of the RDE study is the vignette, which combines elements from silos. The respondent, reading the vignette, must react to the entirety of the information. Figure 7.1 shows an example of the vignette for one respondent, with the instruction to rate the innocence versus guilt, based on the vignette. Figure 7.2 shows the same vignette, this time instructing the respondent to select the appropriate punishment for the actions describe by the vignette.

Figure 7.2: Vignette describing actions by Jackson, with instructions to rate the guilt versus innocence based on the vignette

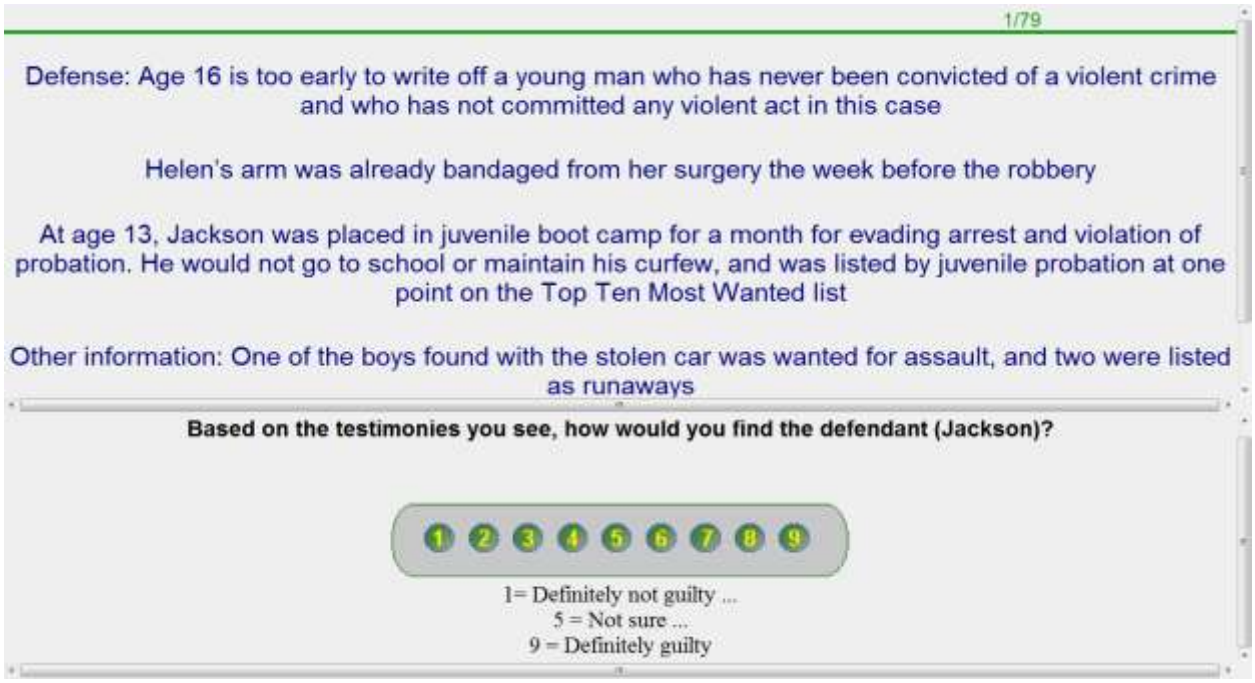
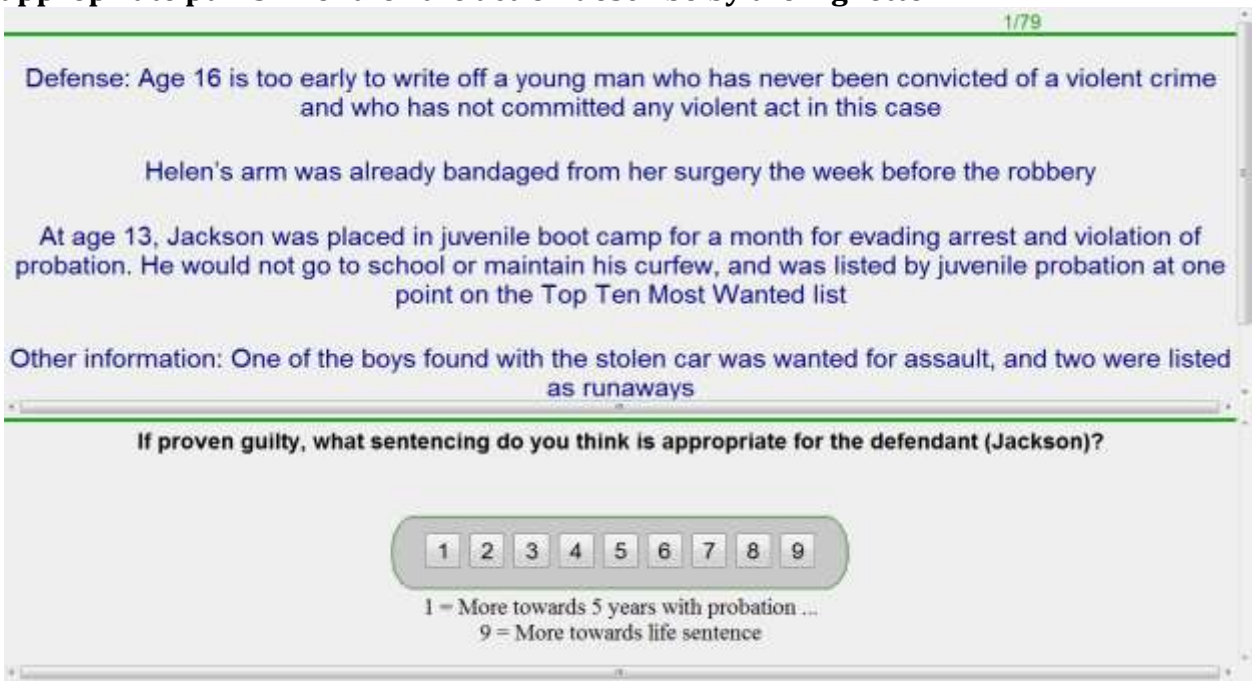


Figure 7.3: The same vignette, this time instructing the respondent to choose the appropriate punishment for the action describe by the vignette

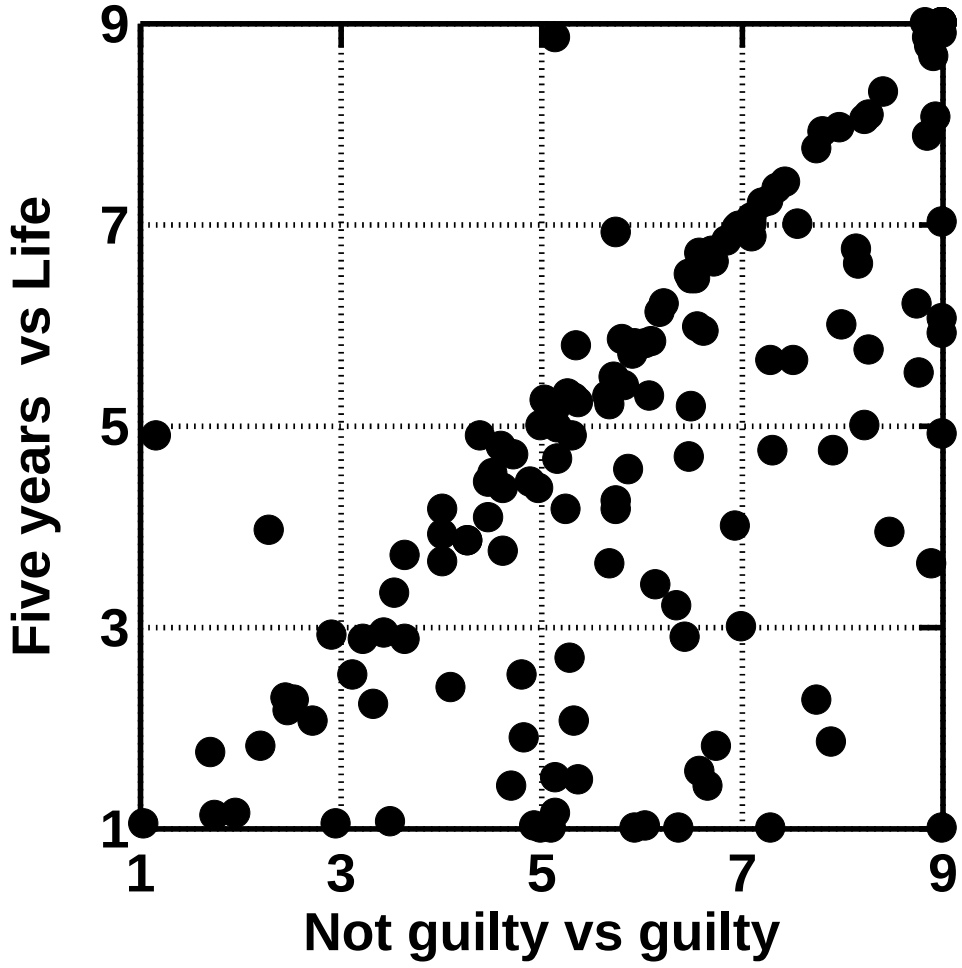


<u>Do respondents 'know' the appropriate punishment for a degree of guilt? (Figure 7.4)</u>

Let's begin our analysis by looking at the relation between the perceived guiltiness for a crime (question #1) and the assigned punishment (question 2). Each of our 156 respondents evaluated 48 vignettes, rating each vignette on both likelihood of guilt and

appropriate punishment. The 48 vignettes evaluated by one respondent can be treated as 48 pieces of data, whose ratings can be averaged, to generate the mean for that respondent for rated likelihood of guilt, and a mean for that respondent for assigned punishment. Figure 7.4 shows us a scatterplot of the 157 means, one filled circle corresponding to each respondent. It is clear from Figure 7.4 that for a great proportion of the respondents, the punishment matches the assessment of guilt. It may not be because the respondent really 'knows' the appropriate punishment for a crime. It may be, in fact, just the opposite; the respondent does not known the appropriate punishment, and so the punishment ends up fitting the degree of guiltiness because both are rated on a 9-point scale of increasing magnitude.

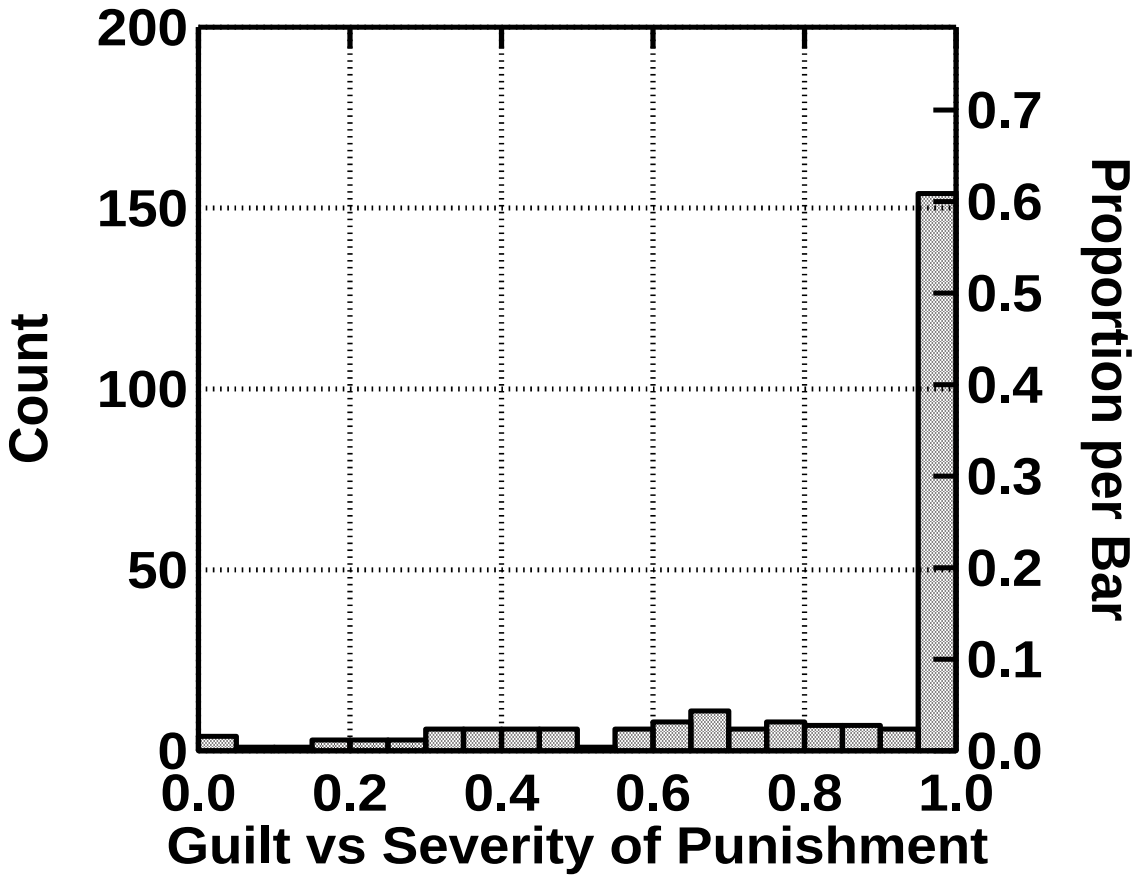
Figure 7.4: Scatterplot of the relation between the mean (average) of 48 ratings of likelihood of guilt (abscissa), and the appropriate punishment (ordinate). The punishment increases with the perceived likelihood of being guilty, although there is no logical reason for it to do so. The scatterplot suggests that respondents may not be able to assess appropriate punishment for a crime.



The apparent 'inability' of respondents to differentiate between the likelihood of guilt (question 1) and the degree of punishment (question 2) is even more striking when we look at the patterns described by the ratings of each respondent. We can compute the Pearson R (correlation) between the two questions, likelihood of guilt and severity of punishment. Each respondent gives us a robust sample of 48 paired judgments, using which judgments we compute the Pearson R. The Pearson R statistic varies from a low of -1 (perfect inverse linear relation) to a midpoint of 0 (no relation at all between the ratings of question 1 and question 2), to a high of +1.

Figure 7.5 shows us the distribution of 157 values of the Pearson R statistic, one value from each of the 157 respondents. Figure 7.5 is startlingly clear. The correlations cluster around 1.0, suggesting that even at the individual level, there is no clear difference between the rating of likelihood of guilt and the degree of punishment, at least here where we focus on different arguments for the same case.

Figure 7.5: histogram showing the distribution of Pearson R statistics for 157 respondents. Each respondent evaluated 48 vignettes for aggravated robbery, variants of the same case, rating each vignette both on likelihood of guilt (not guilty ...guilty), and on punishment (5 years with probation versus no parole)



How elements 'drive' the rating of guilty and the severity of punishment (Table 7.1)

The essence of the RDE exercise is to identify the degree to which each individual element in the set of 36 'drives' the response, whether the response be the vote of not guilty to guilty, or the vote for an increasing punishment, ranging from a low of 5-years with probation to life in prison without chance of parole.

Our approach in RDE is to focus on membership in one of two groups, those voting not guilty or neutral or slightly guilty (the low guilt group, ratings 1-6, transformed to 0), and its complement, those voting strongly and very guilty (the high guilt group, ratings 7-9 transformed to 100).

Doing the transformation allows us to deal in absolutes, in no versus yes, both in our evaluation of the guilt and our assessment of the punishment. We know that people are capable of graded evaluations, but in a practical situation we want to prescribe only two outcomes for each variable (outcome 1 = no/low guilt; outcome 2 = moderate/high guilt). It's easier that way for the legal apparatus to deal with.

We make these binary transforms on the two ratings assigned, the first from the question about degree of guilt, the second about the amount of the fine. Our preliminary

analyses showed that these two questions were often highly correlated. Nonetheless, we shall go through our analysis, treating each rating scale differently.

Through RDE we create simple models at the individual respondent level relating the presence/absence of the 36 messages about the case to the two ratings. The equation is the linear equation. We build two models, the Persuasion Model and the Interest Model.

1. Both equations, the Persuasion Model and the Interest Model, are created for the data from one respondent, each respondent in turn having his data gone through by the OLS regression program

2. The Persuasion Model uses the original 9-point rating values as the dependent variable. We don't talk very much about the Persuasion Model, other than to use it when we do clustering or segment. The focus of the Persuasion Model is on the strength of feeling.

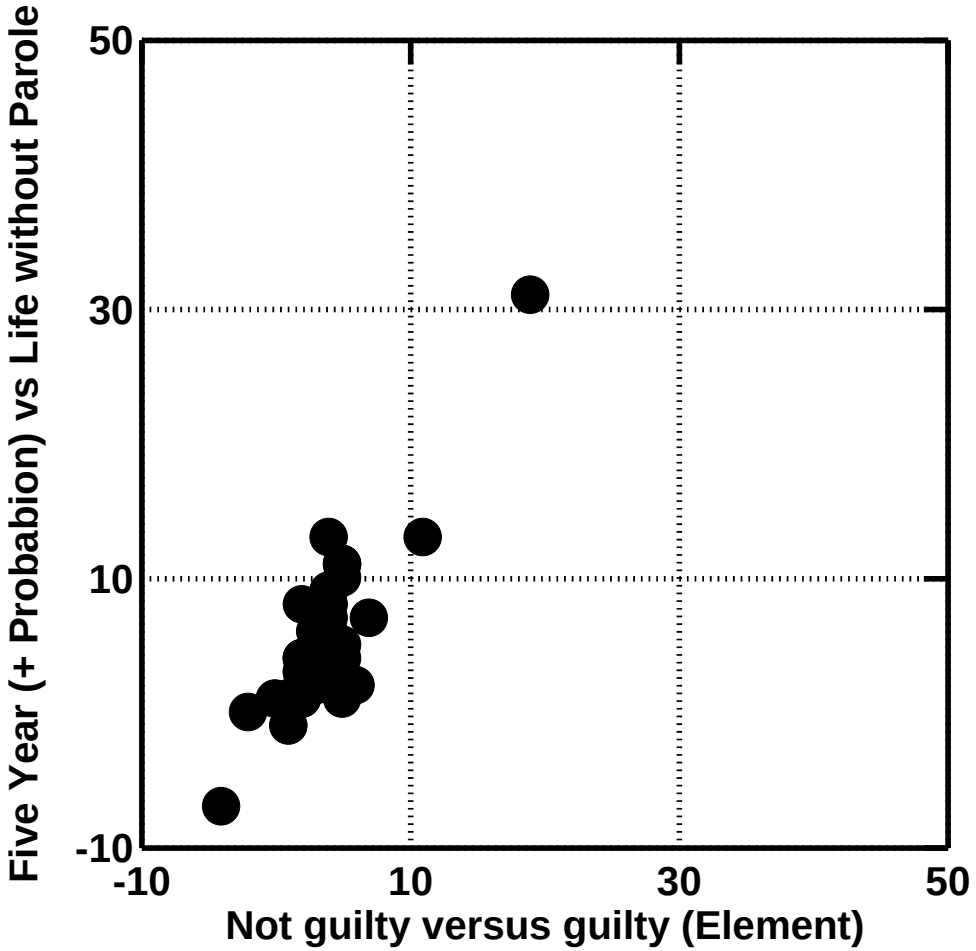
3. The Interest Model, in contrast, uses the binary numbers, 0/100, as dependent variables.

4. We know that each of these two equations has two parts, the first being an additive constant, and the second being a vector or array of 36 impact values , i.e., multiplying coefficients, one impact value per element

Even before we look at the specific performance of the individual elements, where all the cognitive richness lies, let's check our earlier discover that respondents don't appear to differentiate between the likelihood of being guilty (question 1), and the severity of punishment (question 2). That is, we saw high covariation in question 1 versus question, both from the mean ratings of question 1 versus question (Figure 7.4), and from the correlations of the two sets of ratings assigned by each respondent (Figure 7.5).

When we plot the impact values for question 1 versus question 2, based upon the average of 157 separate pairs of individual INT models, we see the same story a third time; respondents cannot easily separate probability of guilt from degree of punishment. Figure 7.6 shows us 36 filled circles, many atop each other. Each filled circle corresponds to one of the 36 elements. We see a clear linear relation between the impact of guilt (additive conditional probability that the respondent will rate Jackson 'guilty', i.e., 7-9, and the additive conditional probability that the respondent will assign to Jackson a life sentence without parole. Although we may seem to belabor the point, we feel that this is a major discovery. We are talking about one crime here, but in the mind of the respondent degree of punishment seems to be related to probability of being guilty.

Figure 7.6: Scatterplot showing the covariation of the impact values for 'not guilty versus guilty' (question 1, abscissa), and the impact values of punishment (Five years and probation versus life without parole, ordinate). Each filled circle corresponds to the impact for one of the 36 test elements in the case. The data come from the total panel, with the impacts averaged from the 158 individual level models



The essence of our information comes from the actual impact scores of the individual elements. The strongest performing elements appear in Table 7.1, the first data column presenting the impact values from the Interest Model for question 1 (not guilty versus guilty), and the second data column presenting the impact values from the Interest Model for question 2 (5 years & probation versus life without parole). By 'strong performing' we mean elements which generate an impact value of +7 or higher on either question1 or question 2, respectively.

Only about a third of the elements can be said to perform strongly, so Table 7.1 is by its very nature incomplete. Nonetheless, the patterns are such that the data tell us a story:

1. The additive constants are low, 19 for question 1 (likelihood of guilty), and 31 for question 2 (severity of punishment). It is the elements which must do the work of convincing the respondent, and therefore the jurors.

2. Looking at question 1 (not guilty versus guilty), there is only one element which acts as a strong driver towards guilt. This element paints a vivid word picture of what

happened, providing an immediacy which reinforces the story of what happened: *A local news anchorman says he and his wife were previously robbed at gunpoint by Jackson and 3 other boys. Jackson said to the one with the gun, "Shoot him. Just get it over with and shoot him, nigger." They didn't shoot*

3. Although overall the impacts show us that the drive towards guilty and the drive towards a punishment of life without parole correlate high, following almost a straight line, a couple of elements break away from that high correlation, so that the drive for the guilty verdict is weak (low impact), but the drive towards a severe punishment is high. Here is one of them, with the focus on the severity of the crime, rather than on who exactly committed the crime: *Prosecution: Jackson participated with others in robbing and injuring Helen Jordan and her husband, and therefore Jackson is equally guilty for aggravated robbery regardless of who actually may have inflicted injury.* The(impact for question 1 dealing with Jackson's guilt is +4, impact for question 2 dealing with the severity of punishment is +13. It is clear that when guilt and crime severity are publicly differentiated in the statement itself, respondents do differentiate between guilt and punishment.

4. We do not find opposite case, however, namely a high impact for guilt, but a low impact for severe punishment.

Table 7.1: How elements 'drive' the rating of guilty and the severity of punishment

		Not guilty versus guilty	5 Years & probation versus life without parole
	Base Size	158	158
	Additive constant	19	31
E4	A local news anchorman says he and his wife were previously robbed at gunpoint by Jackson and 3 other boys. Jackson said to the one with the gun, "Shoot him. Just get it over with and shoot him, nigger." They didn't shoot	**11**	**13**
A3	Prosecution: There was no reason to hurt Helen in order to steal from her. She was not fighting back or trying to harm the boys in any way, but they still pushed her around just because they could	7	7
A4	Prosecution: Jackson has a long history of criminal charges, including investigation for engaging in organized crime	5	**11**
E1	At age 13, Jackson was placed in juvenile boot camp for a month for evading arrest and violation of probation. He would not go to school or maintain his curfew, and was listed by juvenile probation at one point on the Top Ten	5	**11**

	Most Wanted list		
A2	Prosecutor: Jackson and his friends forced their way into Helen Jordan's house, ransacked her things, and took anything they want	5	**10**
B4	Defense: Jackson's teachers will tell you that he is respectful and quiet in class, but that he has been pulled in the wrong direction outside of class, and the police are ready to send him away	4	8
E3	Ed Stans, aged 75, says he was previously overpowered on his front porch by three young males. One was Jackson, who had a knife and went into Stans' house to find his car keys. Stans wasn't hurt, but they took his car	4	9
C2	Helen and her husband received scratches and bruises during the robbery, and her husband had a red place on his face where he said one of the males struck him with his fist	4	7
A5	Prosecution: Jackson participated with others in robbing and injuring Helen Jordan and her husband, and therefore Jackson is equally guilty for aggravated robbery regardless of who actually may have inflicted injury	4	**13**
E6	Lots of local police officers say that Jackson has a reputation among law enforcement for not being a peaceful and law abiding citizen	2	8
C5	Crime scene technicians recovered fingerprints and DNA from the stolen car that matched two of the suspects, but there was no match linking Jackson to the car	-4	-7

Gender Differences (Table 7.2)

This may be the type of case in which gender differences are significant. We discover those differences by looking at the impacts from the males versus the impacts from the females. RDE works from the 'bottom up,' creating a model at the individual level, not caring who the respondent is. When looking for subgroup differences, we need only somehow identify the relevant subgroups, e.g., gender in this analysis, and average the corresponding impacts of the respondents in the key subgroups under consideration.

When males differ dramatically from females in their response to the elements, such differences could be crucial in jury selection. Elements showing dramatic gender differences appear in Table 7.2.

1. Males were influenced in favor of the prosecution more strongly than were females by 26 out of the 36 elements. *That is, in more than two thirds of the elements, the impact for question 1 (not guilty – guilty) was higher for males than it was for females.*

2. In particular, there was a marked gender difference in favor of the prosecution by males in reaction to seven of these elements where the difference in impact was at least 6 points of more. Recall that the impact from the Interest Model tells us the incremental percent of respondents who would switch their vote from not guilty (or low probability of guilt) to high probability of guilt, were the element to be inserted into the argument.

Table 7.2: Elements for which males show a markedly higher impact than do females for 'guilty' (question 1)

	Element Text	Total	Male	Female	Difference
		Impact of element for question 1 – not guilty versus guilty			
A2	Prosecutor: Jackson and his friends forced their way into Helen Jordan's house, ransacked her things, and took anything they wanted.	5	9	0	**9**
B3	Defense: Jackson is a defendant because he was picked out of line-up by a lady who didn't wear her glasses. There is nothing else linking Jackson to this case.	5	9	0	**9**
C6	Helen picked Jackson's photograph out of a line-up of 6 photographs of black juvenile males.	2	6	-2	**8**
B1	Defense: No one, not even Helen Jordan, says that Jackson personally inflicted any injury to her or her husband.	-2	1	-6	**7**
A3	Prosecution: There was no reason to hurt Helen in order to steal from her. She was not fighting back or trying to harm the boys in any way, but they still pushed her around just because they could.	7	10	4	**6**
E5	Jackson's juvenile probation officer describes Jackson as generally respectful and compliant, until he stopped reporting to her. She would like to believe that he could be rehabilitated, but says the past is the best predictor of the future.	3	6	0	**6**
F2	The Judge: Jackson is presumed innocent. He is not required to testify, and the jury cannot consider the fact that he is not testifying in this case as any evidence of guilt.	1	4	-2	**6**
E6	Lots of local police officers say that Jackson has a reputation among law enforcement for not being a peaceful and law abiding citizen.	2	-1	5	**6**

Although we can only hypothesize about the possible reasons for these gender differences, several possibilities come to mind.

1. It is possible that men react more negatively toward males who bully others than do women. Notice the extent of variance between males and females in response to these elements:

    a. *Prosecutor: Jackson and his friends forced their way into Helen Jordan's house, ransacked her things, and took anything they wanted. (Variance of 9)*

    b. *Prosecution: There was no reason to hurt Helen in order to steal from her. She was not fighting back or trying to harm the boys in any way, but they still pushed her around just because they could. (Variance of 6)*

2. It is possible that men may be willing to give up more quickly on problematic juveniles than women (at least until a long criminal history is demonstrated). Consider the extent of variance between males and females in response to this element::

    a. *Jackson's juvenile probation officer describes Jackson as generally respectful and compliant, until he stopped reporting to her. She would like to believe that he could be rehabilitated, but says the past is the best predictor of the future. (Variance of 6)*

3. It is possible that women may be more willing than men – at least with this juvenile defendant – to presume he is innocent until proven guilty.

    a. *The Judge: Jackson is presumed innocent. He is not required to testify, and the jury cannot consider the fact that he is not testifying in this case as any evidence of guilt. (Variance of 6)*

4. It is possible that women may be more forgiving than men of juvenile crime in which there is no significant injury.

    a. *Defense: No one, not even Helen Jordan, says that Jackson personally inflicted any injury to her or her husband. (Variance of 7)*

5. It is possible that female jurors may be less trusting than male jurors of female witnesses, at least in this type of case. Whether this is the accurate explanation or not, the variances are striking.

    a. *Defense: Jackson is a defendant because he was picked out of line-up by a lady who didn't wear her glasses. There is nothing else linking Jackson to this case. (Variance of 9)*

    b. *Helen picked Jackson's photograph out of a line-up of 6 photographs of black juvenile males. (Variance of 8)*

6. What do we see when we look at the elements which trigger a **stronger pro-prosecution reaction among women than men**? Of the 9 elements which appear in this category, most reflect a relatively negligible variance, with one exception:

    a. Lots of local police officers say that Jackson has a reputation among law enforcement for not being a peaceful and law abiding citizen. (Variance of 6)

7. On the whole, we see some marked difference between male and female reactions to this case. Conventional wisdom, without the benefit of this study before trial, might suggest that the prosecution would seek to capitalize on jurors' fears, and that female jurors might be the most receptive to such an approach. The results of this study potentially turn that conventional wisdom on its head. The data suggest that female jurors are less receptive teo such an approach.

8. If we had the benefit of just this one study before trial, we would probably recommend two strategies:

    a. *Reserve preemptive jury strikes for jurors with aggressive personalities who might be inclined to react most quickly and negatively toward a perceived bully. Favor jurors who might be more sympathetic toward a juvenile. (This advice may tend to eliminate more male than female jurors, although it is the personality rather than the gender that should be determinative. If there were opportunity for a second study, we would follow up with questions directed more specifically to differences in assessment between differing personality types.)*

    b. *In argument and examination, stress the multiple opportunities which the juvenile (supposedly Jackson) had to inflict harm and yet chose not to do so. Especially emphasize the fact that the juvenile (supposedly Jackson) chose to stay by Mrs. Jordan's side throughout the time in her home, and she has no specific memory of him hitting her, pushing her, or otherwise harming her. In fact, it's possible that he may have been protecting her from assault by the others.*

Initial Assessment of Results: The Most Powerful Statement in the Case (Table 7.3)

We now come to the most problematic element of the case story. It becomes especially problematic in light of the above-mentioned strategy: *In argument and examination, stress the multiple opportunities which the juvenile (supposedly Jackson) had to inflict harm and yet chose not to do so.*

One element above all stands out as a problem for Jackson, the element F4 in Table 7.3:

Table 7.3: How element F4 performs among the total sample, among males versus females, and the gender difference in performance.

	Element Text	Total Sample	Male	Female	Variance Between Males and Females
F4	A local news anchorman says he and his wife were previously robbed at gunpoint by Jackson and 3 other boys. Jackson said to the one with the gun, "Shoot him. Just get it over with and shoot him, nigger." They didn't shoot.	11	11	10	1

1. With this element, there is essentially no difference between male and female respondents. Both men and women show a massive negative reaction toward Jackson when this element is presented.

2. There are at least two possibilities for explaining this reaction. One possibility is racial. The other possibility is inevitability.

3. Race: The wording of this element introduces a picture of black assailants. In a second study it would be possible to test the role that race might play by alternately testing "pictures" of the defendant, with one picture depicting a white defendant and another depicting a black defendant. But with just this element alone, we don't know to what extent, if any, race is a factor.

4. Inevitability: There is another possibility for this reaction that may be even more plausible, although again we are only hypothesizing at this point. Element F4, a statement, introduces a sense of inevitability about Jackson's likely progression to violent crime. Jurors – who until hearing this statement might be willing to give him the benefit of the doubt – may very well conclude that he will eventually kill if turned loose. If this explanation for juror reactions is accurate, this statement is potentially the turning point of the case.

5. Assuming that the existence of this statement were to have been discovered before trial and included in a pretrial study, we would be alerted that every possible means to neutralize this statement has to be considered. Possibilities include:

    a. A motion *in limine* before trial, seeking to have the statement excluded as being an unfairly prejudicial statement from an extraneous offense.

    b. Extensive discussion in jury selection about the importance of actions over words.

c. Extensive discussion in witness examinations about the language and posturing that goes on between teenage males without necessarily any intent to carry out their violent words.

None of these possibilities may succeed in neutralizing the statement, and there may be other possibilities that are better. But we do know from this testing that the effect of this statement cannot simply be ignored. Its potential negative effect is too great.

What would have been the outcome for Jonas Jackson if RDE testing had been available for his case? Would he have still been sentenced to life-without-parole for this home invasion? We have no way of knowing that now. This study – conducted post-trial – is of academic interest, but obviously the potential benefit of this testing comes with its use before trial. That is the point in time when greater knowledge of the greatest dangers in the case can be used to shape the trial presentation.

Appendix to Chapter 07 The elements

Silo_A	Prosecution Framing Statements
A1	Prosecution: The law has different standards for hurting someone over age 65 because older people are more vulnerable
A2	Prosecutor: Jackson and his friends forced their way into Helen Jordan's house, ransacked her things, and took anything they want
A3	Prosecution: There was no reason to hurt Helen in order to steal from her. She was not fighting back or trying to harm the boys in any way, but they still pushed her around just because they could
A4	Prosecution: Jackson has a long history of criminal charges, including investigation for engaging in organized crime
A5	Prosecution: Jackson participated with others in robbing and injuring Helen Jordan and her husband, and therefore Jackson is equally guilty for aggravated robbery regardless of who actually may have inflicted injury
A6	Prosecution: Although Jackson is age 16, his long history of crime will simply continue and get worse unless he receives a life sentence
Silo B	**Defense Framing Statements**
B1	Defense: No one, not even Helen Jordan, says that Jackson personally inflicted any injury to her or her husband
B2	Defense: Whatever trouble Jackson has gotten into in the past, none of it has involved injury to anyone
B3	Defense: Jackson is a defendant because he was picked out of line-up by a lady who didn't wear her glasses. There is nothing else linking Jackson to this case
B4	Defense: Jackson's teachers will tell you that he is respectful and quiet in class, but that he has been pulled in the wrong direction outside of class, and the police are ready to send him away

B5	Defense: Age 16 is too early to write off a young man who has never been convicted of a violent crime and who has not committed any violent act in this case
B6	Defense: The claim of "bodily injury" in this case is a complete stretching of the facts, simply to give the prosecution the chance to ask for a life sentence for a 16 year old boy
Silo C	**Objective Evidence**
C1	Helen's arm was already bandaged from her surgery the week before the robbery
C2	Helen and her husband received scratches and bruises during the robbery, and her husband had a red place on his face where he said one of the males struck him with his fist
C3	As soon as the males left her house, Helen yelled to a neighbor, "Help. Those guys just beat the hell out of both of us." The neighbor called 911, but didn't see any blood on Helen or her husband
C4	The stolen vehicle was found later in the day with three teenage males in it. Jackson was not in the car, but one of the young men said Jackson had been in the car earlier with the car keys
C5	Crime scene technicians recovered fingerprints and DNA from the stolen car that matched two of the suspects, but there was no match linking Jackson to the car
C6	Helen picked Jackson's photograph out of a line-up of 6 photographs of black juvenile males
Silo D	**Subjective Evidence**
D1	Helen Jordan takes care of her husband, who is blind, diabetic, and easily confused
D2	Helen Jordan says she remembers Jackson because he is the one who asked to use her phone in the driveway, and he stayed with her while the others ransacked the house
D3	When the police showed pictures to Helen and asked if anyone looked familiar, she picked out the picture of Jackson, saying he looked familiar. She cannot identify any of the other males who were in her house
D4	Helen wears glasses when she wants to see, but she did not have them on when the guys were in her house
D5	Two days after the event, Helen realized that a watch and ring in her back bedroom were gone
D6	Jackson's grandmother says she fixed breakfast for Jackson as usual during the middle of the morning on Saturday. She has a criminal record for theft and forgery, and never called the police to say that Jackson was innocent
Silo E	**Moral and Social Factors**

E1	At age 13, Jackson was placed in juvenile boot camp for a month for evading arrest and violation of probation. He would not go to school or maintain his curfew, and was listed by juvenile probation at one point on the Top Ten Most Wanted list
E2	Jackson was put into juvenile custody at age 14 for attempted burglary of a habitation and robbery
E3	Ed Stans, aged 75, says he was previously overpowered on his front porch by three young males. One was Jackson, who had a knife and went into Stans' house to find his car keys. Stans wasn't hurt, but they took his car
E4	A local news anchorman says he and his wife were previously robbed at gunpoint by Jackson and 3 other boys. Jackson said to the one with the gun, "Shoot him. Just get it over with and shoot him, nigger." They didn't shoot
E5	Jackson's juvenile probation officer describes Jackson as generally respectful and compliant, until he stopped reporting to her. She would like to believe that he could be rehabilitated, but says the past is the best predictor of the future
E6	Lots of local police officers say that Jackson has a reputation among law enforcement for not being a peaceful and law abiding citizen
Silo F	**Collateral Factors**
F1	The Judge: The certification of Jackson as an adult does not suggest in any way that he is guilty
F2	The Judge: Jackson is presumed innocent. He is not required to testify, and the jury cannot consider the fact that he is not testifying in this case as any evidence of guilt
F3	Other information: One of the boys found with the stolen car was wanted for assault, and two were listed as runaways
F4	Police found drugs and condoms in the stolen vehicle, and a CD titled "Chopped and Screwed"
F5	Jackson grew up living with his mother and grandmother and 7 other children. He was 9 years old when police officers started dealing with him
F6	Jackson previously completed a one-month boot camp program, but after that has not volunteered to participate in any juvenile probation programs intended to assist juveniles, and he has refused to participate in counseling

[1] The Supreme Court announced on May 4, 2009 that it would consider the appeals of a pair of juvenile life-without-parole cases from Florida: *Terrance Jamar Graham v. State of Florida* and *Joe Harris Sullivan v. State of Florida*. The juvenile defendants in both cases were convicted of non-homicide offenses.

[2] Petition for Writ of Certiorari to the U.S. Supreme Court, *Terrance Jamar Graham v. State of Florida*, filed November 20, 2008, at pages 5 and 7, citing to Human Rights Watch / Amnesty International, *The Rest of Their Lives: Life Without Parole for Child Offenders in the United States* (2005), available at http://www.hrw.org/sites/default/files/reports/TheRestofTheirLives.pdf.

[3] We use the term "juvenile defendant" to refer to the age of the defendant, not the legal status of the defendant. In order to be sentenced to life-without-parole, the juvenile has to be certified by the trial court to stand trial as an adult.

[4] Although the identity of witnesses in this case are matters of public record, most of the names here other than that of the defendant have been changed in order to preserve privacy.

[5] Another possibility for to explain the variance between males and females to this particular element is the fact that Stans wasn't hurt. See ____ below.

[6] This variance could also possibly be attributed to a difference between the level of trust accorded by males or females to a female witness. See ____ below.

[7] As mentioned in __ above, this variance could also be attributed to a stronger male reaction to bullying by another male.

[8] Be aware of _____ (jury strikes may not be used in to discriminate against one gender; gender-neutral explanations for strikes must be provided in the event of challenge).

[9] Although the prosecution is required by _____ to make its files – including written witness statements – available to the defense before trial, we recognize that not every aspect of a witness's testimony is necessarily included in written witness statements, and that such testimony may only be discoverable in criminal cases through pretrial witness interviews.

Chapter 08
Medical Malpractice

Harvard University researchers published an extensive study of medical malpractice litigation in 2006. [FN1] The study found actual medical error in most medical malpractice claims, usually resulting in serious injury. The study found that non-meritorious claims were few, and those were almost never paid. Nevertheless, medical malpractice litigation continues to be a political topic, with calls for limiting the rights of patients to obtain recovery for medical negligence. [FN2]

Since medical malpractice tends to be a controversial area of litigation, we decided to present respondents with a variety of potential facts often found in these cases. We want to learn what we can about the predispositions of respondents and the kinds of facts most likely to trigger positive or negative reactions in various segments of respondents. RDE (rule developing experimentation) allows us to vary the 'facts' in the case, by structuring the arguments so that the variables of interest can become elements. When we want to study gender, for example, we can test similar elements, one incorporating males, the other

incorporating females. The most rigid approach is to use the exact same element, but change one part of the element. We do not use this rigid approach, but rather vary the text of the element a bit, in order to keep the study interesting to the respondent.

What Matters Most to Jurors?

Doctors often spend their careers "in the trenches," fighting with the difficult health problems of their patients, coping with patients' attitudes, and dealing with the medical reimbursement system. When an outcome is bad (and certainly not all health outcomes can be good), are jurors inclined to decide a medical malpractice on the basis of sympathy for the patient or the patient's family? That is the particular question of this chapter, and is but one of the many chapters that could be written on medical issues from the vantage point of the law.

Like our other studies, we constructed the 'facts in the case' according to experimental design, allowing us to create silos of elements (the major variables), and then elements (the specification or instantiation of the major variables). We presented respondents with these 36 elements embedded in a set of 48 vignettes, so that each respondent saw every one of the 36 elements five times, i.e., in five vignettes against different backgrounds created by the other elements. Each respondent evaluated a unique set of 48 vignettes. The same elements were present, each element appearing in the aforementioned way (5x in 48 vignettes), but the combinations varied from one respondent to another. The RDE method of testing these elements becomes a 'torture' test for ideas; any idea or element which emerges is most likely quite strong, and able to withstand the interactive, often masking effects of the other elements.

Our silos comprised these six dimensions:

1. Information about the Plaintiff (patient)
2. Information about the Defendant (doctor)
3. Evidence of guilt or liability
4. Evidence of innocence or mitigation
5. Evidence of the Defendant's motive, intent or knowledge
6. Severity of outcome (or gruesomeness of the injury)

We show the elements in Table 8.1. We will review different groups of elements in a moment, when we present the results. In that section we show which elements performed well, which performed poorly, and how different groups of respondents, our mock jurors, evaluated each element.

Table 8.1: The test stimuli

	Silo # 1_Information about the Plaintiff / Victim
A1	At the time of her death, the patient was a wife and mother; her husband has filed the lawsuit on behalf of himself and their 7 year-old daughter
A2	The patient was an immigrant from Kenya, working as a cab driver and contributing income for his parents and siblings who have also immigrated to the United States
A3	The patient was in insurance executive in his mid-40's, married with children,

	earning more than $1 million per year at the time of his death
A4	The patient was a single mother who, in the year prior to her death, had earned approximately $22,000 working as a cocktail waitress
A5	The patient, a graduate student from Nepal working on an advanced degree in chemical engineering, was already employed and earning $80,000 a year at the time of her death
A6	The patient was a widower in his 70's who had recently retired a few months prior to his death; he is survived by two adult children and five grandchildren
	Silo # 2_Information about the Defendant
B1	The Defendant is a Chinese-trained physician who has recently completed additional medical training in the United States
B2	The Defendant doctor, although currently board certified as a specialist, failed his board examinations on his first two attempts
B3	The Defendant graduated from medical school near the top of her class and was trained as a specialist in one of the nation's leading residency programs
B4	The Defendant gained admission to medical school as part of an affirmative action program which promoted the admission of minority candidates
B5	The Defendant has completed four years of medical school and two years thus far of the four year residency program required for specialization
B6	The Defendant retired from medical practice approximately three months after the death of the patient in this case, for reasons unrelated to this case
	Silo # 3_Evidence of guilt or liability
C1	While administering anesthesia during a routine procedure, the Defendant inserted the breathing tube incorrectly, starving the patient of oxygen and causing brain death
C2	The Defendant failed to diagnose cancer, relying on clinical observations of the patient without referring the patient for a biopsy
C3	The Defendant in the ER overlooked a partially dissected aorta suffered by the patient in an auto collision; the patient died when the aorta subsequently ruptured
C4	The Defendant sent the patient home without treatment despite complaints of chest pain and shortness of breath; the patient died six hours later of a pulmonary embolism
C5	The Defendant injected the wrong drug into the patient during surgery; by the time the drug was identified, it was too late to successfully reverse the effects
C6	The Defendant provided too much sedative to the patient prior to a diagnostic test, and the patient went into a fatal respiratory and cardiac arrest during the testing
	Silo # 4_Evidence of the Defendant's motive, intent or knowledge
D1	The Defendant has publicly objected to using a checklist designed to prevent this kind of problem because "checklists are for shop clerks, not doctors"
D2	The Defendant previously authored a medical paper discussing the steps to be taken to avoid the dangers of this kind of occurrence; those steps were not followed in this case
D3	The Defendant owns medical books which outline the safety steps needed to avoid

	what happened in this case, but the Defendant can't recall reading those chapters
D4	The Defendant admits neglecting safety measures in this case, but says that the failure to perform those steps was simply an inadvertent oversight which rarely happens
D5	The Defendant says the pressure to see too many patients caused the problems in this case, although the Defendant's income increases based on the number of patients seen
D6	The Defendant admits to having an addiction to narcotics, including during the time of treatment in this case, but says the narcotics did not cause the problems
	Silo # 5_Evidence of innocence or mitigation
E1	The Defendant says the problem should have been noticed and called to the Defendant's attention by a monitoring nurse, but was not
E2	At the point in time when the Defendant was making vital medical decisions in the case, the Defendant had been awake and on call for more than 24 hours
E3	The Defendant has been going through a difficult divorce and child custody battle, which the Defendant admits may have caused some loss of concentration
E4	An expert witness testifying on the Defendant's behalf says that what happened in this case is simply an accepted risk of medical treatment and does not indicate negligence
E5	The Defendant and an expert witness testifying for the Defendant point out that some patients are naturally more susceptible to adverse outcomes like this
E6	The patient's prior choices and lifestyle may have contributed to cause the underlying medical problem that led to the need for medical treatment in the first place
	Silo # 6_Severity of outcome
F1	The patient provided the primary financial support for the family, which now has been lost
F2	Family members of the patient have other sources of financial support and will not be left destitute as a result of the patient's death
F3	The patient was often described as the emotional leader of the family; the patient's death appears to be leaving family members feeling lost, alone and isolated
F4	The patient's family members have been receiving counseling as they work to cope with their loss
F5	Family members of the patient are trying to cope with feelings of rage and helplessness due to the completely needless and avoidable death
F6	The patient's family members say that it would have been easier to cope with this death if the Defendant had ever expressed any remorse or apology, but that never occurred

RDE constructs the test stimuli, the vignettes, using experimental design, an approach that we can liken to a recipe book. Figures 8.1 and 8.2 show an example of the vignette, with two rating questions. Each respondent evaluated 48 of these recipes or vignettes, with

each vignette comprising 3-4 elements, no fewer and no more, with each of the six silos contributing at most one element to the vignette. As noted in previous chapters, this stratagem of incomplete vignettes has benefits, both statistical and in terms of research practice, as well as very little downside.

The key benefits are:

1. Easy to implement: The experimental design dictates the specific combinations. Rather than having to come up with the different vignettes, the experimental design specifies the vignettes.
2. Easy to implement: Respondents find small, unconnected combinations of elements, our vignettes, easy to read and assimilate. People do not read many things in depth; it is our habit to 'graze' for information, with that habit getting stronger every year. In a sense RDE plays to that developing comfort with grazing, presenting as it does the elements in simple, easy-to-understand formats.
3. Easy to analyze (1): We often try to analyze complicated arguments, looking for threads of meaning, and hints about what might be underlying the argument. These insights are necessary, but with RDE there is no need to look 'underneath the hood.' There are no hidden paths to discover. RDE systematically varies the elements, so that across many respondents there is the likelihood that most elements appear with each other. This systematic variation means that it is the element itself, not the combination of elements, which likely drives the response.
4. Easy to analyze (2): RDE forces a relentless focus on elements. Using simple statistics, primarily OLS (ordinary least-squares regression), we identify the power of an element to drive responses, independent of the contribution of the other elements. In a sense we 'swamp' the case with 'noise,' with other arbitrary facts. In the end, it is the element itself which will draw our attention.
5. Easy to analyze (3): The experimental design ensures that the elements are statistically independent of each other, and that the elements appear 5x. The statistical independence makes the data easy to analyze and report. The repeated appearance of an element against different backgrounds ensures that we really measure the impact of each element in a rigorous way.

Figure 8.1: Example of a 4-element vignette for the medical malpractice study. The vignette provides a limited amount of information, painting a word picture about the case. The respondent reads the vignette, looks at the different verdicts and selects one verdict for this particular vignette.

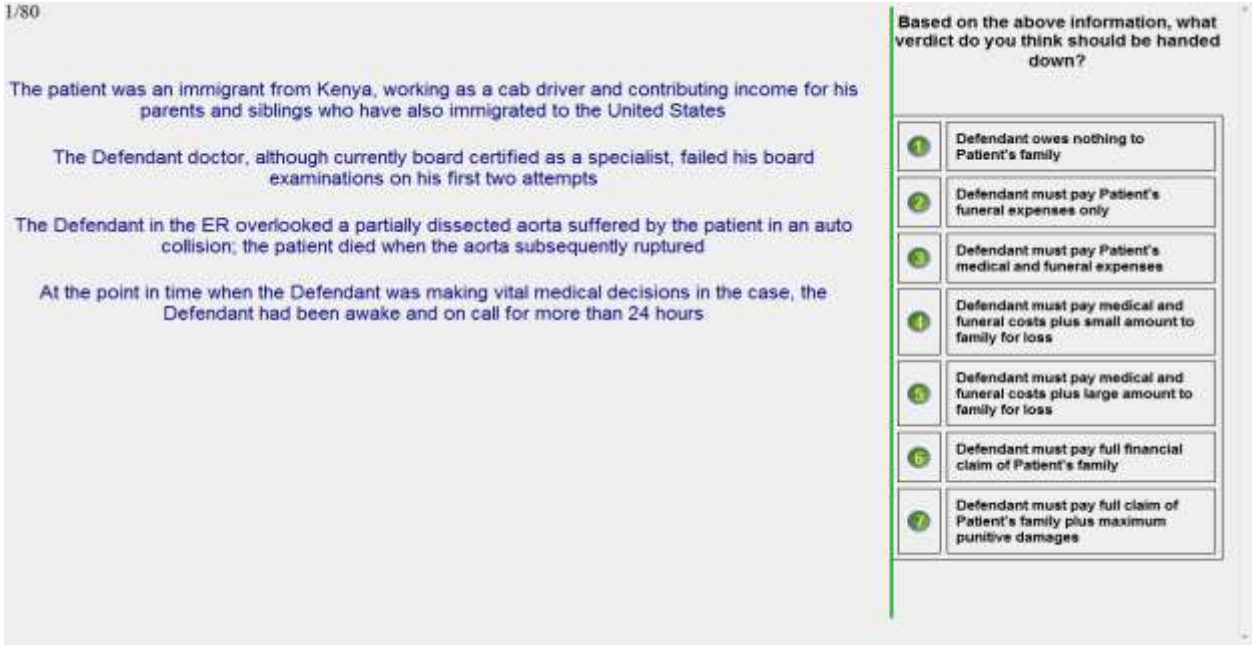
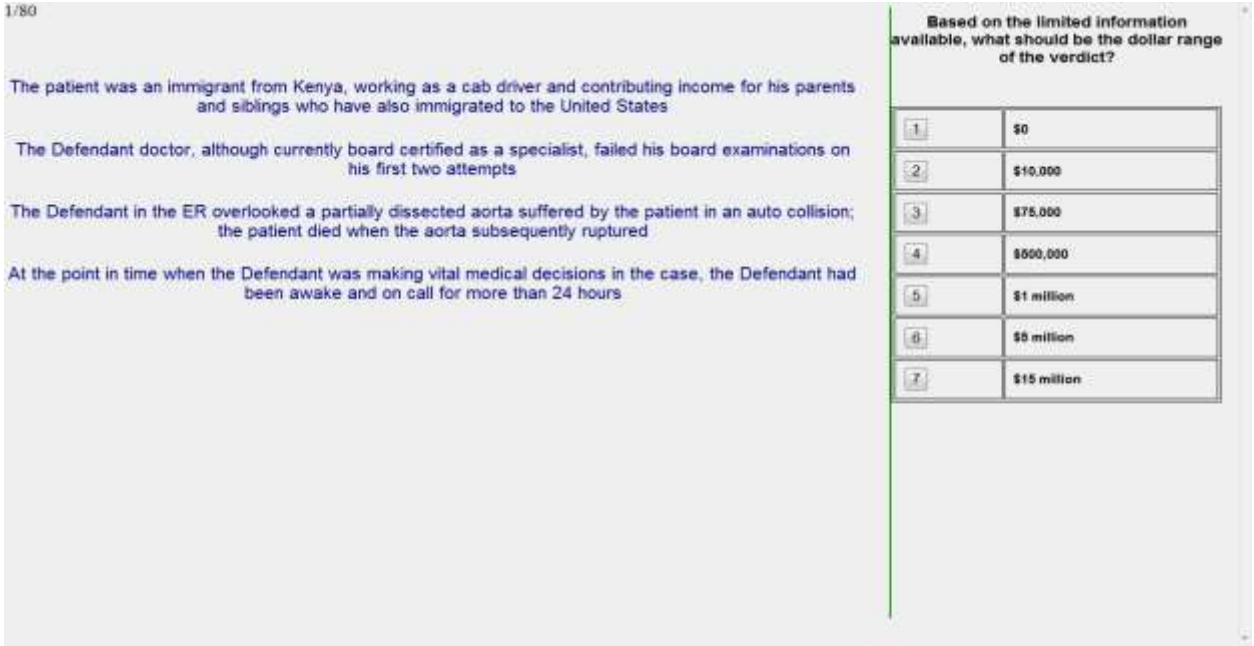


Figure 8.2: The same 4- element vignette, this time with question #2, which asks for the amount of the award



Running the study (Table 8.2, Figure 8.3)

If the elements are the heart and soul of the RDE study, then the rating scale is the mind. It is the rating scale which allows us to understand how the respondent reacts to the different messages.

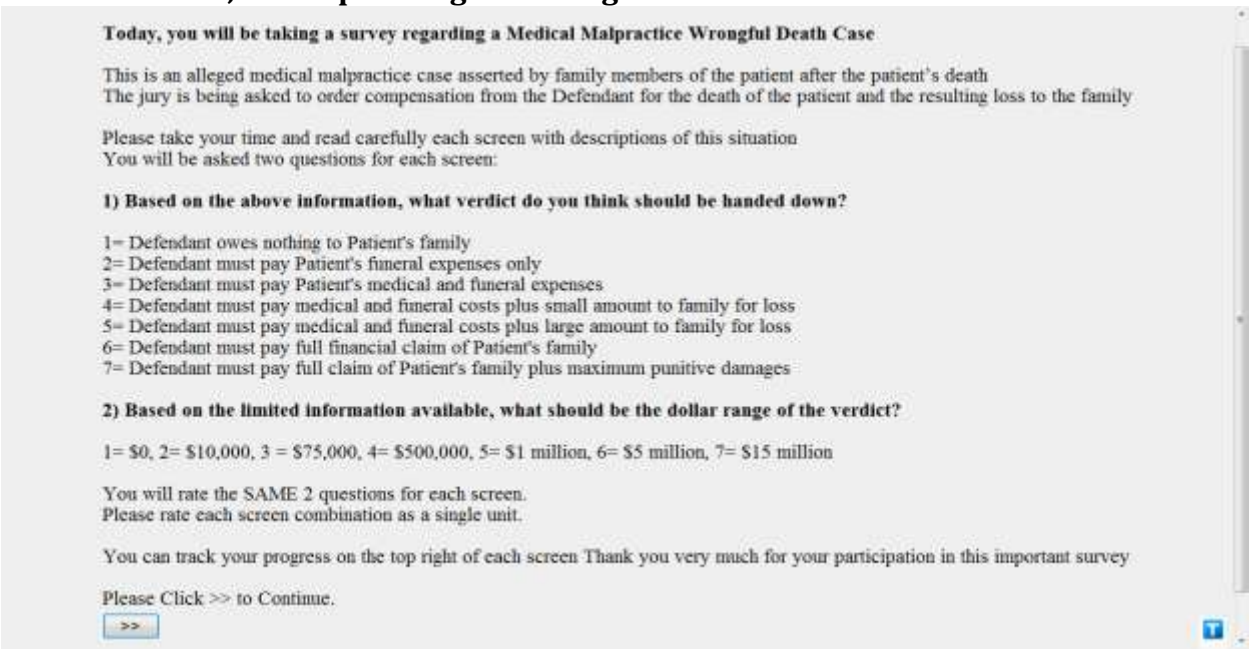
We typically treat the rating scale as an equal interval scale, so that we can apply statistics. The rating scale for our verdict is probably not an equal interval scale, since the psychological distances between adjacent scale points are unequal. Yet, this failure is minor for most of our analyses, since we will look at the proportion of respondents who selected a particular pair of scale points (6 and 7) when evaluating the verdict or when assigning a punishment. Table 8.2 shows the seven verdicts.

Table 8.2: The seven verdicts from which the respondent must select the most appropriate verdict for each vignette.

1 = Defendant owes nothing to Patient's family
2 = Defendant must pay Patient's funeral expenses only
3 = Defendant must pay Patient's medical and funeral expenses
4 = Defendant must pay medical and funeral costs plus small amount to family for loss
5 = Defendant must pay medical and funeral costs plus large amount to family for loss
6= Defendant must pay full financial claim of Patient's family
7= Defendant must pay full claim of Patient's family plus maximum punitive damages

The RDE study itself begins with an orientation page, shown in Figure 8.3. As in the previous RDE studies, the orientation page provides what is believed to be sufficient background information about the case, following which information there appears an explication of the rating scales. RDE for legal cases is a bit different in this explication than is the RDE study run for other topics, such as products commonly known, such as watches or yogurt. The legal case much begin with the bare facts, enough to frame the case, but not so many facts that the respondent is swayed to one verdict or another.

Figure 8.3: The orientation page for the medical malpractice case, introducing the facts of the case, and explicating the rating scale.

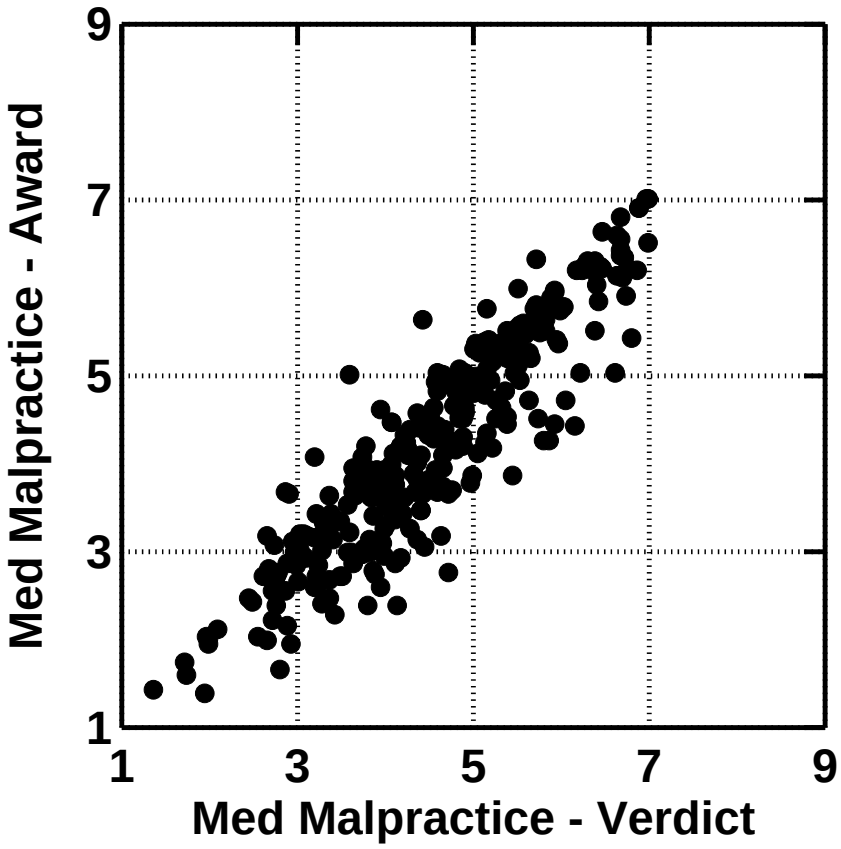


Results - What kinds of verdicts and awards do our respondents assign (Table 8.2, Figures 8.4 & 8.5)

Our first analysis looks at the distribution of verdicts and the distribution of awards. With our 313 respondents, each of whom evaluated 48 vignettes, we are working with a large sample of 15,024 pairs of ratings, the first being the verdict, the second being the award. We can learn a fair amount from looking simply at the selections, and the association of selecting the verdict versus the award.

1. It looks like respondents can't easily assign an award, and so tend to use the verdict as a guide to the award. We see this association in Figure 8.4. Each of the filled circles represents the average of 48 ratings from a respondent, first for the verdict on the 7-point scale (question #1) and second for the award on the 7-point scale (question #2). As the verdict increases, i.e., the judgment is increasingly severe, the award increases as well. We can conclude from this first analysis that most naïve, i.e., inexperienced respondents, asked to assign an award corresponding to a verdict, really don't know what to do. The punishment does fit the crime – not so much because the respondent knows the appropriate 'punishment' but rather because the respondent doesn't know, and uses the severity of the verdict as a guide. Keep in mind that the rating of the severity of the verdict is also generated by the respondent, however.

Figure 8.4: Relation between the average rating of award (ordinate) and the average rating of the verdict (abscissa). Each point is the average from ratings of the 48 vignettes, evaluated by a single respondent. The scattergram figure thus contains 313 points, one point per respondent.



2. The association between rated level of verdict on the 7-point scale and the rated award, also on the 7-point scale, emerges at the level of the individual vignettes. Our study with 313 respondents, each of whom rated 48 vignettes on the scales of verdict and award, show a strong co-variation of these two scales. Table 8.3 shows how increasing verdicts corresponding to increasing awards (top half of the table), and that increasing awards covary with increasing verdicts (bottom half of the table).
3. When we look at the distribution of verdicts, across all rewards (top half of table, right side labeled total), we see that the verdicts cluster slightly more strongly around levels 4-5. Respondents appear reluctant to select the extreme awards. Similarly, when respondents select the award, they again cluster in the middle

4. The bottom line here is that at the level of the 'raw data' the two questions, verdict and award are closely associated, suggesting perhaps that respondents new to thinking about verdicts and awards do not have a built in award scale. They use the verdict as a guide

Table 8.3: Two-way table for all vignettes for the medical malpractice case. The rows are the seven verdicts, the columns are the seen awards. The total panel data comes

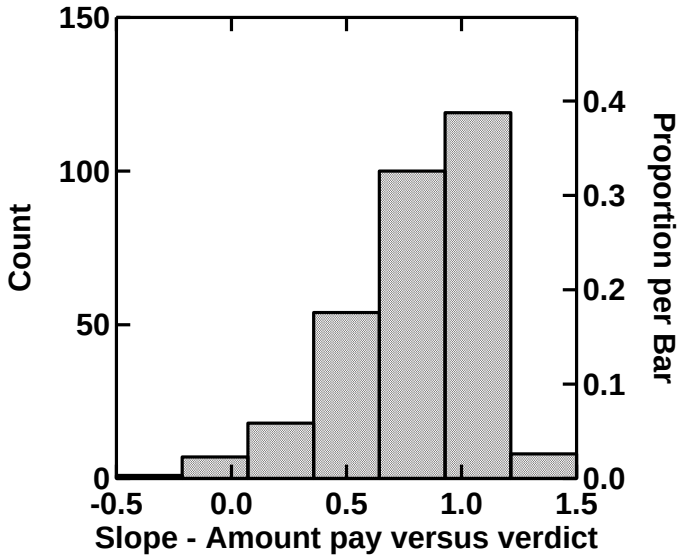
from all vignettes tested, broken out by amount of award for each verdict, and total verdict (top half o f the table) and broken out by the verdict for each award.

	Amount of award								
Column percents	**0**	**10k**	**75k**	**500k**	**1mm**	**5m**	**15mm**		
Verdict	1	2	3	4	5	6	7	Total	N
1= Defendant owes nothing to Patient's family	**90**	2	1	0	0	0	0	7	1010
2= Defendant must pay Patient's funeral expenses only	5	**44**	5	2	1	0	0	6	900
3= Defendant must pay Patient's medical and funeral expenses	4	30	**40**	6	2	1	0	12	1776
4= Defendant must pay medical and funeral costs plus small amount to family for loss	1	21	**44**	**45**	10	2	0	**21**	3133
5= Defendant must pay medical and funeral costs plus large amount to family for loss	0	3	8	**38**	**56**	17	3	**23**	3517
6= Defendant must pay full financial claim of Patient's family	0	1	2	7	20	**56**	6	15	2249
7= Defendant must pay full claim of Patient's family plus maximum punitive damages	0	0	1	1	10	24	**91**	16	2439
Total	100	100	100	100	100	100	100	100	
N	1056	1429	2593	2985	3032	2242	1687		15024
	Amount of award								
Row percents	**0**	**10k**	**75k**	**500k**	**1mm**	**5m**	**15mm**		
Verdict	1	2	3	4	5	6	7	Total	N
1= Defendant owes nothing to Patient's family	**94**	3	1	1	1	0	0	100	1010
2= Defendant must pay Patient's funeral expenses only	6	**70**	14	7	3	0	0	100	900
3= Defendant must pay Patient's medical and funeral expenses	2	24	**58**	11	4	1	0	100	1776
4= Defendant must pay medical and funeral costs plus small amount to family for loss	0	9	**36**	**43**	9	2	0	100	3133
5= Defendant must pay medical and funeral costs plus large amount to family for loss	0	1	6	32	**49**	11	2	100	3517

6= Defendant must pay full financial claim of Patient's family	0	1	3	9	27	**56**	4	100	2249
7= Defendant must pay full claim of Patient's family plus maximum punitive damages	0	0	1	2	13	22	**63**	100	2439
Total	7	10	**17**	**20**	**20**	**15**	11	100	
N	1056	1429	2593	2985	3032	2242	1687		15024

5. We see the linkage between the verdict and the award when we create a simple linear model for each respondent: Award (7 point scale) = $k_0 + k_1$(Verdict, 7 point scale). The slope tells us the number of award points corresponding to each verdict point. Figure 8.5 tells us that the plurality of slopes is around 1.0, that the proportion of repsondents assigning slopes different from 1.0 decreases quite dramatically as we lower the slope, and that there are few respondents showing slopes higher than 1.0. Again these data give us an intuitive sense that the respondent uses the verdict to assign the award, at least those respondents with slopes near 1.0.

Figure 8.5: The distribution of individual slopes relating the award and the verdict. Slopes near 1 suggest that the respondent uses the award to 'drive' the verdict, and also suggest (but not prove) that the respondent fails understand the difference, at a functional level..



Relating the presence/absence of elements to the selection of the two highest verdicts (Table 8.4)

We learn a great deal by deconstructing the response to the vignettes into the components, the separate elements, and applying OLS (ordinary least squares) regression to the data. Happily, each respondent was exposed to 36 elements appearing 5x in 48 vignettes, with the elements statistically independent of each other, and appearing against many different backgrounds. Our deconstruction analysis can be done at the level of the total panel, passing all the data through one OLS regression, or can be done at the level of the individual, passing the data through OLS regression 313 times.

As we have done in the other chapters, we recode the ratings for the verdict, to create a binary scale, with ratings of 1-5 transformed to 0, and ratings of 6-7 transformed to 100. We then add a small random number, around 10-5, to each transformed rating. The transformation is done in the way to the ratings of the award, thus transforming that rating to a binary, with the same type of random number added.

The foregoing operation allows us to relate the presence/absence of our 36 elements to the new binary scale, weak verdict versus strong verdict, low award vs high award, respectively. We move away deliberately from the magnitude of the verdict or the magnitude of the award, and towards whether or not the verdict or award is significant (i.e., operationally in this case a rating of 6 or 7, respectively). We then run the OLS regression for each respondent, as just noted above, and average the corresponding parameters.

We see the rank order of impact values for the 36 elements in Table 8.4, for the first question, dealing with the verdict. The elements are sorted by the impact of the elements. The original organizing principle, silos and elements, are not relevant to the OLS regression, which treats each of the 36 elements as a separate independent variable.

We interpret the data as follows (see Table 8.4):

1. The additive constant (16) tells us the proportion or conditional probability that a respondent will give a vignette one of the two highest verdicts, in the absence of specific facts, and thus just based upon the information in the orientation page. We would hope that this additive constant is low, suggesting that it is not the respondent's predisposition to assign verdicts 6 and 7 without compelling evidence.
2. The elements are associated with impact values. Each impact value or coefficient shows the additive conditional probability of the vignette being assigned a verdict of 6 or 7, in when the element is added to the vignette.
3. The results for the total panel reveal six elements with impacts of 10 or more, impact values which, from previous experience, have been shown to be important when correlated with other behaviors. These strong elements each describe in no uncertain terms professional errors and misjudgments.

4. There are elements which perform negatively, i.e., which move the respondent away from selecting verdicts 6 and 7. These elements are those which either talk about the patient but without mentioning the medical error, or try to excuse the error.

Table 8.4: Performance of the medical malpractice elements on question #1 (percent selecting verdicts 6 and 7 on a 7-point verdict scale)

	Binary (INT) model for question 1 – selection of verdicts 6 and 7 Numbers in body of the table are conditional probabilities, i.e., percentages	
	Additive constant – basic likelihood to select verdicts 6 and 7 in the absence of elements	16
C5	The Defendant injected the wrong drug into the patient during surgery; by the time the drug was identified, it was too late to successfully reverse the effects	**20**
D6	The Defendant admits to having an addiction to narcotics, including during the time of treatment in this case, but says the narcotics did not cause the problems	**18**
C1	While administering anesthesia during a routine procedure, the Defendant inserted the breathing tube incorrectly, starving the patient of oxygen and causing brain death	**13**
C6	The Defendant provided too much sedative to the patient prior to a diagnostic test, and the patient went into a fatal respiratory and cardiac arrest during the testing	**13**
C4	The Defendant sent the patient home without treatment despite complaints of chest pain and shortness of breath; the patient died six hours later of a pulmonary embolism	**11**
D1	The Defendant has publicly objected to using a checklist designed to prevent this kind of problem because "checklists are for shop clerks, not doctors"	**10**
C2	The Defendant failed to diagnose cancer, relying on clinical observations of the patient without referring the patient for a biopsy	7
F1	The patient provided the primary financial support for the family, which now has been lost	7
C3	The Defendant in the ER overlooked a partially dissected aorta suffered by the patient in an auto collision; the patient died when the aorta subsequently ruptured	6
A5	The patient, a graduate student from Nepal working on an advanced degree in chemical engineering, was already employed and earning $80,000 a year at the time of her death	5
D4	The Defendant admits neglecting safety measures in this case, but says that the failure to perform those steps was simply an inadvertent oversight which rarely happens	5
D5	The Defendant says the pressure to see too many patients caused the problems in this case, although the Defendant's income increases based on the number of patients seen	5
F3	The patient was often described as the emotional leader of the family; the patient's death appears to be leaving family members feeling lost, alone and isolated	5
B2	The Defendant doctor, although currently board certified as a specialist, failed	5

	his board examinations on his first two attempts	
F5	Family members of the patient are trying to cope with feelings of rage and helplessness due to the completely needless and avoidable death	5
D3	The Defendant owns medical books which outline the safety steps needed to avoid what happened in this case, but the Defendant can't recall reading those chapters	4
B6	The Defendant retired from medical practice approximately three months after the death of the patient in this case, for reasons unrelated to this case	4
A1	At the time of her death, the patient was a wife and mother; her husband has filed the lawsuit on behalf of himself and their 7 year-old daughter	3
A3	The patient was in insurance executive in his mid-40's, married with children, earning more than $1 million per year at the time of his death	3
F6	The patient's family members say that it would have been easier to cope with this death if the Defendant had ever expressed any remorse or apology, but that never occurred	3
F4	The patient's family members have been receiving counseling as they work to cope with their loss	3
B4	The Defendant gained admission to medical school as part of an affirmative action program which promoted the admission of minority candidates	2
E3	The Defendant has been going through a difficult divorce and child custody battle, which the Defendant admits may have caused some loss of concentration	2
A4	The patient was a single mother who, in the year prior to her death, had earned approximately $22,000 working as a cocktail waitress	2
D2	The Defendant previously authored a medical paper discussing the steps to be taken to avoid the dangers of this kind of occurrence; those steps were not followed in this case	2
A6	The patient was a widower in his 70's who had recently retired a few months prior to his death; he is survived by two adult children and five grandchildren	1
B5	The Defendant has completed four years of medical school and two years thus far of the four year residency program required for specialization	1
B1	The Defendant is a Chinese-trained physician who has recently completed additional medical training in the United States	1
B3	The Defendant graduated from medical school near the top of her class and was trained as a specialist in one of the nation's leading residency programs	0
E2	At the point in time when the Defendant was making vital medical decisions in the case, the Defendant had been awake and on call for more than 24 hours	0
E5	The Defendant and an expert witness testifying for the Defendant point out that some patients are naturally more susceptible to adverse outcomes like this	-1
E1	The Defendant says the problem should have been noticed and called to the Defendant's attention by a monitoring nurse, but was not	-1
A2	The patient was an immigrant from Kenya, working as a cab driver and contributing income for his parents and siblings who have also immigrated to the United States	-2
E6	The patient's prior choices and lifestyle may have contributed to cause the underlying medical problem that led to the need for medical treatment in the	-3

	first place	
E4	An expert witness testifying on the Defendant's behalf says that what happened in this case is simply an accepted risk of medical treatment and does not indicate negligence	-3
F2	Family members of the patient have other sources of financial support and will not be left destitute as a result of the patient's death	-4

Is everyone equally likely to select verdicts 6 and 7 – the additive constant (Table 8.5)

The additive constant tells us the conditional probability of a respondent selecting verdicts 6 and 7 in the absence of any elements in the vignette. The additive constant is a purely computed parameter, estimated from the pattern of responses. Nonetheless, it provides us with a sense of the likelihood of a person selecting the two highest verdicts. For the total panel, that value is 16, or 16%.

We can now look at subgroups to compare the patterns of additive constants. Keep in mind that the additive constant estimates the likelihood in the absence of elements, and is therefore a measure of ingoing likelihood of selecting verdicts 6 and 7.

1. Gender makes a big difference: Females are more likely to choose the highest two verdicts than are males, indeed far more likely.
2. Age makes a difference: The additive constant first increases, peaks at ages 45-52, and then decreases
3. Ethnicity makes a difference. Asians are exceptionally unlikely to select the highest two verdicts.
4. Where one lives makes a difference, with those living in small towns the most likely to select the two highest verdicts
5. Income makes a difference, with the lowest income showing the highest additive constant, and thus most likely to select the two highest verdicts
6. Marital status makes a difference, with separated/divorced most likely to select the two highest verdicts
7. The 'bottom line' here is that in the case of medical malpractice, we are dealing with a relatively enormous variation in proclivity to select the two highest verdicts, i.e., with the proclivity to 'sock it to the company.'

Table 8.5: Additive constant for question 1 (probability of selecting verdicts 6 and 7 in the absence of elements in a vignette)

	Base Size	Constant
Total Sample	313	16
Q1_Male	140	5
Q1_Female	173	25
Q2_18-29	138	18
Q2_30-38	72	7

Q2_39-44	34	12
Q2_45-52	31	24
Q2_53-64	31	18
Q3_Black/African American	47	21
Q3_White/Caucasian	155	20
Q3_Hispanic/Latino	53	15
Q3_Asian	49	-7
Q4_Small town or village	41	33
Q4_Small city	57	19
Q4_Urban/big city	86	16
Q4_Suburban area outside a city	107	11
Q4_Rural, open undeveloped country/remote from towns or villages	22	-5
Q5_Completed high school	43	36
Q5_Some college less than 2 years	96	16
Q5_Completed college	117	9
Q5_Completed graduate/post graduate	45	19
Q6_Under US $30,000	96	23
Q6_US $30,000-$39,999	41	13
Q6_US $40,000-$49,999	60	14
Q6_US $50,000-$74,999	55	17
Q6_US $75,000-$99,999	42	6
Q8_Separated/Divorced	25	27
Q8_Married	107	18
Q8_Single (never married)	133	15
Q8_Single/living with partner	44	10

Males and females differ, but not dramatically, in response to elements (Table 8.6)

Table 8.5 showed us that males were far less likely to select the top two verdicts than were females, at least in the absence of elements. The additive constant for males is a very low value, 5, and the additive constant for females is low, but not quite reaching 0, i.e., 25. When we look at the highest performing elements for males versus for females, we see that they are virtually overlapping with similar, albeit not identical values. We conclude, therefore, that the gender difference we see is the proclivity to select the highest verdicts, and not so much in the reaction to the elements themselves.

Table 8.6: Highest malpractice elements for males and females (binary response to question #1, selecting the two highest verdicts).

		Total	Male	Female
	Base Size	**313**	**140**	**173**
	Additive constant	16	5	25
	Males			

D6	The Defendant admits to having an addiction to narcotics, including during the time of treatment in this case, but says the narcotics did not cause the problems	**18**	**21**	**16**
C5	The Defendant injected the wrong drug into the patient during surgery; by the time the drug was identified, it was too late to successfully reverse the effects	**20**	**20**	**19**
C6	The Defendant provided too much sedative to the patient prior to a diagnostic test, and the patient went into a fatal respiratory and cardiac arrest during the testing	**13**	**15**	**11**
D1	The Defendant has publicly objected to using a checklist designed to prevent this kind of problem because "checklists are for shop clerks, not doctors"	**10**	**12**	7
C1	While administering anesthesia during a routine procedure, the Defendant inserted the breathing tube incorrectly, starving the patient of oxygen and causing brain death	**13**	**12**	**14**
C4	The Defendant sent the patient home without treatment despite complaints of chest pain and shortness of breath; the patient died six hours later of a pulmonary embolism	**11**	**12**	**11**

Ethnicity plays a big role (Table 8.7)

We saw from Table 8.5 that ethnicity plays a large role, especially when we compare the response of Asians to the three other ethnicities, Hispanic, Black and White, respectively. Asians are virtually unlikely to select the highest two verdicts (additive constant = -5), whereas Blacks and Whites are more likely than average (additive constants 20-21).

We see dramatic differences in the response to elements, however.

1. Asians are quite responsive to the different elements, including elements to which the other ethnicities are indifferent. Thus the low proclivity of the Asian respondent to select the highest verdicts is complemented by the opposite phenomenon, namely a strong responsiveness to the different elements.
2. Black respondents are similar to Hispanic and White respondents, with the exception of one element, to which the Black respondent feels merits the highest verdict, and to which the other groups are indifferent: *At the time of her death, the patient was a wife and mother; her husband has filed the lawsuit on behalf of himself and their 7 year-old daughter*
3. Hispanic respondents are similar to White and Black respondents, with the exception of this element, which talks about family*: The patient was often described as the emotional leader of the family; the patient's death appears to be leaving family members feeling lost, alone and isolated*
4. White respondents respond most strongly to clear medical errors and impropriety.
5. Summing up, we see that ethnicity also plays a major role, first in terms of the proclivity to select the highest two verdicts (clearly weakest among the Asians), second in terms of the number of elements driving the highest two verdicts (clearly greatest among the

Asians), and third in terms of the response to some of the more personal elements (effective with all ethnicities except Whites)

Table 8.7: Highest malpractice elements for the four ethnic groups (binary response to question #1, selecting the two highest verdicts).

		Total	Asian	Black	Hispanic	White
	Base Size	**313**	**49**	**47**	**53**	**155**
	Additive constant	16	-7	21	15	20
	Asian					
D6	The Defendant admits to having an addiction to narcotics, including during the time of treatment in this case, but says the narcotics did not cause the problems	**18**	**26**	**11**	**9**	**21**
C1	While administering anesthesia during a routine procedure, the Defendant inserted the breathing tube incorrectly, starving the patient of oxygen and causing brain death	**13**	**25**	**15**	**12**	**10**
C5	The Defendant injected the wrong drug into the patient during surgery; by the time the drug was identified, it was too late to successfully reverse the effects	**20**	**24**	**16**	**16**	**22**
C6	The Defendant provided too much sedative to the patient prior to a diagnostic test, and the patient went into a fatal respiratory and cardiac arrest during the testing	**13**	**18**	**10**	**18**	**12**
C2	The Defendant failed to diagnose cancer, relying on clinical observations of the patient without referring the patient for a biopsy	7	**15**	**11**	3	5
C4	The Defendant sent the patient home without treatment despite complaints of chest pain and shortness of breath; the patient died six hours later of a pulmonary embolism	**11**	**15**	**13**	**9**	**12**
C3	The Defendant in the ER overlooked a partially dissected aorta suffered by the patient in an auto collision; the patient died when the aorta subsequently ruptured	6	**13**	2	3	6
F5	Family members of the patient are trying to cope with feelings of rage and helplessness due to the completely needless and avoidable death	5	**13**	2	5	2
D5	The Defendant says the pressure to see too many patients caused the problems in this case, although the Defendant's income increases based on the number of patients seen	5	**12**	-2	3	6
B2	The Defendant doctor, although currently board certified as a specialist, failed his board examinations on his first two attempts	5	**12**	8	7	1
F1	The patient provided the primary financial support for the family, which now has been lost	7	**12**	5	4	6
F3	The patient was often described as the emotional leader of the family; the patient's death appears to be leaving family members feeling lost, alone and isolated	5	**10**	5	**10**	2

	Black					
C5	The Defendant injected the wrong drug into the patient during surgery; by the time the drug was identified, it was too late to successfully reverse the effects	**20**	**24**	**16**	**16**	**22**
C1	While administering anesthesia during a routine procedure, the Defendant inserted the breathing tube incorrectly, starving the patient of oxygen and causing brain death	**13**	**25**	**15**	**12**	**10**
C4	The Defendant sent the patient home without treatment despite complaints of chest pain and shortness of breath; the patient died six hours later of a pulmonary embolism	**11**	**15**	**13**	**9**	**12**
A1	At the time of her death, the patient was a wife and mother; her husband has filed the lawsuit on behalf of himself and their 7 year-old daughter	3	4	**12**	0	3
C2	The Defendant failed to diagnose cancer, relying on clinical observations of the patient without referring the patient for a biopsy	7	**15**	**11**	3	5
D6	The Defendant admits to having an addiction to narcotics, including during the time of treatment in this case, but says the narcotics did not cause the problems	**18**	**26**	**11**	**9**	**21**
C6	The Defendant provided too much sedative to the patient prior to a diagnostic test, and the patient went into a fatal respiratory and cardiac arrest during the testing	**13**	**18**	**10**	**18**	**12**
	Hispanic/Latino					
C6	The Defendant provided too much sedative to the patient prior to a diagnostic test, and the patient went into a fatal respiratory and cardiac arrest during the testing	**13**	**18**	**10**	**18**	**12**
C5	The Defendant injected the wrong drug into the patient during surgery; by the time the drug was identified, it was too late to successfully reverse the effects	**20**	**24**	**16**	**16**	**22**
C1	While administering anesthesia during a routine procedure, the Defendant inserted the breathing tube incorrectly, starving the patient of oxygen and causing brain death	**13**	**25**	**15**	**12**	**10**
F3	The patient was often described as the emotional leader of the family; the patient's death appears to be leaving family members feeling lost, alone and isolated	5	**10**	5	**10**	2
D4	The Defendant admits neglecting safety measures in this case, but says that the failure to perform those steps was simply an inadvertent oversight which rarely happens	5	7	-2	**10**	6
	White					
C5	The Defendant injected the wrong drug into the patient during surgery; by the time the drug was identified, it was too late to successfully reverse the effects	**20**	**24**	**16**	**16**	**22**
D6	The Defendant admits to having an addiction to narcotics, including during the time of treatment in this case, but says the narcotics did not cause the problems	**18**	**26**	**11**	**9**	**21**
C6	The Defendant provided too much sedative to the patient prior	**13**	**18**	**10**	**18**	**12**

	to a diagnostic test, and the patient went into a fatal respiratory and cardiac arrest during the testing					
C4	The Defendant sent the patient home without treatment despite complaints of chest pain and shortness of breath; the patient died six hours later of a pulmonary embolism	**11**	**15**	**13**	**9**	**12**
D1	The Defendant has publicly objected to using a checklist designed to prevent this kind of problem because "checklists are for shop clerks, not doctors"	**10**	**9**	**9**	6	**11**
C1	While administering anesthesia during a routine procedure, the Defendant inserted the breathing tube incorrectly, starving the patient of oxygen and causing brain death	**13**	**25**	**15**	**12**	**10**

Mind-set segments and the radically different viewpoints (Table 8.8)

A continuing theme in this book is the recognition that people are different from each other, and that these differences may be only partially traceable to who a person is, i.e., gender, age, ethnicity, and so forth. As compelling as those divisions are, we know that there are profound differences of opinion even among people who live in the same house, have similar ethnic backgrounds, are of similar ages, incomes, even backgrounds. These differences of opinion often may be dramatic.

By dividing people in accordance with the pattern of their impact values for the 36 elements, we can create relatively homogeneous groups of respondents. Doing the segmentation, this time for selection patterns of the verdict, generates three mind-set segments. The segmentation used Question #1, used the original 7-point rating scale for verdict as the dependent variable, and created individual level models for the 313 respondents. The coefficients of that model show how many rating points can be attributed to each element. Clustering the coefficients generates three segments, a clustering solutions at once parsimonious and interpretable.

Segmentation itself is a simple mathematical procedure which attempts to put objects into clusters or segments so that the variation or difference between the centroid (center point, average) of the clusters is large, and the variation of objects, i.e., people, within a cluster is small. Depending upon how one defines 'variation' one will get different so-called 'cluster solutions,' but in the end similar patterns will end up more or less in the same cluster.

The key to clustering lies in parsimony and interpretability, two subjective critera:

1. Interpretability – the cluster must 'tell a story,' and a simple, fairly single minded story at that. When the cluster tells too many stories, when there are too many patterns, when one feels that one is forcing too many items into the cluster, items with different messages, its likely that the interpretability is low, and one must look at more clusters, more clusters, in the solution. That's why we move beyond one cluster – so that there are simple sets of stories to tell, stories which inform us.

2. Parsimony – doing with as few clusters as one can. In our medical malpractice case we end up with three clusters. We cannot go down to two clusters. We lose interpretability. A single cluster tells too many stories.

Our medical malpractice data suggest to use three clusters of rather different sizes and mind-sets. Table 8.8 suggests that:

1. Segment 1, with a low additive constant (11) and with the fewest number of respondents (44 out of 313, about one out of seven respondents), will focus in on the family story. We saw hints of such responsiveness when we looked at the ethnic groups, but now we see that this hint fully developed in Segment 1. This segment does not really respond particularly strongly to the factual medical errors.
2. Segment 2, also with a low additive constant (10), but with the greatest number of respondents (155 out of 313), focuses on the doctor's factual errors.
3. Segment 3, with the highest additive constant (26, i.e., one out of four respondents ready to select a high verdict), and with 113 respondents, focuses on the doctor himself, specifically professional inadequacy demonstrated by actions other than the malpractice event itself.
4. The segmentation is not perfect, however. Occasionally some elements may slip in that are not the primary elements for a segment. One example is Segment 1, those who focus on the family. One the element is not family, yet drives the verdict: *The Defendant injected the wrong drug into the patient during surgery; by the time the drug was identified, it was too late to successfully reverse the effects.* There are a few of these interloping elements, but not many. Were there many, we would need to add a segment to the solution, increasing to four segments.

Table 8.8: Highest malpractice elements for the three mind-set segments (binary response to question #1, selecting the two highest verdicts).

		Tot	**S1**	**S2**	**S3**
	Base Size	**313**	**44**	**155**	**113**
	Additive constant	**16**	**11**	**10**	**26**
	Segment 1 – Focus on the family				
F1	The patient provided the primary financial support for the family, which now has been lost	7	**25**	4	4
F3	The patient was often described as the emotional leader of the family; the patient's death appears to be leaving family members feeling lost, alone and isolated	5	**25**	3	-1
A1	At the time of her death, the patient was a wife and mother; her husband has filed the lawsuit on behalf of himself and their 7 year-old daughter	3	**20**	1	0
F5	Family members of the patient are trying to cope with feelings of rage and helplessness due to the completely needless and avoidable death	5	**20**	3	1
A6	The patient was a widower in his 70's who had recently	1	**14**	2	-5

	retired a few months prior to his death; he is survived by two adult children and five grandchildren				
A5	The patient, a graduate student from Nepal working on an advanced degree in chemical engineering, was already employed and earning $80,000 a year at the time of her death	5	**13**	5	2
A3	The patient was in insurance executive in his mid-40's, married with children, earning more than $1 million per year at the time of his death	3	**12**	5	-2
B1	The Defendant is a Chinese-trained physician who has recently completed additional medical training in the United States	1	**12**	-6	5
C5	The Defendant injected the wrong drug into the patient during surgery; by the time the drug was identified, it was too late to successfully reverse the effects	**20**	**12**	**25**	**16**
B2	The Defendant doctor, although currently board certified as a specialist, failed his board examinations on his first two attempts	5	**11**	-1	**10**
F4	The patient's family members have been receiving counseling as they work to cope with their loss	3	**10**	3	-2
	Segment 2 – Focus on the doctor's factual errors				
C5	The Defendant injected the wrong drug into the patient during surgery; by the time the drug was identified, it was too late to successfully reverse the effects	**20**	**12**	**25**	**16**
C1	While administering anesthesia during a routine procedure, the Defendant inserted the breathing tube incorrectly, starving the patient of oxygen and causing brain death	**13**	-1	**23**	6
C6	The Defendant provided too much sedative to the patient prior to a diagnostic test, and the patient went into a fatal respiratory and cardiac arrest during the testing	**13**	8	**20**	4
C4	The Defendant sent the patient home without treatment despite complaints of chest pain and shortness of breath; the patient died six hours later of a pulmonary embolism	**11**	-2	**19**	6
D6	The Defendant admits to having an addiction to narcotics, including during the time of treatment in this case, but says the narcotics did not cause the problems	**18**	7	**15**	**27**
C2	The Defendant failed to diagnose cancer, relying on clinical observations of the patient without referring the patient for a biopsy	7	-2	**15**	0
C3	The Defendant in the ER overlooked a partially dissected aorta suffered by the patient in an auto collision; the patient died when the aorta subsequently ruptured	6	-3	**10**	3

	Segment 3 – Focus on the doctor's professional inadequacy (includes some malpractice)				
D6	The Defendant admits to having an addiction to narcotics, including during the time of treatment in this case, but says the narcotics did not cause the problems	**18**	7	**15**	**27**
D1	The Defendant has publicly objected to using a checklist designed to prevent this kind of problem because "checklists are for shop clerks, not doctors"	**10**	6	3	**20**
C5	The Defendant injected the wrong drug into the patient during surgery; by the time the drug was identified, it was too late to successfully reverse the effects	**20**	**12**	**25**	**16**
B6	The Defendant retired from medical practice approximately three months after the death of the patient in this case, for reasons unrelated to this case	4	2	-4	**15**
D5	The Defendant says the pressure to see too many patients caused the problems in this case, although the Defendant's income increases based on the number of patients seen	5	-3	2	**12**
B2	The Defendant doctor, although currently board certified as a specialist, failed his board examinations on his first two attempts	5	**11**	-1	**10**

Looking at the results from the legal point of view (Tables 8.9 – 8.10)

The results are reassuring. Overall, the most influential elements are *not* those relating to the Plaintiff or to the severity of the outcome, as might be feared if juries were primarily motivated by sympathy. The top six elements all relate to evidence of violations of medical standards. Four of the six elements point to direct violations of medical standards in the care of the specific patient. The other two elements point to a knowing failure of the doctor to follow good practices generally.

These results support the advice given to trial attorneys, to start a trial with the focus on the defendant and the defendant's violation of standards, rather than on the plaintiff and the extent of injury to the plaintiff. [FN3] From the very beginning, jurors recognize that a bad outcome probably exists and they are instinctively working to develop a story of what happened. The question they are naturally seeking to answer is "*Whose fault is this, why really are we here?*" It may be the defendant's fault, or the plaintiff's fault due to bad health choices or an unjustified filing of a claim. Or it may be the fault of someone else who isn't even in the case. But one thing remains true – the majority of jurors are more concerned with fault than with sympathy.

Table 8.9: The top six elements for the plaintiff

	Element	Total
C5	The Defendant injected the wrong drug into the patient during surgery; by the time the drug was identified, it was too late to successfully reverse the effects	20

D6	The Defendant admits to having an addiction to narcotics, including during the time of treatment in this case, but says the narcotics did not cause the problems	18
C1	While administering anesthesia during a routine procedure, the Defendant inserted the breathing tube incorrectly, starving the patient of oxygen and causing brain death	13
C6	The Defendant provided too much sedative to the patient prior to a diagnostic test, and the patient went into a fatal respiratory and cardiac arrest during the testing	13
C4	The Defendant sent the patient home without treatment despite complaints of chest pain and shortness of breath; the patient died six hours later of a pulmonary embolism	11
D1	The Defendant has publicly objected to using a checklist designed to prevent this kind of problem because "checklists are for shop clerks, not doctors"	10

When we consider the factual elements from the opposite end of the spectrum, looking at the six most influential elements *in favor of the defense*, do we see the same pattern? To a large extent, the answer is yes, but not completely (see Table 8.10). That is, the majority of jurors are more concerned with fault than with sympathy.

Table 8.10: The six most influential 'factual elements' in favor of the defense

Element		Total
F2	Family members of the patient have other sources of financial support and will not be left destitute as a result of the patient's death	-4
E4	An expert witness testifying on the Defendant's behalf says that what happened in this case is simply an accepted risk of medical treatment and does not indicate negligence	-3
E6	The patient's prior choices and lifestyle may have contributed to cause the underlying medical problem that led to the need for medical treatment in the first place	-3
A2	The patient was an immigrant from Kenya, working as a cab driver and contributing income for his parents and siblings who have also immigrated to the United States	-2
E1	The Defendant says the problem should have been noticed and called to the Defendant's attention by a monitoring nurse, but was not	-1
E5	The Defendant and an expert witness testifying for the Defendant point out that some patients are naturally more susceptible to adverse outcomes like this	-1

The issue of fault (Table 8.11)

Four of the six strongest elements address the issue of fault by focusing on the plaintiff or by revealing excuses for the doctor's conduct. Two of the elements, however, have nothing to do with the question of fault; instead, they focus on what may be interpreted as the plaintiff's lack of need for help or possibly a lack of desirability of helping

the plaintiff. So what does this mean? One possible interpretation is that, whereas sympathy may not be the primary motivator in favor of a verdict for the plaintiff, a *lack* of sympathy for the plaintiff's position may indeed be a primary motivator in favor of a *defense* verdict.

Let's look at this issue and the results of this study from one more perspective. The data suggest that the respondents cluster into at least three mind-sets, the response segments generated for this set of elements, and possibly the way people weight different aspects of a malpractice case. Each segment reflects distinctly different groupings of influential elements.

The identification of these three segments of respondents has the potential to be extremely important to trial attorneys. We can describe the three segments this way (with examples of specific elements below each description):

Segment 1: Sympathetic jurors, that is, jurors who appear to focus primarily on the harm to the plaintiff. (Table 8.11)

This segment appears to reflect the group that many plaintiff attorneys seek, and the group that defense attorneys fear. Yet, contrary to the thinking of many attorneys, sympathetic jurors may actually be somewhat *less* predisposed to the plaintiff side.

1. Compare the constant of 11 for this segment versus a constant of 16 for all respondents. The lower constant corresponds to a starting point that is less inclined in favor of the plaintiff generally.

2. Additionally, the numerical sum for all element shows the extent of shift beyond the constant, reveals a total shift from the constant in favor of the plaintiff for this segment of respondents that is also less than that for the other two segments of respondents.

3. In other words, this "sympathetic" segment does not start with a favorable predisposition for the plaintiff side, and then subsequently shifts less in favor of the plaintiff side. It's not a case of starting higher but moving less.

4. Furthermore, this "sympathetic" segment is the smallest of the three, accounting for only 14% of total respondents. Although these results may be surprising to many attorneys, it is actually consistent with the discussion set forth in Proving Damages to the Jury, § 1:61 "Sympathy Does Not Motivate," and § 1:62 "Anger Motivates Only If Used Correctly." [FN4]

Table 8.11: The strongest performing elements for Segment 1

		Total	**Segment 1 of 3**

	Base Size	**313**	**44**
	Constant	**16**	**11**
F1	The patient provided the primary financial support for the family, which now has been lost	7	25
F3	The patient was often described as the emotional leader of the family; the patient's death appears to be leaving family members feeling lost, alone and isolated	5	25
A1	At the time of her death, the patient was a wife and mother; her husband has filed the lawsuit on behalf of himself and their 7 year-old daughter	3	20
F5	Family members of the patient are trying to cope with feelings of rage and helplessness due to the completely needless and avoidable death	5	20
A6	The patient was a widower in his 70's who had recently retired a few months prior to his death; he is survived by two adult children and five grandchildren	1	14
A5	The patient, a graduate student from Nepal working on an advanced degree in chemical engineering, was already employed and earning $80,000 a year at the time of her death	5	13
A3	The patient was in insurance executive in his mid-40's, married with children, earning more than $1 million per year at the time of his death	3	12
B1	The Defendant is a Chinese-trained physician who has recently completed additional medical training in the United States	1	12
C5	The Defendant injected the wrong drug into the patient during surgery; by the time the drug was identified, it was too late to successfully reverse the effects	20	12
B2	The Defendant doctor, although currently board certified as a specialist, failed his board examinations on his first two attempts	5	11
F4	The patient's family members have been receiving counseling as they work to cope with their loss	3	10
F6	The patient's family members say that it would have been easier to cope with this death if the Defendant had ever expressed any remorse or apology, but that never occurred	3	10

Segment 2: Technical jurors, that is, jurors who appear to primarily focus on the existence (or non-existence) of a technical violation of standards in rendering the specific care in question. (Table 8.12)

1. This segment, which is influenced by an almost completely different set of elements from the first segment, does not appear to be as emotionally-driven as the first segment.
2. Rather than focusing primarily on the harm to the plaintiff, this group primarily looks for evidence of a medical error in the specific patient's case.

3. This "technical" segment is the largest of the three segments (comprising 50% of all respondents).
4. It starts with a constant of 10 which, like the "sympathetic" segment, is below the constant for all respondents collectively, reflecting less predisposition in favor of the plaintiff case.
5. However, as a group, this "technical" segment tends to be very responsive to new information (of the appropriate kind) in favor of the plaintiff case. It is as if these jurors are saying "show me" the proof of the medical error that caused harm. If when proof is there, they will move strongly in favor of the plaintiff. In contrast, when the technical proof is absent, the gap won't be filled by emotion.

Table 8.12: The strongest performing elements for Segment 2

		Total	**Segment 2 of 3**
	Base Size	**313**	**155**
	Constant	**16**	**10**
C5	The Defendant injected the wrong drug into the patient during surgery; by the time the drug was identified, it was too late to successfully reverse the effects	20	25
C1	While administering anesthesia during a routine procedure, the Defendant inserted the breathing tube incorrectly, starving the patient of oxygen and causing brain death	13	23
C6	The Defendant provided too much sedative to the patient prior to a diagnostic test, and the patient went into a fatal respiratory and cardiac arrest during the testing	13	20
C4	The Defendant sent the patient home without treatment despite complaints of chest pain and shortness of breath; the patient died six hours later of a pulmonary embolism	11	19
D6	The Defendant admits to having an addiction to narcotics, including during the time of treatment in this case, but says the narcotics did not cause the problems	18	15
C2	The Defendant failed to diagnose cancer, relying on clinical observations of the patient without referring the patient for a biopsy	7	15
C3	The Defendant in the ER overlooked a partially dissected aorta suffered by the patient in an auto collision; the patient died when the aorta subsequently ruptured	6	10

Segment 3: Angry jurors, that is, jurors who appear to focus primarily on evidence that the doctor is generally substandard or uncaring, going beyond a technical violation in this particular case (Table 8.13)

1. These jurors start with the highest constant by far of the three segments (constant of 26, compared with constants of 11 and 10 for the first two segments), indicating a higher starting favorability to the plaintiff's case, compared to the starting favorability exhibited by the other two segments.
2. Segment 3 comprises 36% of all respondents
3. Segment 3 jurors tend to react most to evidence of generally substandard or uncaring conduct, possibly extending beyond just a technical violation of a standard in this particular case.
4. Segment 3 jurors are most likely to respond to a perceived need to protect the community from poor doctors and hospitals.

Table 8.13: The strongest performing elements for Segment 3

		Total	Segment 3 of 3
	Base Size	**313**	**113**
	Constant	**16**	**26**
D6	The Defendant admits to having an addiction to narcotics, including during the time of treatment in this case, but says the narcotics did not cause the problems	18	27
E1	The Defendant has publicly objected to using a checklist designed to prevent this kind of problem because "checklists are for shop clerks, not doctors"	10	20
C5	The Defendant injected the wrong drug into the patient during surgery; by the time the drug was identified, it was too late to successfully reverse the effects	20	16
B6	The Defendant retired from medical practice approximately three months after the death of the patient in this case, for reasons unrelated to this case	4	15
D5	The Defendant says the pressure to see too many patients caused the problems in this case, although the Defendant's income increases based on the number of patients seen	5	12
B2	The Defendant doctor, although currently board certified as a specialist, failed his board examinations on his first two attempts	5	10

Precision afforded by mind-set segmentation

These results confirm and add precision to what we've already learned from another form of jury testing, focus groups. Our case focus group results consistently show jurors struggling to answer the ultimate question of "the right thing to do" by working through these preliminary questions [FN5], generally in this order:

What is this case about? A juror who concludes that the case is about a whining plaintiff making a play for sympathy sees the entire case through that filter. A juror who concludes the case is about a company that cut corners at every turn sees the rest of the case through

a very different filter. This current study suggests that different segments of jurors may be predisposed to look for different things.

Who has – and hasn't – acted responsibly in this case? Jurors aren't evaluating just the responsibility shown by the defendant; they're evaluating the level of personal responsibility exhibited by everyone involved, including the plaintiff. This second question may be of greatest interest to our second and third segments, but together they constitute 86% of respondents in this study.

Is this case important for people other than these parties? We know from focus groups and trials that the strongest case stories extend beyond just the personal interests of the plaintiff and defendant. The strongest stories communicate the danger to families and the community at large of permitting this kind of conduct by the defendant (and others like the defendant), or of permitting this kind of conduct by the plaintiff (suing the community's doctors and hospitals). This third question probably resonates most strongly with the third segment of respondents. A plaintiff attorney making a strong argument for the importance of the case to the community is essentially talking to this third segment.

What Is Most Predictive of Favorable or Unfavorable Jurors?

Knowing ahead of time whether a juror is likely to be favorable to one's arguments is an important advantage in the law. The question is how to obtain that information in a way consistent with the rules specifying what is allowed, versus what is not allowed.

Attorneys routinely receive limited demographic information about potential jurors, to aid in jury selection. In many jurisdictions, attorneys are not allowed to delve deeply into the facts of the case during jury selection in order to preview juror reactions to case facts. But in many of these same jurisdictions, attorneys are allowed to question jurors (either during a voir dire discussion or by written questionnaire) regarding the jurors' general beliefs and attitudes about lawsuits and potential issues in the case.

Now that we know the mind's of our 'mock jurors,' our 313 respondents, can we uncover predictive responses, not so much from the actual facts of the case as presented, but from ancillary material in the back of the RDE study, the classification questionnaire. This medical malpractice study includes a sampling of some of the demographic information and attitudinal questions which might be available to attorneys during jury selection. What, if anything, from this supplemental information might be most predictive of favorable or unfavorable jurors?

Two questions in particular suggest potential predictive power. First question #13:

13. Would you file a lawsuit if you or a family member were injured by someone else's negligence?

- *Yes, otherwise people at fault have no accountability*
- *Probably, depending on the seriousness of the injury*
- *Not likely, unless there was some intentionally bad conduct*
- *No, I don't believe in suing and there are already too many lawsuits*

1. Question 13 inquires into personal attitudes about the filing of a lawsuit. Those respondents who checked the first option ("Yes, otherwise people at fault have no accountability) generated the highest constant (22), and showed (despite such a high starting point in favor of the plaintiff) the greatest shift of coefficients beyond that constant (sum of 366) in favor of the plaintiff's position.
2. Respondents checking the third option showed a lower total shift in favor of the plaintiff (sum of 89 for the third option)
3. Respondents checking the fourth option showed a negative total shift in favor of the defendant (sum of -45 for the fourth option).

Question 15 (below) is also predictive, but somewhat surprisingly, not just on the issue of damages (the subject to which it appears to be limited).

15. Which one of the following BEST describes how you feel about someone seeking money for future pain and suffering in a lawsuit?

- *I don't believe in paying someone for pain and suffering, whether past or future*
- *Future pain and suffering is probably too speculative for a jury to determine*
- *Payment for future pain and suffering makes sense only with clear medical proof*
- *Future pain and suffering can be very real and deserves full compensation if wrongly caused*

1. Although the wording of question #15 inquires only about the topic of damages, its predictive power appears to apply to the predisposition of respondents on the liability (fault) question which, for each vignette, precedes the question regarding the amount of damages.
2. Both the constant, and the total shift of coefficients in favor of the plaintiff from the constant, correlate directly with the answer to this question.
3. As a group, those checking the first option are the most problematic for plaintiffs, with the tendency to favor the plaintiff increasing with each successive option. NOT CLEAR TO HOWARD

4. The other classification questions in the study provide less guidance, but even that recognition is beneficial, as we learn to distinguish between justified and misplaced reliance on the answers of jurors.

References

[FN1] David M. Studdert, Michelle M. Mello, Atul A. Gawande, Tejal K. Ghandi, Allen Kachalia, Catherine Yoon, Ann Louise Puopolo, Troyen A. Brennan, *Claims, Errors and Compensation Payments in Medical Malpractice Litigation*, NEW ENGLAND JOURNAL OF MEDICINE, 354:19, May 11, 2006.
[FN2] For example, by a vote of 223 to 181, the U.S. House of Representatives passed a bill (HR 5) on March 22, 2012 seeking to place limits on medical malpractice claims.
[FN3] Jim Wren, *Proving Damages to the Jury* (James Publishing 2011), §3:50 "Start With The Defendant's Bad Choices."
[FN4] Jim Wren, *Proving Damages to the Jury* (James Publishing 2011), §1:61 "Sympathy Does Not Motivate" ("Simply stated, sympathy is ***not*** an emotion that motivates most jurors to take a stand for plaintiffs"); § 1:62 "Anger Motivates Only If Used Correctly."
[FN5] Jim Wren, *Proving Damages to the Jury* (James Publishing 2011), §15:20 "Answers To Their Basic Questions."

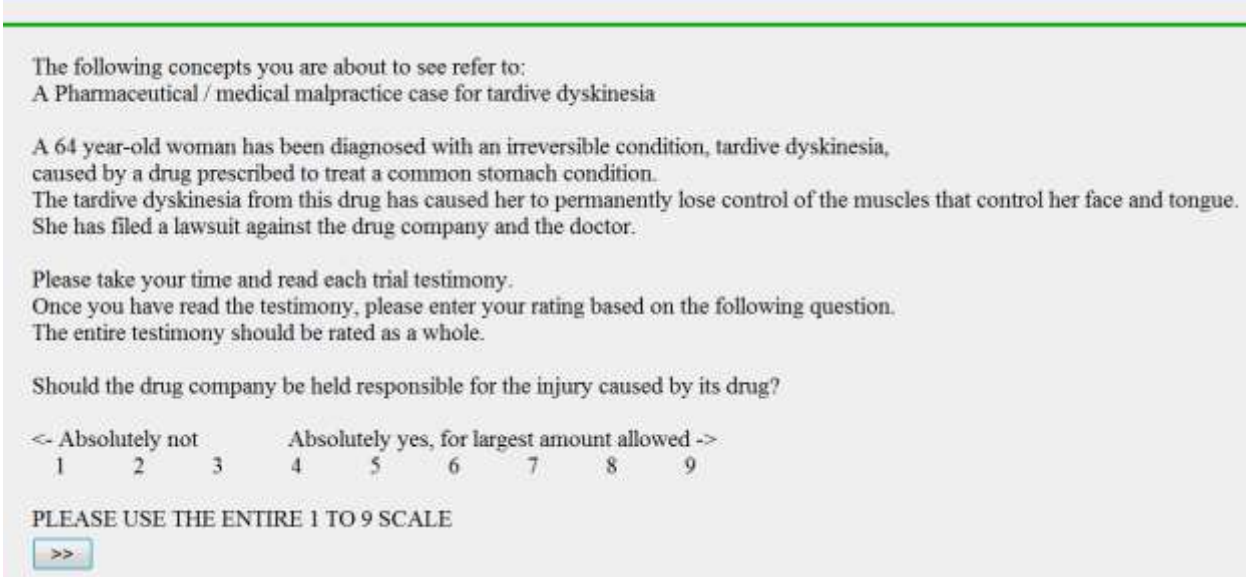
Chapter 09
The Drug Company and Tardive Dyskinesia

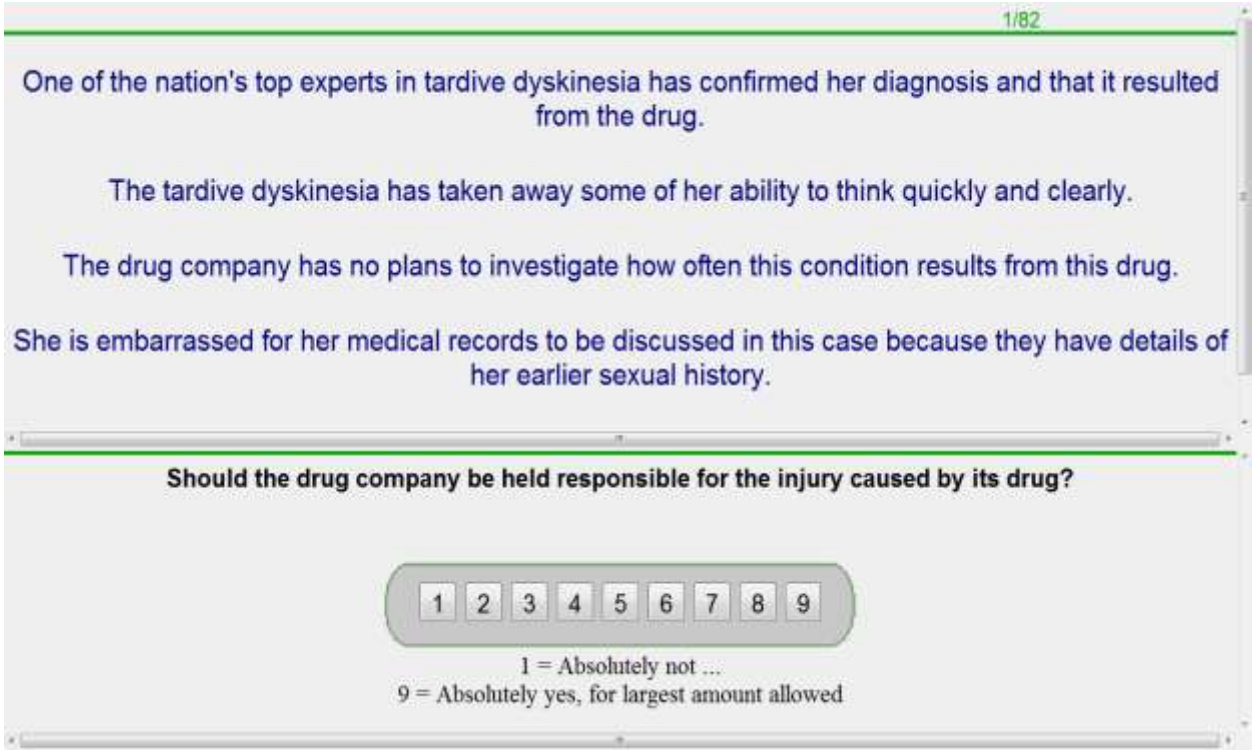
Introduction

The world of modern medicine is replete with drugs and medical devices, design to prevent and to cure. We can interfere with the process of disease, curing it often, occasionally losing the patient despite the best of efforts, and in some of the toughest situations, creating problems that weren't there to begin with. These problems are the hardest to deal with. How does a jury respond to situations where the good intentions of treatment eventuate in life threatening, disabling, disheartening complications?

The topic of our chapter is the suit against a drug company for medical malpractice due to a drug. The situation as presented to the respondents is described by the orientation page, shown in Figure 9.1. The case involves tardive dyskinesia, manifesting itself as loss of control of the muscles which control the face and the tongue.

Figure 9.1: Orientation page for the study on pharmaceutical/medical malpractice





The elements for the case (Table 9.1)

The elements in the case were constructed to constitute a 6x6 design, i.e., six silos (variables, categories), each with six alternatives. Some of the silos comprise elements which are quite similar in their nature, e.g., Silo A, the plaintiff' suffering. Other silos comprise elements which vary, and which are put into the silo for convenience.

> *Note that the division of the set of 36 elements into six silos, six elements per silo, is a bookkeeping stratagem. The silo/element system ensures that elements of a similar type, conveying different pieces of possibly contradictory information, never appear together in the same vignette. This bookkeeping prevents meaningless vignettes. However, the elements are all statistically independent of each other, so that ensuing OLS (ordinary least-squares) regression program treats the 36 elements as totally independent variables. The results emerge on an element by element basis.*

Table 9.1: The elements for the tardive dyskinesia case (medical/pharmaceutical malpractice)

	Silo A: The plaintiff's suffering
A1	She feels like she is trapped in a nightmare.
A2	She feels like people look at her like they would a snake.
A3	She never imagined her tongue would constantly shoot in and out of her mouth.
A4	Tardive dyskinesia makes people look "strange" or "bizarre" or "mentally ill."
A5	She knows she has been given a life sentence with no chance for parole.
A6	She knows all hope for a normal life is gone.

	Silo B: Counter statements by the defense
B1	Her doctor points out that all drugs have risks.
B2	The drug company points out that all drugs have risks.
B3	Doctors say lawsuits like this drive up medical costs.
B4	Drug companies say prescription drugs like this are expensive because of lawsuits like this.
B5	The drug company says it's the responsibility of doctors, not the drug company, to prescribe drugs correctly and monitor their side effects.
B6	The doctor says he wouldn't have prescribed the drug if the drug company had provided a better warning of the dangers from long-term use.
	Silo C: The medical effects
C1	The drug has permanently damaged the part of her brain that controls her mouth and tongue.
C2	The drug has destroyed her ability to keep food inside her mouth when she eats.
C3	She has unending tongue spasms caused by the drug.
C4	One of the nation's top experts in tardive dyskinesia has confirmed her diagnosis and that it resulted from the drug.
C5	All experts agree that her medical condition is now irreversible.
C6	The drug carries a higher risk for patients like this who are female, diabetic, and over the age of 50.
	Silo D: What the plaintiff is experiencing
D1	She can no longer teach or sell real estate because she is unable to talk clearly.
D2	She can't eat in a restaurant because food constantly comes out of her mouth.
D3	The inside of her mouth is full of ulcers because she can't stop her tongue from rubbing against her teeth, lips, and cheeks.
D4	The uncontrolled movement of her tongue chokes her and makes her afraid of suffocating.
D5	She is embarrassed to be seen in public, even in church, because she looks so unnatural.
D6	The tardive dyskinesia has taken away some of her ability to think quickly and clearly.
	Silo E: Drug company behavior with respect to this drug
E1	After 20 years, the drug company still has not checked to see how many people get tardive dyskinesia from this drug.
E2	The drug company has no plans to investigate how often this condition results from this drug.
E3	The doctor kept prescribing the drug for several months even after symptoms of this condition started showing up and getting worse.
E4	The warning that comes with the drug hasn't changed in 20 years even though the risk of this condition is now known to be much higher than stated in the warning.
E5	The drug was approved by the FDA to be used for 4 to 12 weeks, but was instead prescribed in this case for more than three years.
E6	The drug company's salesmen encourage doctors to prescribe the drug for long-term use even though the FDA has only approved it for short-term use.

	Silo F: Additional fact in the case
F1	The drug company makes more than $3 billion in total profits each year.
F2	The drug was just used to treat a stomach disorder but caused brain damage.
F3	Her husband loves her, but she wonders if he's really embarrassed by her now.
F4	She already had a history of seeking mental health treatment for depression before all of this.
F5	She is embarrassed for her medical records to be discussed in this case because they have details of her earlier sexual history.
F6	The drug company is not a U.S. company.

What elements perform well (Table 9.2)

We analyze the data from the respondents using the same workhorse approach that we have done in the previous chapters. Each respondent evaluated 48 vignettes, every element of our set of 36 appearing 5x in the 48 test vignettes, and in turn absent from 43 vignettes. The 36 elements appeared as 'free agents,' statistically independent of each other. Every respondent tested a different set of 48 vignettes, so that across all the respondents there many more than 48 unique vignettes tested. With our 101 respondents, we have 4848 vignettes, most of which differed from each other by design.

Our analysis looks at the proportion of respondents who chose ratings 7-9, those three ratings corresponding to the 'most guilty' verdict. The language for rating 9 was 'absolutely, for the largest amount allowed.' When a respondent rated the vignette 7-9, we transformed the rating to 100 (plus a small random number, which number does not affect the OLS, ordinary least squares regression, but does allow the regression to run without 'crashing' when the respondent assigns all vignettes ratings 1-6, or in contrast when the respondent assigns all vignettes ratings 7-9, respectively).e

We run the OLS regression on a respondent by respondent basis, with the independent variables being the 36 elements, each element treated as a separate predictor variable. The response variable is the 0/100 transformation, i.e. the binary transformation of the original 9-point rating variable, along with the additive constant.

These steps being taken, we see the average impact values across all 101 respondents in Table 9.2.

1. The additive constant is very high 65. This means that in the absence of elements, i.e., with only the orientation page shown to the respondent (Figure 9.1), 65% of the respondents would select ratings 7-9, the most severe. The additive constant is an estimated value, one which comes from the pattern of all the ratings. The very high additive constant is unusual, meaning that the ingoing case is quite strong.
2. The strongest elements present to the respondent different aspects, ranging from how the damage occurs *(damaged the parts of her brain that control her mouth and tongue*), to the negligence of the drug company (*this warning..hasn't changed in 20 years*).

The drug has permanently damaged the part of her brain that controls her mouth and tongue.

The warning that comes with the drug hasn't changed in 20 years even though the risk of this condition is now known to be much higher than stated in the warning.

After 20 years, the drug company still has not checked to see how many people get tardive dyskinesia from this drug.

Table 9.2: Performance of the elements from the total panel for the pharmaceutical/medical malpractice case

		Total
	Base Size	101
	Additive constant	65
C1	The drug has permanently damaged the part of her brain that controls her mouth and tongue.	8
E4	The warning that comes with the drug hasn't changed in 20 years even though the risk of this condition is now known to be much higher than stated in the warning.	8
E1	After 20 years, the drug company still has not checked to see how many people get tardive dyskinesia from this drug.	8
C3	She has unending tongue spasms caused by the drug.	7
C5	All experts agree that her medical condition is now irreversible.	6
E2	The drug company has no plans to investigate how often this condition results from this drug.	5
E6	The drug company's salesmen encourage doctors to prescribe the drug for long-term use even though the FDA has only approved it for short-term use.	5
D3	The inside of her mouth is full of ulcers because she can't stop her tongue from rubbing against her teeth, lips, and cheeks.	4
D6	The tardive dyskinesia has taken away some of her ability to think quickly and clearly.	4
F6	The drug company is not a U.S. company.	3
C2	The drug has destroyed her ability to keep food inside her mouth when she eats.	3
B1	Her doctor points out that all drugs have risks.	2
D2	She can't eat in a restaurant because food constantly comes out of her mouth.	2
D1	She can no longer teach or sell real estate because she is unable to talk clearly.	2
A3	She never imagined her tongue would constantly shoot in and out of her mouth.	2
C4	One of the nation's top experts in tardive dyskinesia has confirmed her diagnosis and that it resulted from the drug.	2

B6	The doctor says he wouldn't have prescribed the drug if the drug company had provided a better warning of the dangers from long-term use.	2
F2	The drug was just used to treat a stomach disorder but caused brain damage.	1
D4	The uncontrolled movement of her tongue chokes her and makes her afraid of suffocating.	0
A2	She feels like people look at her like they would a snake.	-1
B3	Doctors say lawsuits like this drive up medical costs.	-1
C6	The drug carries a higher risk for patients like this who are female, diabetic, and over the age of 50.	-1
A5	She knows she has been given a life sentence with no chance for parole.	-1
B5	The drug company says it's the responsibility of doctors, not the drug company, to prescribe drugs correctly and monitor their side effects.	-1
A1	She feels like she is trapped in a nightmare.	-1
F4	She already had a history of seeking mental health treatment for depression before all of this.	-2
B4	Drug companies say prescription drugs like this are expensive because of lawsuits like this.	-2
A6	She knows all hope for a normal life is gone.	-2
F1	The drug company makes more than $3 billion in total profits each year.	-2
D5	She is embarrassed to be seen in public, even in church, because she looks so unnatural.	-3
A4	Tardive dyskinesia makes people look "strange" or "bizarre" or "mentally ill."	-3
F3	Her husband loves her, but she wonders if he's really embarrassed by her now.	-3
F5	She is embarrassed for her medical records to be discussed in this case because they have details of her earlier sexual history.	-4
B2	The drug company points out that all drugs have risks.	-5
E3	The doctor kept prescribing the drug for several months even after symptoms of this condition started showing up and getting worse.	-9
	The drug was approved by the FDA to be used for 4 to 12 weeks, but was instead prescribed in this case for more than three years.	-9

Males versus females (Table 9.3)

The case involves a female plaintiff. Do male respondents react different from female respondents? Table 9.3 suggests yes:

1. The additive constant tells us that males are likely to rate the base idea 7-9 than are females (additive constant = 73 for males, 58 for females)
2. We see dramatic differences between males and females
3. For males, one key element drives the very strong reaction (rating the vignette 7-9). This is a statement about the fact that: *The warning that comes with the drug hasn't changed in 20 years even though the risk of this condition is now known to be much higher than stated in the warning.*
4. For males, elements about love and about the profits made by the drug company move the respondent away from the most severe verdict.

5. Females differ radically from males in what arguments they find compelling. There is no clear underlying pattern of elements, but these strong performing elements are virtually irrelevant to males.

Table 9.3: Difference between males and females regarding performance of the elements for the pharmaceutical/medical malpractice case

		Tot	M	F
	Base Size	101	48	53
	Additive constant	65	73	58
	Males			
E4	The warning that comes with the drug hasn't changed in 20 years even though the risk of this condition is now known to be much higher than stated in the warning.	8	**12**	6
F3	*Her husband loves her, but she wonders if he's really embarrassed by her now.*	*-3*	*-13*	*6*
F1	*The drug company makes more than $3 billion in total profits each year.*	*-2*	*-10*	*5*
E3	*The doctor kept prescribing the drug for several months even after symptoms of this condition started showing up and getting worse.*	*-9*	*-15*	*-3*
	Females			
C1	The drug has permanently damaged the part of her brain that controls her mouth and tongue.	8	1	**16**
C5	All experts agree that her medical condition is now irreversible.	6	-1	**12**
E2	The drug company has no plans to investigate how often this condition results from this drug.	5	-3	**12**
D6	The tardive dyskinesia has taken away some of her ability to think quickly and clearly.	4	-2	**10**

Mind set segments (Table 9.4)

One key benefit emerging from studies using RDE (rule developing experimentation) is the discovery of new-to-the-world groups of people who think alike, the mind-set segments. We are accustomed to looking at respondents using categories that are familiar, such as gender, age, self-declared patterns of product usage, and so forth. Subgroups developed in this way may differ from each other , e.g., gender differences, as we see in Table 9.3.

By dividing respondents according to the pattern of responses to a specific, limited set of elements, we may be getting at something deeper, more profound. People do not differ just because they are of different genders, ethnicities, and so forth. At least they may not differ in their reactions to a specific set of elements, such as our elements dealing with the woman suffering tardive dyskinesia. To find differences among people in such a micro-topic, and to find these differences in a systematic way without needing luck, one has to

confine the focus to the facts of the case, as we do here, dividing the respondents by the patterns of responses to these facts. This approach, focusing on the specifics of one situation, will more readily reveal the differences of people.

We cluster our respondents based upon the pattern of reactions to the different elements, as we have done previously, in other chapters. Rather than transforming the response to a binary scale (0/100) which transformation makes it easy to understand the data (will not vote for the severe penalty versus will vote for the severe penalty), we remain with the original 9-point scale of guilt (see Figure 9.1).

1. *We create a simple linear equation for each respondent, relating the presence/absence of the elements to the 9-point rating. This is called the Persuasion Model. The term Persuasion is used simply for convenience, to differentiate the equation from our model based on the binary 0/100 value, which second equation we call the Interest Model.*

2. *We estimate the coefficient or impact value for each element for each respondent, these elements coming from the Persuasion Model*

3. *We cluster the respondents based upon the 36 coefficients. We do not use the additive constant.*

4. *We extract as few clusters as we can, always making sure that we can interpret the clusters. By interpretation we mean that the clusters tell us a more-or-less coherent story, and the clusters tell us different stories. We call these two criteria 'parsimony' (as few clusters as possible), and 'interpretability' (we understand the different mind-sets).*

Table 9.4 shows us two segments which fulfill our criteria of parsimony (only two of many possible segments) and interpretability. The latter, the ability to tell a 'story' comes from the elements which perform well for each segment.

1. Segment 1, with 61 respondents, and a slightly lower additive constant of 60, reflects that mind-set which looks at the actions of the company as representing negligence. When argument is made that the company actually points out the risks, this information suffices to reduce Segment 1's verdict of 'guilty.'
2. Segment 2, with fewer respondents (40 rather than 61), and with a higher additive constant (72, more likely to select the guilty verdict in the absence of elements), is likely not to select the guilty verdict if it can be shown that others mis-use the drug, not the drug company itself.

Table 9.4: Difference between two mind-set segments regarding performance of the elements for the pharmaceutical/medical malpractice case

		Tot	**Seg1**	**Seg2**
	Base Size	101	61	40

	Additive constant	65	60	72
	Segment 1 - Drug company at fault for negligence, not for standard problems			
E2	The drug company has no plans to investigate how often this condition results from this drug.	5	**16**	-12
E4	The warning that comes with the drug hasn't changed in 20 years even though the risk of this condition is now known to be much higher than stated in the warning.	8	**15**	-1
E1	After 20 years, the drug company still has not checked to see how many people get tardive dyskinesia from this drug.	8	**14**	-3
E6	The drug company's salesmen encourage doctors to prescribe the drug for long-term use even though the FDA has only approved it for short-term use.	5	**13**	-9
C3	She has unending tongue spasms caused by the drug.	7	**10**	3
B2	*The drug company points out that all drugs have risks.*	*-5*	***-10***	*4*
	Segment 2 -Drug company responsible for problems, but not responsible if others mis-use it (like doctors who prescribe)			
C1	The drug has permanently damaged the part of her brain that controls her mouth and tongue.	8	7	**11**
E2	*The drug company has no plans to investigate how often this condition results from this drug.*	*5*	***16***	***-12***
E3	*The doctor kept prescribing the drug for several months even after symptoms of this condition started showing up and getting worse.*	*-9*	*2*	***-24***
E5	*The drug was approved by the FDA to be used for 4 to 12 weeks, but was instead prescribed in this case for more than three years.*	*-9*	*3*	***-28***

Summing up

Chapter 10
Insurance - Lack of Good Faith

Introduction

When problems strike and one has purchased insurance, it is exasperating to be told that one's paid-for-insurance simply doesn't cover the loss. The feeling is even stronger when one has paid for years, only to be told that the payments of yesterday never really covered the problem of today. There is a sense of betrayal, that somehow one has been defrauded.

Insurance companies are businesses. Whereas it is not in the best interest of a business to avoid paying what it owes, whenever the business can 'legitimately' avoid a payment, it makes sense from a strictly business viewpoint not to pay that which one does not owe.

What predispositions do jurors exhibit in insurance "bad faith" litigation? Two conflicting tendencies often come into play. We know from discussing these cases with prospective jurors during jury selection and after trials, as well as observing mock jurors during focus groups and mock trials. On one hand, a significant number of jurors distrust insurance companies, believing that at least some insurance companies often seek to take advantage of claimants. However, numerous jurors also believe that many insurance claimants file exaggerated or fraudulent claims, driving up insurance rates.

How do attorneys identify which jurors are which? Maybe even more importantly, since individual jurors may hold both views, how may attorneys trigger and encourage the view that is supportive of their side of the case?

Assessing "Bad Faith"

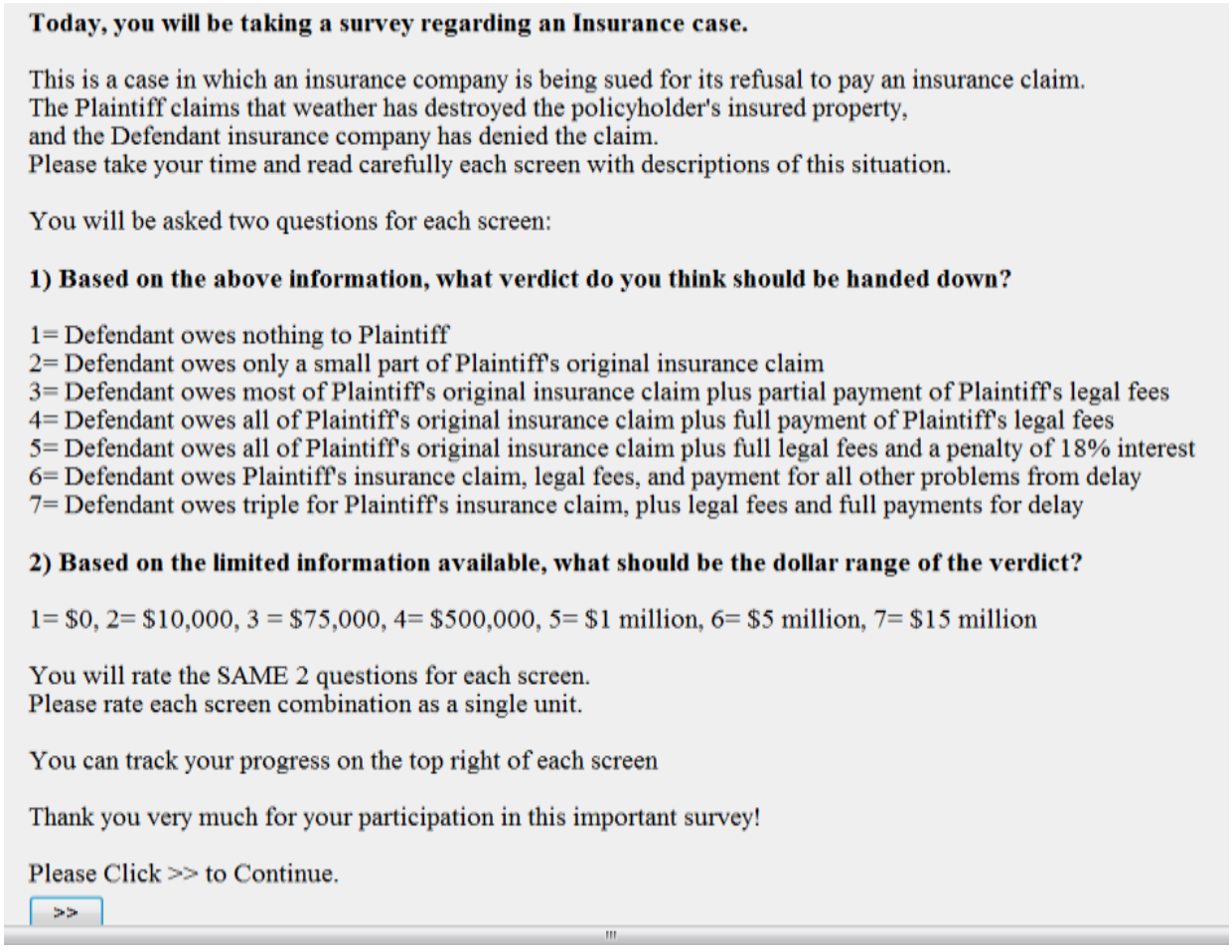
When an insurance claim is made, typically the policyholder has already paid the premiums and received only a promise of future financial protection. Thus the policyholder depends on the good faith performance of the promise by the insurance company at a time of financial vulnerability, that vulnerability emerging due to some type of occurrence or loss.

Many states require the insurance company to act with "good faith and fair dealing." These states also promote a threat of enhanced damages against an insurance company that engages in a "bad faith" denial, delay or underpayment of the insurance claim. [FN1]
Although state laws vary, often the policyholder is allowed to recover for all harm or damages resulting from the way in which the insurance company has handled the claim (including prejudgment interest, legal expenses, and damages for other economic loss or mental distress resulting from the denial), without necessarily being forced to prove fraud or intentional infliction of emotional distress by the insurance company. Punitive damages may also be recoverable with proof of fraud or intentional infliction of emotional distress. Some states have replaced traditional tort and contract actions with statutory remedies, such as enhanced amounts of interest and, in some cases, the trebling of consequential damages.
Regardless of which legal framework and remedies are provided by a particular state, the core inquiry is essentially the same: Has the insurance company acted unfairly in some way in the process of responding to the insurance claim?

The insurance case

The aforementioned situations and feelings take us to this chapter, dealing with 'lack of good faith,' specifically the refusal of an insurance company to pay an insurance claim. As we see in the orientation page (Figure 10.1) the topic concerns loss due to bad weather. The company has denied the claim, based upon facts to be shown in the test concept. The plaintiff is suing the insurance company to obtain the money for the property damage it claims was covered by the insurance policy.

Figure 10.1: The orientation page for the insurance claim case



The elements and the RDE study (Tables 10.1 & 10.2)

We begin the insurance study with the elements, the raw material from which we construct the vignettes, and the material that provides us knowledge of the respondent's mind. Table 10.1 presents these elements, in structured form, with the six silos, each comprising six elements. There are many more 'facts' and 'arguments' to made for this case, statements differing both in specifics and in different ways that the same information is

presented. For the sake of simplicity, we try to cover as much ground as possible, looking at the plaintiff, the defendant, the actions taken, and then the impact on the defendant.

As noted previously, our division of the 36 elements into silos and elements is really more of a bookkeeping device than an actual analytic tool. In our cases we have many different facts and opinions; the silo and element stratagem helps us keep our information in simple, easy to understand, easy to retrieve forms.

Table 10.1: Silos and elements for the insurance fraud case

	Silo A – The plaintiff
A1	The Plaintiff is Asian, a woman, age 74, who lives alone and operates a small grocery, and for whom English is a second language
A2	The Plaintiff, age 53, has a family, and is a former corporate executive who is now a business owner
A3	The Plaintiff graduated from college four years ago, and has recently purchased her first home after earning enough from her new business to provide the down payment
A4	The Plaintiff is a large corporation with regional office complexes in nine states
A5	The Plaintiff is a local real estate company with two offices in the same city
A6	The Plaintiff is a charitable organization operating homeless shelters and secondhand resale shops in four cities
	Silo B – The defendant
B1	The Defendant insurance company is a U.S. subsidiary of a large Swiss financial services holding company
B2	The Defendant insurance company is one of the oldest of U.S. insurers
B3	The Defendant insurance company is a wholly owned subsidiary of a major U.S. retail store chain
B4	The Defendant insurance company advertises heavily as being the best value for customers
B5	The Defendant insurance company is not a major advertiser; its business model is based upon being the low-cost alternative offered by independent insurance agents
B6	The Defendant insurance company markets itself as the superior choice for the full protection of its insured customers
	Silo C – Actions of the defendant
C1	When the Defendant's first adjustor recommended payment of the claim, the Defendant instead sent a second adjustor with less experience who recommended denial of the claim
C2	An internal memo reveals that the Defendant has made a routine of first denying claims like that filed by the Plaintiff because statistics show that to be the most profitable practice for the insurance company
C3	Evidence shows that the Defendant has intentionally slowed down payment of claims because of losses it has incurred with its investment of premiums in the stock market
C4	Internal emails of the Defendant reveal that claims personnel have been instructed to slow down the payment of claims, apparently in order to allow for longer investment of premiums
C5	Evidence shows that, for certain types of claims such as the one in this case, the

	Defendant utilizes employee adjusters who deny claims far more often than independent adjusters
C6	The report from the Defendant's claim adjuster recommended full payment of the claim, but the office supervisor reversed the recommendation and denied the claim without explanation
	Silo D – Discoveries about, and statements by the defendant
D1	Investigation has revealed that the Defendant has substantially increased its net profits over the last three years by reducing the amounts it pays on claims compared to premiums
D2	The Defendant rewards its claims personnel with bonuses based in large part on profitability from the percentage of claims successfully denied
D3	The Defendant's representative responsible for this claim emailed a supervisor acknowledging the claim might have merit but noting the large size of the claim made it "a problem"
D4	Statistical sampling reveals that the Defendant denies a higher percentage of claims when they come from customers – like the Plaintiff – who are less likely to challenge the denial
D5	The Defendant has substantially reduced training and communication to its claims personnel on the legal duty to treat the claims of insured customers with "good faith"
D6	Evidence shows that the Defendant had already recorded the claim internally as "denied" before even receiving the written recommendation of its adjuster
	Silo E – Defendant actions and statements pertaining to the claim denial
E1	After the Plaintiff filed suit, the Defendant obtained the report of a new independent adjuster with more than thirty years of experience; the report supports denial of the claim
E2	The Defendant says that it is denying the claim based on evidence of insurance fraud by the Plaintiff
E3	The Defendant says that the Plaintiff's delay in filing the insurance claim made the claim difficult to investigate and verify
E4	The Defendant says that the Plaintiff has failed and refused to fully cooperate in the investigation of the claim, by failing to provide the full documentation requested
E5	The Defendant says that the filing of a claim only three months after acquiring the policy is suspicious, in light of some evidence that the claimed damage may have previously existed
E6	The Defendant says that the Plaintiff made misrepresentations on its insurance application as part of obtaining insurance coverage from the Defendant
	Silo F – Impact of defendant's action on the plaintiff
F1	The Defendant's denial of the Plaintiff's insurance claim has forced the Plaintiff into a difficult cash shortage, leading to an increasing series of other problems
F2	In addition to other problems, the Plaintiff's dispute with the Defendant insurance company has interfered with the Plaintiff's ability to get replacement insurance coverage
F3	The Plaintiff is being impacted financially not only by the Defendant insurance company's refusal to pay the claim; the cost of the litigation is also draining the Plaintiff

F4	The Defendant's refusal to pay the insurance claim has interfered with the Plaintiff's ability to stay in business and continue operations
F5	The Defendant's denial of the insurance claim has forced the Plaintiff to incur numerous additional expenses, resulting in a financial loss for the year
F6	The Plaintiff's lawyer points out that the Defendant's refusal to honor the insurance policy is calculated to force the Plaintiff into a minimal settlement when the Plaintiff is most vulnerable

We construct the test vignettes using experimental design, with each vignette or combination comprising at most one element from each of three or four silos. The vignettes are incomplete, allowing us to apply OLS (ordinary least-squares) regression to the individual-level data. In turn, OLS regression emerges with an equation or model for each person showing how the individual elements 'drive' the response.

If the silos and the elements, when combined into vignettes, represent the 'heart' of RDE, the actual rating scales represent the 'mind.' A vignette is simply a combination of elements. Only when the vignette is rated on a scale do we begin to understand how the elements perform within that vignette. The rating scale, i.e., the question asked, focuses the respondent's mind on the specific topic of interest. For this RDE study on insurance fraud we focus on two particular issues, as shown to us by Table 10.2:

1. What is the proper verdict? This is question #1
2. If the verdict is in favor of the plaintiff, approximately how much should we awarded to the plaintiff? This is question #2.

Table 10.2: The two rating questions

1) Based on the above information, what verdict do you think should be handed down?
1 = Defendant owes nothing to Plaintiff
2 = Defendant owes only a small part of Plaintiff's original insurance claim
3 = Defendant owes most of Plaintiff's original insurance claim plus partial payment of Plaintiff's legal fees
4 = Defendant owes all of Plaintiff's original insurance claim plus full payment of Plaintiff's legal fees
5 = Defendant owes all of Plaintiff's original insurance claim plus full legal fees and a penalty of 18% interest
6 = Defendant owes Plaintiff's insurance claim, legal fees, and payment for all other problems from delay
7 = Defendant owes triple for Plaintiff's insurance claim, plus legal fees and full payments for delay
2) Based on the limited information available, what should be the dollar range of the verdict?

1= $0, 2= $10,000, 3 = $75,000, 4= $500,000, 5= $1 million, 6= $5 million, 7= $15 million

Running the RDE test (Figures 10.2 & 10.3)

After the respondent has been introduced to the topic by the orientation page, the respondent evaluates test vignettes, comprising 3-4 elements, stacked one atop the other, as we see in Figure 10.2 showing a vignette with question #1 to the right, and in Figure 10.3 showing the same vignette with question on the right. No effort is made to connect the elements. They simply appeared as centered statements, approximately 1-2 lines apiece. The format of the vignette, although appearing initially to be stark, ends up being for the respondent to navigate. The information is presented without any attempt to embed the elements in a paragraph. In fact, over time, this format surprised the investigators, with its simplicity. Respondents find this format easy to use, perhaps because the respondents 'graze' for information anyway, rather than reading a paragraph, word for word.

Figure 10.2: Example of a vignette for the insurance case, showing the elements on the left and the first question on the right. This format is easy for the respondent.

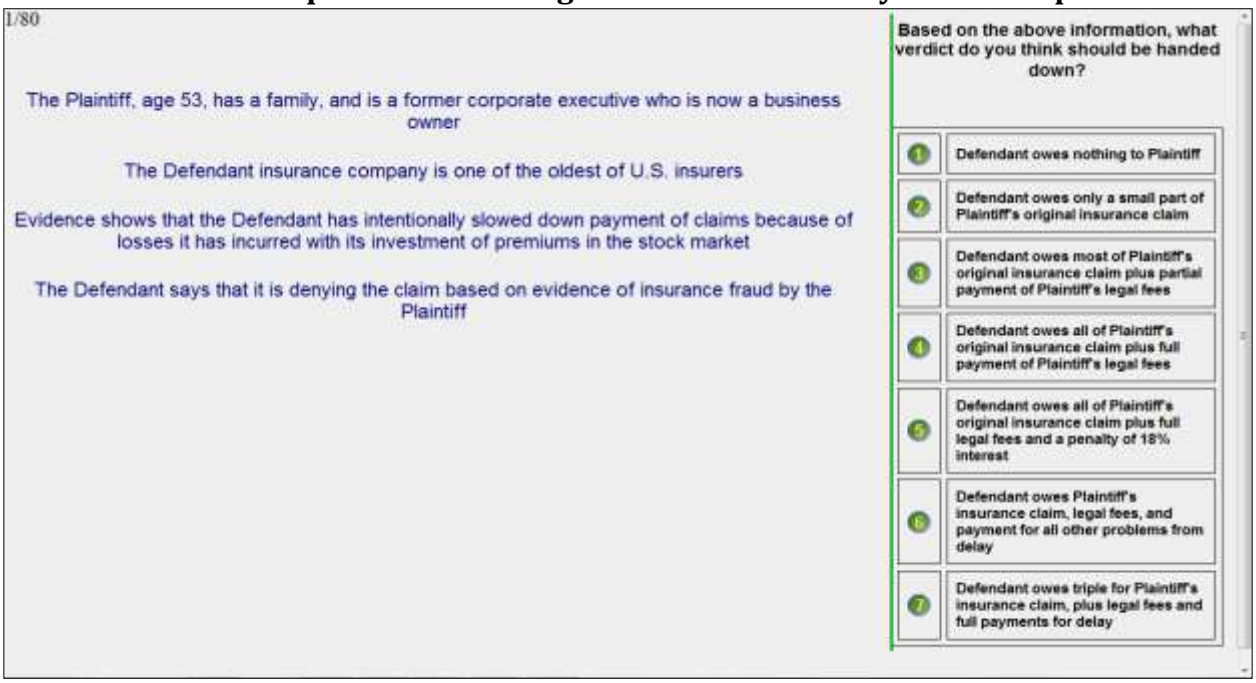
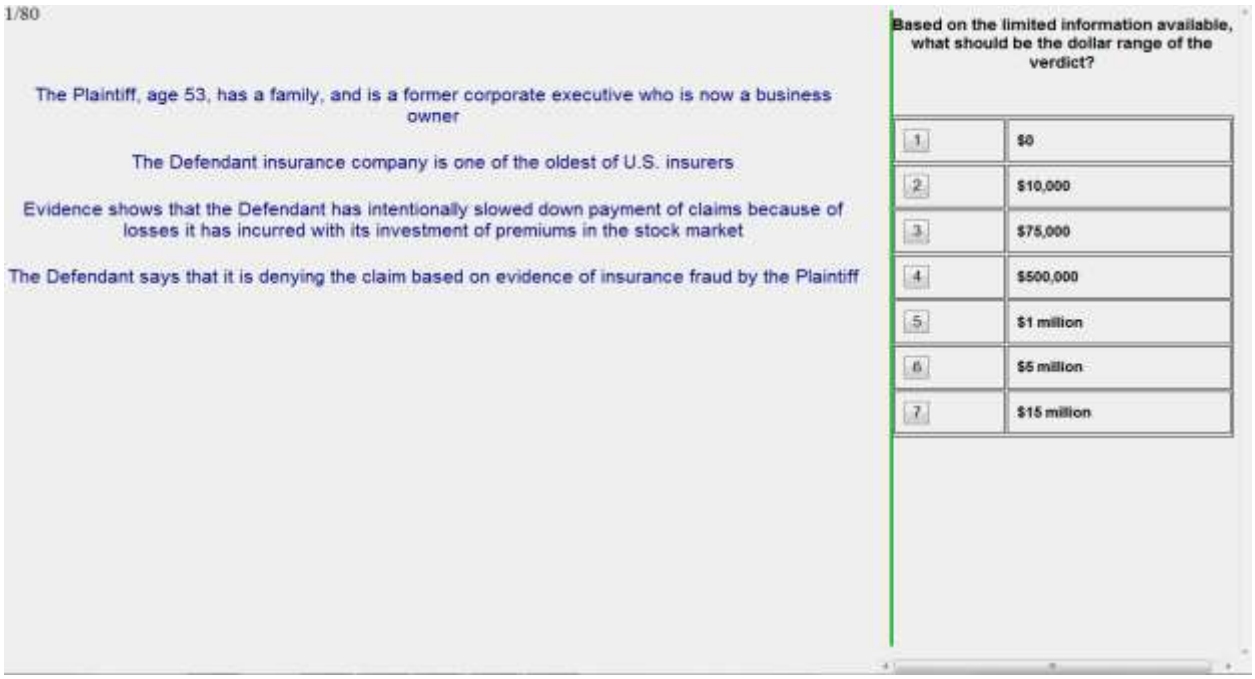


Figure 10.3: The same vignette as Figure 10.2 shows, this time with question #2 on the right.



Building the models and running the data for the total panel (Table 10.3)

The essence of our analysis is the relation between the first question (verdict) and the presence/absence of the 36 elements. Each element appeared as an independent agent, a total of five times in the 48 vignettes rated by a respondent, with each respondent evaluating a unique set of 48 vignettes. The same elements appeared, albeit in different combinations. In effect the RDE study for this insurance case, like the other cases dealt with in this book, constitutes a 'torture' test for elements. Elements which generate high impact values, i.e., drive the verdict rating to the high values 6-7, are those elements which have the greatest power to convince the respondent that the insurance company is in the wrong, and that the liability is high.

6 = Defendant owes Plaintiff's insurance claim, legal fees, and payment for all other problems from delay
7 = Defendant owes triple for Plaintiff's insurance claim, plus legal fees and full payments for delay

We create an individual model for each of the 317 respondents. The model that we discuss here, the INT model (abbreviated from the word Interest) is created by first transforming an individual's rating for a vignette to a binary rating. Original ratings 1-5 are transformed to 0, original ratings of 6-7

Looking at the aggregate results in Table 10.3 tells us that, on the average:

1. The basic ingoing argument is fairly weak. It is the elements which must do the 'work' to generate a strong verdict, ratings 6 and 7, respectively. The additive constant, 13, means that in the absence of elements, a purely hypothetical condition but nonetheless

a good benchmark, only 13% of the respondents feel that the case merits a rating of 6-7, the strong verdict.

2. With 36 different elements acting as free agents, only one element manages to reach the operationally defined critical area of important, where it can drive an additional 10% of the respondents to the strong verdict: *The report from the Defendant's claim adjuster recommended full payment of the claim, but the office supervisor reversed the recommendation and denied the claim without explanation*

3. It's not that one element alone does well and all 35 remaining elements do poorly. Rather, as one might expect, with these 35 elements we find a distribution, with some almost reaching this strong performance. Both of these elements perform almost as well, with an impact of 9:

    a. *Evidence shows that the Defendant had already recorded the claim internally as "denied" before even receiving the written recommendation of its adjuster with an impact of 9, and*
    b. *The Defendant's representative responsible for this claim emailed a supervisor acknowledging the claim might have merit but noting the large size of the claim made it "a problem"*

4. On the other hand, there are elements which damage the plaintiff's claim, moving the verdict away from 6-7, and more to the low verdict of 1, where the plaintiff has no culpability at all:

    a. *The Defendant says that the filing of a claim only three months after acquiring the policy is suspicious, in light of some evidence that the claimed damage may have previously existed*
    b. *After the Plaintiff filed suit, the Defendant obtained the report of a new independent adjuster with more than thirty years of experience; the report supports denial of the claim*
    c. *The Defendant says that it is denying the claim based on evidence of insurance fraud by the Plaintiff*
    d. *The Defendant says that the Plaintiff made misrepresentations on its insurance application as part of obtaining insurance coverage from the Defendant*

5. When we look at the most influential elements in favor of the plaintiff policyholder, and alternatively in favor of the defendant insurance company, we see some patterns start to emerge.

    a. *Of the top eight most influential elements in favor of the plaintiff (Table 1), the top four reflect evidence of intentional wrongdoing by the insurance company. Three of the next four focus on the harmful effect to the plaintiff policyholder.*

b. When we consider the results from the opposite direction, looking at the elements most favorable to the defendant (Table 2), we see that all of them involve some form of questionable conduct by the plaintiff

6. Taken together, this initial overview of results suggests that the most powerful elements are those which answer the question, "Whose fault is this?" But as we dig into the natural segmentation of jurors, distinctions emerge.

Table 10.3: Performance of the 36 elements for the insurance case. Data from the total panel of 317 respondents

		Total Sample
	Base Size	317
	Additive constant	13
C6	The report from the Defendant's claim adjuster recommended full payment of the claim, but the office supervisor reversed the recommendation and denied the claim without explanation	**10**
D6	Evidence shows that the Defendant had already recorded the claim internally as "denied" before even receiving the written recommendation of its adjuster	9
D3	The Defendant's representative responsible for this claim emailed a supervisor acknowledging the claim might have merit but noting the large size of the claim made it "a problem"	9
C1	When the Defendant's first adjustor recommended payment of the claim, the Defendant instead sent a second adjustor with less experience who recommended denial of the claim	8
F4	The Defendant's refusal to pay the insurance claim has interfered with the Plaintiff's ability to stay in business and continue operations	7
F5	The Defendant's denial of the insurance claim has forced the Plaintiff to incur numerous additional expenses, resulting in a financial loss for the year	7
F3	The Plaintiff is being impacted financially not only by the Defendant insurance company's refusal to pay the claim; the cost of the litigation is also draining the Plaintiff	7
C4	Internal emails of the Defendant reveal that claims personnel have been instructed to slow down the payment of claims, apparently in order to allow for longer investment of premiums	7
C2	An internal memo reveals that the Defendant has made a routine of first denying claims like that filed by the Plaintiff because statistics show that to be the most profitable practice for the insurance company	6
C3	Evidence shows that the Defendant has intentionally slowed down payment of claims because of losses it has incurred with its investment of premiums in the stock market	6
F2	In addition to other problems, the Plaintiff's dispute with the Defendant	5

	insurance company has interfered with the Plaintiff's ability to get replacement insurance coverage	
D1	Investigation has revealed that the Defendant has substantially increased its net profits over the last three years by reducing the amounts it pays on claims compared to premiums	5
D4	Statistical sampling reveals that the Defendant denies a higher percentage of claims when they come from customers – like the Plaintiff – who are less likely to challenge the denial	5
A3	The Plaintiff graduated from college four years ago, and has recently purchased her first home after earning enough from her new business to provide the down payment	5
A6	The Plaintiff is a charitable organization operating homeless shelters and secondhand resale shops in four cities	5
C5	Evidence shows that, for certain types of claims such as the one in this case, the Defendant utilizes employee adjusters who deny claims far more often than independent adjusters	5
F1	The Defendant's denial of the Plaintiff's insurance claim has forced the Plaintiff into a difficult cash shortage, leading to an increasing series of other problems	5
D2	The Defendant rewards its claims personnel with bonuses based in large part on profitability from the percentage of claims successfully denied	5
A1	The Plaintiff is Asian, a woman, age 74, who lives alone and operates a small grocery, and for whom English is a second language	4
F6	The Plaintiff's lawyer points out that the Defendant's refusal to honor the insurance policy is calculated to force the Plaintiff into a minimal settlement when the Plaintiff is most vulnerable	3
A4	The Plaintiff is a large corporation with regional office complexes in nine states	3
B5	The Defendant insurance company is not a major advertiser; its business model is based upon being the low-cost alternative offered by independent insurance agents	2
A2	The Plaintiff, age 53, has a family, and is a former corporate executive who is now a business owner	2
B1	The Defendant insurance company is a U.S. subsidiary of a large Swiss financial services holding company	2
D5	The Defendant has substantially reduced training and communication to its claims personnel on the legal duty to treat the claims of insured customers with "good faith"	0
A5	The Plaintiff is a local real estate company with two offices in the same city	0
B3	The Defendant insurance company is a wholly owned subsidiary of a major U.S. retail store chain	0
B4	The Defendant insurance company advertises heavily as being the best value for customers	0
B6	The Defendant insurance company markets itself as the superior choice	-1

	for the full protection of its insured customers	
B2	The Defendant insurance company is one of the oldest of U.S. insurers	-3
E3	The Defendant says that the Plaintiff's delay in filing the insurance claim made the claim difficult to investigate and verify	-8
E4	The Defendant says that the Plaintiff has failed and refused to fully cooperate in the investigation of the claim, by failing to provide the full documentation requested	***-10***
E5	The Defendant says that the filing of a claim only three months after acquiring the policy is suspicious, in light of some evidence that the claimed damage may have previously existed	***-10***
E1	After the Plaintiff filed suit, the Defendant obtained the report of a new independent adjuster with more than thirty years of experience; the report supports denial of the claim	***-12***
E2	The Defendant says that it is denying the claim based on evidence of insurance fraud by the Plaintiff	***-12***
E6	The Defendant says that the Plaintiff made misrepresentations on its insurance application as part of obtaining insurance coverage from the Defendant	***-13***

Gender differences in response to the insurance fraud (Table 10.4)

We occasionally see gender differences in response to the elements, although as we keep discovering, the 'real' differences seem to be those for which we deliberately prepare, namely the differences due to mind-set. Yet looking for gender differences still makes sense because we are conditioned to think of men and women responding to different aspects of an 'argument.'

Our gender data in Table 10.4 suggest that:

1. Both females and males consider the basic description of the case against the defendant to be weak. The additive constant is 9 for males, 16 for females. Recall that the additive constant tells us the basic conditional probability that the respondent will select verdicts 6 and 7, the strongest two verdicts, in the absence of elements. The conditional probabilities are 9% for males, 16% for females.

2. The arguments which persuade males deal with the statements about how the dispute is interfering with the plaintiff's ability to get replacement insurance, or that that the plaintiff is being drained by the processes involved in litigation. In other words, males respond to the inconvenience caused by the insurance company's refusal to pay the claim.

3. The arguments which persuade females to choose the strong verdict (ratings 6 and 7 on question #1) is the perceived dishonesty of the insurance company, a dishonesty emerging from the company being perceived to 'go back on its word.'

4. Females, far more than males, find reasons for reducing the verdict from the severe to the mild or even throwing out the case, i.e., from moving the verdict from a high of 6-7, to a low of 1-5. The mitigating circumstances in favor of the defendant range from the statement that the plaintiff is lying, and on to the fact that the plaintiff did not go through the appropriate procedures.

Table 10.4: Performance of the strongest of the 36 elements for the insurance case. Positive numbers push towards the severe penalties (6 and 7 on question 1). Negative elements push towards the milder penalities (1-5 on question 1). Data broken out by gender.

		Tot	Male	Fem
	Base Size	317	141	176
	Constant	13	9	16
	Male			
F2	In addition to other problems, the Plaintiff's dispute with the Defendant insurance company has interfered with the Plaintiff's ability to get replacement insurance coverage	5	9	3
F3	The Plaintiff is being impacted financially not only by the Defendant insurance company's refusal to pay the claim; the cost of the litigation is also draining the Plaintiff	7	9	6
C1	When the Defendant's first adjustor recommended payment of the claim, the Defendant instead sent a second adjustor with less experience who recommended denial of the claim	8	8	8
F4	The Defendant's refusal to pay the insurance claim has interfered with the Plaintiff's ability to stay in business and continue operations	7	8	7
E6	The Defendant says that the Plaintiff made misrepresentations on its insurance application as part of obtaining insurance coverage from the Defendant	***-13***	***-11***	***-15***
	Female			
C6	The report from the Defendant's claim adjuster recommended full payment of the claim, but the office supervisor reversed the recommendation and denied the claim without explanation	**10**	7	**12**
D3	The Defendant's representative responsible for this claim emailed a supervisor acknowledging the claim might have merit but noting the large size of the claim made it "a problem"	9	4	**12**
D6	Evidence shows that the Defendant had already recorded the claim internally as "denied" before even receiving the written recommendation of its adjuster	9	7	**11**
E5	The Defendant says that the filing of a claim only three months after acquiring the policy is suspicious, in light of some evidence that the claimed damage may have previously existed	***-10***	-8	***-12***

E4	The Defendant says that the Plaintiff has failed and refused to fully cooperate in the investigation of the claim, by failing to provide the full documentation requested	***-10***	-7	***-13***
E1	After the Plaintiff filed suit, the Defendant obtained the report of a new independent adjuster with more than thirty years of experience; the report supports denial of the claim	***-12***	-9	***-14***
E6	The Defendant says that the Plaintiff made misrepresentations on its insurance application as part of obtaining insurance coverage from the Defendant	***-13***	***-11***	***-15***
E2	The Defendant says that it is denying the claim based on evidence of insurance fraud by the Plaintiff	***-12***	-7	***-16***

Age and responses to the insurance case (Table 10.5)

As the respondent gets older the likelihood to select the stronger verdict increases (Table 10.5). We see that increase from the additive constant, which is low for the younger group (under 45), and which jumps from 12-13 to 27 when the respondent is older. We see the following:

1. Respondents under 30 years old are indifferent to the plaintiff's statements. The only element which breakfast through is the bold statement by the defense that it has evidence regarding fraud by the plaintiff.

2. When the respondent is a bit older, ages 30-44 there is a sense of outrage and identification with the plaintiff. For this middle group, the two elements which drive towards the stronger verdict (6 and 7) talk about the procedural issues involved, leading to the denial of benefits. On the other hand, this middle group 'leans' more towards the defendant's point of view when the arguments are made about procedural problems caused by the plaintiff.

3. The older respondents, ages 45+, show dramatic polarization. There is a sense of restrained fury at the insurance company when the argument is made to slow down the process and deny the plaintiff the assumed well-deserved insurance money. There is an opposite, similarly polarized response, when the argument is made that the plaintiff willfully acted in a dishonest fashion.

4. The bottom line is that for one of the few times in this book we see radically different responses to argument by age, not so much in terms of responding to different argument as the younger respondents don't respond very strongly, whereas the older respondents respond very strongly.

Table 10.5: Performance of the strongest of the 36 elements for the insurance case Positive numbers push towards the strong verdicts (6 and 7 on question 1). Negative elements push towards the milder verdicts (1-5 on question 1). Data broken out by three age groups

		Total Sample	Age <30	Age 30-44	Age 45+
	Base Size	317	119	125	83
	Additive constant	13	13	12	27
	Age < 30				
E2	The Defendant says that it is denying the claim based on evidence of insurance fraud by the Plaintiff	***-12***	***-11***	***-12***	***-21***
	Age30-44				
C6	The report from the Defendant's claim adjuster recommended full payment of the claim, but the office supervisor reversed the recommendation and denied the claim without explanation	**10**	6	**11**	**17**
D3	The Defendant's representative responsible for this claim emailed a supervisor acknowledging the claim might have merit but noting the large size of the claim made it "a problem"	9	3	**10**	**19**
E1	After the Plaintiff filed suit, the Defendant obtained the report of a new independent adjuster with more than thirty years of experience; the report supports denial of the claim	***-12***	-5	***-10***	***-36***
E3	The Defendant says that the Plaintiff's delay in filing the insurance claim made the claim difficult to investigate and verify	-8	-4	***-12***	***-10***
E4	The Defendant says that the Plaintiff has failed and refused to fully cooperate in the investigation of the claim, by failing to provide the full documentation requested	***-10***	-4	***-12***	***-27***
E2	The Defendant says that it is denying the claim based on evidence of insurance fraud by the Plaintiff	***-12***	***-11***	***-12***	***-21***
E5	The Defendant says that the filing of a claim only three months after acquiring the policy is suspicious, in light of some evidence that the claimed damage may have previously existed	***-10***	-4	***-13***	***-21***
E6	The Defendant says that the Plaintiff made misrepresentations on its insurance application as part of obtaining insurance coverage from the Defendant	***-13***	-9	***-13***	***-28***
	Age45+				
C4	Internal emails of the Defendant reveal that claims personnel have been instructed to slow down the payment of claims, apparently in order to allow for longer investment of premiums	7	-2	7	**26**
F4	The Defendant's refusal to pay the insurance claim has interfered with the Plaintiff's ability to stay in	7	4	6	**19**

	business and continue operations				
D3	The Defendant's representative responsible for this claim emailed a supervisor acknowledging the claim might have merit but noting the large size of the claim made it "a problem"	9	3	**10**	**19**
C1	When the Defendant's first adjustor recommended payment of the claim, the Defendant instead sent a second adjustor with less experience who recommended denial of the claim	8	4	8	**18**
C2	An internal memo reveals that the Defendant has made a routine of first denying claims like that filed by the Plaintiff because statistics show that to be the most profitable practice for the insurance company	6	1	6	**17**
C6	The report from the Defendant's claim adjuster recommended full payment of the claim, but the office supervisor reversed the recommendation and denied the claim without explanation	**10**	6	**11**	**17**
C3	Evidence shows that the Defendant has intentionally slowed down payment of claims because of losses it has incurred with its investment of premiums in the stock market	6	2	7	**16**
F1	The Defendant's denial of the Plaintiff's insurance claim has forced the Plaintiff into a difficult cash shortage, leading to an increasing series of other problems	5	3	3	**16**
C5	Evidence shows that, for certain types of claims such as the one in this case, the Defendant utilizes employee adjusters who deny claims far more often than independent adjusters	5	0	5	**15**
F5	The Defendant's denial of the insurance claim has forced the Plaintiff to incur numerous additional expenses, resulting in a financial loss for the year	7	1	9	**15**
B5	The Defendant insurance company is not a major advertiser; its business model is based upon being the low-cost alternative offered by independent insurance agents	2	-3	3	**13**
D6	Evidence shows that the Defendant had already recorded the claim internally as "denied" before even receiving the written recommendation of its adjuster	9	6	9	**13**
D4	Statistical sampling reveals that the Defendant denies a higher percentage of claims when they come from customers – like the Plaintiff – who are less likely to challenge the denial	5	3	4	**12**
D1	Investigation has revealed that the Defendant has substantially increased its net profits over the last	5	1	8	**11**

	three years by reducing the amounts it pays on claims compared to premiums				
F3	The Plaintiff is being impacted financially not only by the Defendant insurance company's refusal to pay the claim; the cost of the litigation is also draining the Plaintiff	7	3	9	**11**
A3	The Plaintiff graduated from college four years ago, and has recently purchased her first home after earning enough from her new business to provide the down payment	5	3	6	**10**
E3	The Defendant says that the Plaintiff's delay in filing the insurance claim made the claim difficult to investigate and verify	-8	-4	***-12***	***-10***
E2	The Defendant says that it is denying the claim based on evidence of insurance fraud by the Plaintiff	***-12***	***-11***	***-12***	***-21***
E5	The Defendant says that the filing of a claim only three months after acquiring the policy is suspicious, in light of some evidence that the claimed damage may have previously existed	***-10***	-4	***-13***	***-21***
E4	The Defendant says that the Plaintiff has failed and refused to fully cooperate in the investigation of the claim, by failing to provide the full documentation requested	***-10***	-4	***-12***	***-27***
E6	The Defendant says that the Plaintiff made misrepresentations on its insurance application as part of obtaining insurance coverage from the Defendant	***-13***	-9	***-13***	***-28***
E1	After the Plaintiff filed suit, the Defendant obtained the report of a new independent adjuster with more than thirty years of experience; the report supports denial of the claim	***-12***	-5	***-10***	***-36***

Ethnicity and responses to the insurance case (Table 10.6)

Now that we have seen the strong differences across ages, we move on to differences among the four ethnic groups that were specified in the recruiting for this particular study. The groups are Asian, Black, Whites and Hispanics, with minimum of 40 respondents for each group. Although it's ideal to balance these groups, so that the final 317 comprises approximately ¼ or 75+ respondents from each group, that ideal is hard to achieve. The panel of respondents tends to be biased towards White respondents, but we can assign a minimum quota. That quota is 40+ for each group, a sufficiently large group to generate convergent, steady-state patterns in the impact value.

Table 10.6 shows us the elements strongly driving the response to verdicts 6 and 7, the two most severe, and the elements driving responses away from those two strong verdicts. We see that:

1. The additive constants, the proclivity to select the two most severe verdicts, varies dramatically by ethnicity, with Asians and Blacks show virtually no proclivity to select a severe verdict, and in contrast Hispanics showing a moderate proclivity.

Total	*13*
Asian	*-3*
Black	*3*
White	*20*
Hispanic	*26*

2. It's the elements which make all the difference, however, differences far beyond those we see in the additive constant.

3. For the Asian respondents, it's about describing the respondent as an Asian (something which turns off Hispanics), the fact that that insurance company is very large, and that the insurance company has systematically 'cheated' its insures.

4. For the Black respondents it's all about the insurance company making it difficult for the insured to continue in business. On the other hand, when the defendant says that the plaintiff has defrauded the insurance company, the Black respondent moves dramatically away from the strong verdict (against the defendant insurance company).

5. For the White respondent, the strong verdict against the defendant emerge with statements that the insurance company deliberately engaged in activities that made it hard for insures to collect. Like the other groups, when the argument is made about the plaintiff making a false claim, the White respondents move away from the strong verdict.

6. For the Hispanic respondents, with the highest additive constant, the only additional statement which leads to a strong verdict is that the company rewards 'making it difficult' for insureed to collect. On the other hand, when the plaintiff is made out to have filed a false claim, the Hispanic respondent also moves away from the strong verdict.

7. The bottom line is that with this insurance case we see the dramatic ability for statements to polarize for versus against the defendant. Perhaps the reason stems from the latent hostility towards big companies, and the sense that these companies make money by 'crushing' the little guy.

Table 10.7: Performance of the strongest of the 36 elements for the insurance case. Positive numbers push towards the stronger verdicts (6 and 7 on question 1). Negative elements push towards the weaker (1-5 on question 1). Data broken out by four ethnic segments

		Tot	Group
	Base Size	317	52
	Constant	13	-3
	Asian		
A1	The Plaintiff is Asian, a woman, age 74, who lives alone and operates a small grocery, and for whom English is a second language	4	**13**
A4	The Plaintiff is a large corporation with regional office complexes in nine states	3	**12**
D1	Investigation has revealed that the Defendant has substantially increased its net profits over the last three years by reducing the amounts it pays on claims compared to premiums	5	**10**
D6	Evidence shows that the Defendant had already recorded the claim internally as "denied" before even receiving the written recommendation of its adjuster	9	**10**
	Black		
F4	The Defendant's refusal to pay the insurance claim has interfered with the Plaintiff's ability to stay in business and continue operations	7	**26**
F5	The Defendant's denial of the insurance claim has forced the Plaintiff to incur numerous additional expenses, resulting in a financial loss for the year	7	**18**
F2	In addition to other problems, the Plaintiff's dispute with the Defendant insurance company has interfered with the Plaintiff's ability to get replacement insurance coverage	5	**16**
F3	The Plaintiff is being impacted financially not only by the Defendant insurance company's refusal to pay the claim; the cost of the litigation is also draining the Plaintiff	7	**16**
D4	Statistical sampling reveals that the Defendant denies a higher percentage of claims when they come from customers – like the Plaintiff – who are less likely to challenge the denial	5	**15**
F1	The Defendant's denial of the Plaintiff's insurance claim has forced the Plaintiff into a difficult cash shortage, leading to an increasing series of other problems	5	**13**
D1	Investigation has revealed that the Defendant has substantially increased its net profits over the last three years by reducing the amounts it pays on claims compared to premiums	5	**12**
A2	The Plaintiff, age 53, has a family, and is a former corporate executive who is now a business owner	2	**12**
F6	The Plaintiff's lawyer points out that the Defendant's refusal to honor the insurance policy is calculated to force the Plaintiff into a minimal settlement when the Plaintiff is most vulnerable	3	**12**
D3	The Defendant's representative responsible for this claim emailed a supervisor acknowledging the claim might have merit but noting the large size of the claim made it "a problem"	9	**11**
C1	When the Defendant's first adjustor recommended payment of the	8	**11**

	claim, the Defendant instead sent a second adjustor with less experience who recommended denial of the claim		
E2	The Defendant says that it is denying the claim based on evidence of insurance fraud by the Plaintiff	***-12***	***-14***
E6	The Defendant says that the Plaintiff made misrepresentations on its insurance application as part of obtaining insurance coverage from the Defendant	***-13***	***-14***
E4	The Defendant says that the Plaintiff has failed and refused to fully cooperate in the investigation of the claim, by failing to provide the full documentation requested	***-10***	***-15***
	White		
C6	The report from the Defendant's claim adjuster recommended full payment of the claim, but the office supervisor reversed the recommendation and denied the claim without explanation	**10**	**14**
C1	When the Defendant's first adjustor recommended payment of the claim, the Defendant instead sent a second adjustor with less experience who recommended denial of the claim	8	**12**
C4	Internal emails of the Defendant reveal that claims personnel have been instructed to slow down the payment of claims, apparently in order to allow for longer investment of premiums	7	**12**
D6	Evidence shows that the Defendant had already recorded the claim internally as "denied" before even receiving the written recommendation of its adjuster	9	**10**
E3	The Defendant says that the Plaintiff's delay in filing the insurance claim made the claim difficult to investigate and verify	-8	***-11***
E4	The Defendant says that the Plaintiff has failed and refused to fully cooperate in the investigation of the claim, by failing to provide the full documentation requested	***-10***	***-13***
E5	The Defendant says that the filing of a claim only three months after acquiring the policy is suspicious, in light of some evidence that the claimed damage may have previously existed	***-10***	***-14***
E2	The Defendant says that it is denying the claim based on evidence of insurance fraud by the Plaintiff	***-12***	***-16***
E1	After the Plaintiff filed suit, the Defendant obtained the report of a new independent adjuster with more than thirty years of experience; the report supports denial of the claim	***-12***	***-16***
E6	The Defendant says that the Plaintiff made misrepresentations on its insurance application as part of obtaining insurance coverage from the Defendant	***-13***	***-17***
	Hispanic		
D2	The Defendant rewards its claims personnel with bonuses based in large part on profitability from the percentage of claims successfully denied	5	**13**
E2	The Defendant says that it is denying the claim based on evidence of	***-12***	***-10***

	insurance fraud by the Plaintiff		
E5	The Defendant says that the filing of a claim only three months after acquiring the policy is suspicious, in light of some evidence that the claimed damage may have previously existed	***-10***	***-11***
E6	The Defendant says that the Plaintiff made misrepresentations on its insurance application as part of obtaining insurance coverage from the Defendant	***-13***	***-14***
E4	The Defendant says that the Plaintiff has failed and refused to fully cooperate in the investigation of the claim, by failing to provide the full documentation requested	***-10***	***-15***
E1	After the Plaintiff filed suit, the Defendant obtained the report of a new independent adjuster with more than thirty years of experience; the report supports denial of the claim	***-12***	***-21***

The two (or three) mind-set segments for the insurance case (Table 10.8)

We finish this section by looking at the pattern of responses to the elements, on a respondent by respondent basis, and then segmenting the respondents into like-minded groups. The key to segmentation is a combination of parsimony and interpretability. By parsimony we mean as few segments as possible, with one homogeneous group better than two groups, better than three groups, and so forth.

In most cases we deal with, the segmentation is quite clear. We end up with two or perhaps three quite different groups, easy to interpret. Whether there are two or three segments often becomes a moot point – specifically, how much overlap do we want in the elements which 'drive' the response? We can easily opt for two, but just as easily opt for three segments.

In most segmentations run with data from RDE the segmentation emerges quite quickly with two segments, quite large. Only later, as we refine the segmentation, do segments of smaller size emerge. Our segmentation for this insurance case suggests two large segments, and one small segment, whose response pattern is hard to interpret.

Our results for the insurance case follow a different dynamic, one worth noting. The first pass at the segmentation revealed one very large segment of 293 respondents, and a small segment of 24 respondents. This pattern itself is very unusual. The large group comprised individuals with two predisposition in it – those critical of the insurance company for what did in the actual insurance case (the process), and those negative of the insurance company because of how its behavior affected a small business. Those two large segments should have emerged immediately. What did emerge is a 'spoiler' group of 24 respondents, a group that maintained its identity as the two-segment solution became a three-segment solution, and later a four-segment solution.

What drives segment three, this small group of 24 respondents, is a seeming fury at the insurance company, a fury which incorporates a strong criticism of the defendant, the insurance company, for a host of unrelated reasons, such as the fact that the plaintiff was a 74 year old Chinese lady. Or the feeling that the defendant is somehow wrong when pointing out the fact that *The Plaintiff is Asian, a woman, age 74, who lives alone and operates a small grocery, and for whom English is a second language.* This is an irrelevant fact for the other segments, but for Segment 3 a strong reason for selecting the two most severe verdicts.

When we discard Segment 3, and work only with the remaining 293 respondents, this big group breaks into two key segments:

1. Segment 1, with the majority of respondents 175), shows a very low additive constant. It will be the elements which must do the work.

2. Segment 1 appears to react strongly to elements which focus on the process of the insurance company as one which deliberately employs morally dubious practices in order to reduce claims. Note that the language is ours – nowhere is that mentioned directly, although it is hinted at in the strong performing elements, those elements driving the strong verdicts 6 and 7. There are no mitigating elements in Segment 1, no elements which drive away the strong negativity towards the insurance company.

3. Segment 2 with a slightly higher additive constant, 17, also has to be convinced by argument. The elements driving the response of Segment 2 are those dealing with the impact that the claims process has on the life of the insured. Just as a perceived injury to the insured life drives Segment 2 to select the severe verdict 6 and 7, so does the statement about insurance fraud drive Segment away from the severe verdicts. Segment 2 appears to have an ingrained ethical standard about doing the proper thing, whether that be the insurance company 'honoring its commitment' in a timely fashion, or the insured acting honorably.

4. The bottom line for the segmentation, therefore, is a sense of negative responses to a corporation's internal processes (Segment 1) versus the consideration of how the behavior of one party in the dispute affects the other (Segment 2). Segment 2 looks at the behavior of the plaintiff as well, not just at the behavior of the defendant.

Table 10.8: Performance of the strongest of the 36 elements for the insurance case. Positive numbers push towards the stronger penalties (6 and 7 on question 1). Negative elements push towards the weaker penalities (1-5 on question 1). Data broken out by three mind-set segments

		Total	Seg1	Seg2	Seg3
	Base Size	317	175	118	24
	Additive constant	13	9	17	25

	Segment 1 – The insurance company deliberately employs morally dubious practices to reduce claims				
C6	The report from the Defendant's claim adjuster recommended full payment of the claim, but the office supervisor reversed the recommendation and denied the claim without explanation	**10**	**16**	4	-8
D6	Evidence shows that the Defendant had already recorded the claim internally as "denied" before even receiving the written recommendation of its adjuster	9	**15**	9	***-27***
C1	When the Defendant's first adjustor recommended payment of the claim, the Defendant instead sent a second adjustor with less experience who recommended denial of the claim	8	**14**	3	***-11***
C3	Evidence shows that the Defendant has intentionally slowed down payment of claims because of losses it has incurred with its investment of premiums in the stock market	6	**12**	0	***-10***
C2	An internal memo reveals that the Defendant has made a routine of first denying claims like that filed by the Plaintiff because statistics show that to be the most profitable practice for the insurance company	6	**12**	0	-4
D3	The Defendant's representative responsible for this claim emailed a supervisor acknowledging the claim might have merit but noting the large size of the claim made it "a problem"	9	**11**	9	***-13***
C4	Internal emails of the Defendant reveal that claims personnel have been instructed to slow down the payment of claims, apparently in order to allow for longer investment of premiums	7	**11**	3	-8
	Segment 2 - The insurance company's denial has hurt the plaintiff financially in terms of business practice				
F4	The Defendant's refusal to pay the insurance claim has interfered with the Plaintiff's ability to stay in business and continue operations	7	2	**19**	-8
F3	The Plaintiff is being impacted financially not only by the Defendant insurance company's refusal to pay the claim; the cost of the litigation is also draining the Plaintiff	7	5	**17**	***-22***
F5	The Defendant's denial of the insurance claim has forced the Plaintiff to incur numerous additional expenses, resulting in a financial loss for the year	7	5	**14**	***-12***
F1	The Defendant's denial of the Plaintiff's insurance	5	0	**13**	0

	claim has forced the Plaintiff into a difficult cash shortage, leading to an increasing series of other problems				
F2	In addition to other problems, the Plaintiff's dispute with the Defendant insurance company has interfered with the Plaintiff's ability to get replacement insurance coverage	5	2	**13**	-5
F6	The Plaintiff's lawyer points out that the Defendant's refusal to honor the insurance policy is calculated to force the Plaintiff into a minimal settlement when the Plaintiff is most vulnerable	3	1	**10**	***-17***
E3	The Defendant says that the Plaintiff's delay in filing the insurance claim made the claim difficult to investigate and verify	-8	-5	***-14***	1
E1	After the Plaintiff filed suit, the Defendant obtained the report of a new independent adjuster with more than thirty years of experience; the report supports denial of the claim	***-12***	***-12***	***-15***	8
E4	The Defendant says that the Plaintiff has failed and refused to fully cooperate in the investigation of the claim, by failing to provide the full documentation requested	***-10***	***-10***	***-16***	**14**
E5	The Defendant says that the filing of a claim only three months after acquiring the policy is suspicious, in light of some evidence that the claimed damage may have previously existed	***-10***	***-10***	***-16***	**14**
E2	The Defendant says that it is denying the claim based on evidence of insurance fraud by the Plaintiff	***-12***	-9	***-19***	4
E6	The Defendant says that the Plaintiff made misrepresentations on its insurance application as part of obtaining insurance coverage from the Defendant	***-13***	***-11***	***-20***	4
	Segment 3 – The plaintiff acts in poor faith				
A1	The Plaintiff is Asian, a woman, age 74, who lives alone and operates a small grocery, and for whom English is a second language	4	5	2	**16**
E5	The Defendant says that the filing of a claim only three months after acquiring the policy is suspicious, in light of some evidence that the claimed damage may have previously existed	***-10***	***-10***	***-16***	**14**
E4	The Defendant says that the Plaintiff has failed and refused to fully cooperate in the investigation of the claim, by failing to provide the full documentation requested	***-10***	***-10***	***-16***	**14**
F6	The Plaintiff's lawyer points out that the Defendant's refusal to honor the insurance policy is calculated to	3	1	**10**	***-17***

	force the Plaintiff into a minimal settlement when the Plaintiff is most vulnerable				
F3	The Plaintiff is being impacted financially not only by the Defendant insurance company's refusal to pay the claim; the cost of the litigation is also draining the Plaintiff	7	5	**17**	***-22***
D6	Evidence shows that the Defendant had already recorded the claim internally as "denied" before even receiving the written recommendation of its adjuster	9	**15**	9	***-27***

Practical application of the segmentation results to litigation (Tables 10.9 - 10.11)

When we discard the third segment, folding it into the first two, larger segments, we end up with the opportunity to use these segmentation results for litigation strategy. By way of review, our results from 317 respondents reveal most jurors naturally falling into one of two major segments in an insurance bad faith case. [FN2]

With both segments, pro-defendant reactions (i.e. in favor of the insurance company) are triggered by the same elements. The elements triggering pro-defendant reactions (low ratings, around 1-4) all suggest that the policyholder's insurance claim is worthless or even fraudulent, as shown by Table 10.9 below. In contrast, strongest pro-plaintiff reactions, i.e., those ratings of the verdict in favor of the policyholder are triggered by two completely distinct kinds of elements in the two segments, as shown in Tables 10.010 and 0.11, respectively.

First, the elements triggering pro-defendant reactions (Table 10.9)

Table 10.9: The elements triggering pro-defendant reactions

		Total Sample	**Segment 1**	**Segment 2**
	Base size	317	175	118
	Additive constant	13	9	17
E6	The Defendant says that the Plaintiff made misrepresentations on its insurance application as part of obtaining insurance coverage from the Defendant	-13	-11	-20
E2	The Defendant says that it is denying the claim based on evidence of insurance fraud by the Plaintiff	-12	-9	-19
E1	After the Plaintiff filed suit, the Defendant obtained the report of a new independent adjuster with more than thirty years of experience; the report supports denial of the claim	-12	-12	-15
E5	The Defendant says that the filing of a claim only three months after acquiring the policy is	-10	-10	-16

	suspicious, in light of some evidence that the claimed damage may have previously existed			
E4	The Defendant says that the Plaintiff has failed and refused to fully cooperate in the investigation of the claim, by failing to provide the full documentation requested	-10	-10	-16
E3	The Defendant says that the Plaintiff's delay in filing the insurance claim made the claim difficult to investigate and verify	-8	-5	-14

Now we move to the two-segment solution, disregarding the third segment. We will find this two-segment solution easier from the point of view of understanding what drives the judgment about the insurance company. The first – and larger – segment of respondents might best be described as "fault-focused" jurors. This segment, comprising 55% of all respondents, focuses primarily on evidence of questionable or suspicious conduct by the defendant insurance company (Table 10.10)

Table 10.10: The elements driving the response of Segment 1, the 'fault-focused' jurors

		Tot	**Seg 1**
	Base Size	317	175
	Additive constant	13	9
C6	The report from the Defendant's claim adjuster recommended full payment of the claim, but the office supervisor reversed the recommendation and denied the claim without explanation	10	16
D6	Evidence shows that the Defendant had already recorded the claim internally as "denied" before even receiving the written recommendation of its adjuster	9	15
C1	When the Defendant's first adjustor recommended payment of the claim, the Defendant instead sent a second adjustor with less experience who recommended denial of the claim	8	14
C3	Evidence shows that the Defendant has intentionally slowed down payment of claims because of losses it has incurred with its investment of premiums in the stock market	6	12
C2	An internal memo reveals that the Defendant has made a routine of first denying claims like that filed by the Plaintiff because statistics show that to be the most profitable practice for the insurance company	6	12
D3	The Defendant's representative responsible for this claim emailed a supervisor acknowledging the claim might have merit but noting the large size of the claim made it "a problem"	9	11
C4	Internal emails of the Defendant reveal that claims personnel have been instructed to slow down the payment of claims, apparently in order to allow for longer investment of premiums	7	11

The second major segment, with 37% of all respondents, might best be described as "harm-focused" jurors. This segment reacts most strongly for the plaintiff policyholder when confronted with evidence of serious harm to the plaintiff (Table 10.11).

Table 10.11: The elements driving the response of Segment 2, the 'harm-focused' jurors

		Tot	**Seg2**
	Base Size	317	118
	Constant	13	17
F4	The Defendant's refusal to pay the insurance claim has interfered with the Plaintiff's ability to stay in business and continue operations	7	19
F3	The Plaintiff is being impacted financially not only by the Defendant insurance company's refusal to pay the claim; the cost of the litigation is also draining the Plaintiff	7	17
F5	The Defendant's denial of the insurance claim has forced the Plaintiff to incur numerous additional expenses, resulting in a financial loss for the year	7	14
F1	The Defendant's denial of the Plaintiff's insurance claim has forced the Plaintiff into a difficult cash shortage, leading to an increasing series of other problems	5	13
F2	In addition to other problems, the Plaintiff's dispute with the Defendant insurance company has interfered with the Plaintiff's ability to get replacement insurance coverage	5	13
F6	The Plaintiff's lawyer points out that the Defendant's refusal to honor the insurance policy is calculated to force the Plaintiff into a minimal settlement when the Plaintiff is most vulnerable	3	10

As already pointed out, there is virtually no difference between the two segments with regard to which elements produce a strong pro-defense reaction. This may be entirely consistent with our understanding of the two segments. Possibly each segment is analyzing the evidence in terms of who is "deserving." The "fault-focused" jurors may simply be focused on the question of who deserves *punishment*, while the "harm-focused" jurors may be focused on who deserves *help*.

Understanding the existence of these two distinct segments of jurors has implications for the trial of an insurance bad faith case:

1. Some insurance bad faith cases involve allegations of fraudulent or highly suspect claims-handling by the insurance company, but the consequential damages from the delay in payment of the claim may be minimal, i.e. once the court requires the claim to be paid, the plaintiff policyholder is essentially made whole.

2. Other insurance bad faith cases may involve only negligent claims-handling by the insurance company – rather than intentional bad-faith – but with severe consequential damages to the plaintiff resulting from the delay in payment.

3. When we recognize that jurors tend to fall into two distinct segments, it obviously places a premium on identifying the jurors who are most favorable and unfavorable to the specific kind of evidence in the case.

4. In addition, once a jury is selected, when there is a way to identify the composition of the jury according to this likely segmentation, that knowledge can help suggest how the story be told and what facts to emphasize. But that begs the question: Other than knowing that jurors naturally fall into these two segments, is there a way to anticipate which individual jurors fall into which segment?

Mind-set 'typing' - Predicting Segments from Attitudinal Questions? (Tables 10.12-10.14)

As part of this study, we instructed the respondents to answer some common attitudinal questions which are sometimes asked of jurors during jury selection. Our objective was to determine whether these standard or at least common questions could help us assign prospective jurors to the two mind-sets that we uncovered (Segment 1 and Segment 2).

These initial efforts reveal at least three directions to predicting the segmentation of the 'mind' that RDE uncovers with its use of experimental design. Remember that we are attempting to predict membership in one domain (response to specific facts of a specific case) from data in another domain (general attitudes). We ended up with four preliminary findings in those goal to predict mind-set segmentation of a specific case from general attitudinal questions:

Finding #1: Checking the fourth option (*Future pain and suffering can be very real…).* Checking, answer #4, predicts juror attitudes toward "pain and suffering" damages, but also suggests a "pro-plaintiff" attitude toward liability as well. The question may also predict results of the medical malpractice case:

> *Which one of the following BEST describes how you feel about someone seeking money for future pain and suffering in a lawsuit?*
>
> 1. *I don't believe in paying someone for pain and suffering, whether past or future*
> 2. *Future pain and suffering is probably too speculative for a jury to determine*
> 3. *Payment for future pain and suffering makes sense only with clear medical proof*

4. *Future pain and suffering can be very real and deserves full compensation if wrongly caused*

This group of 81 respondents score highly as "pro-plaintiff" jurors in an insurance bad faith case, despite the fact that insurance bad faith lawsuits typically don't involve allegations of physical "pain and suffering." We know that these 81 respondents are 'pro-plaintiff' because their impact values are very high versus the impact value of the total panel – for those elements that we deem, ahead of time, to be 'pro-plaintiff' (e.g., F3, C6, F5, etc.; see Table 10.12).

The possible predictive effect of this question doesn't stop there, however. Three out of four of the highest ranking elements for those respondents checking this fourth option correlate with the three highest ranking elements of the harm-focused segment of jurors *In other words, it's possible that a juror's selection of this fourth option may suggest not only a pro-plaintiff juror, but also a predominately harm-focused juror.*

Table 10.12: Strongest performing elements for those respondents checking option #4 (*Future pain and suffering can be very real and deserves full compensation if wrongly caused)*

	Which one of the following BEST describes how you feel about someone seeking money for future pain and suffering in a lawsuit? ***Option #4: Future pain and suffering can be very real and deserves full compensation if wrongly caused***	**Total Sample**	**Respondents checking option #4**
	Base size	317	81
	Additive constant	13	19
F3	The Plaintiff is being impacted financially not only by the Defendant insurance company's refusal to pay the claim; the cost of the litigation is also draining the Plaintiff	7	20
C6	The report from the Defendant's claim adjuster recommended full payment of the claim, but the office supervisor reversed the recommendation and denied the claim without explanation	10	13
F5	The Defendant's denial of the insurance claim has forced the Plaintiff to incur numerous additional expenses, resulting in a financial loss for the year	7	13
F4	The Defendant's refusal to pay the insurance claim has interfered with the Plaintiff's ability to stay in business and continue operations	7	11
D3	The Defendant's representative responsible for this claim emailed a supervisor acknowledging the claim might have merit but noting the large size of the claim made it "a problem"	9	11

D6	Evidence shows that the Defendant had already recorded the claim internally as "denied" before even receiving the written recommendation of its adjuster	9	11
C4	Internal emails of the Defendant reveal that claims personnel have been instructed to slow down the payment of claims, apparently in order to allow for longer investment of premiums	7	10
F2	In addition to other problems, the Plaintiff's dispute with the Defendant insurance company has interfered with the Plaintiff's ability to get replacement insurance coverage	5	10

Finding #2: Checking the first option (*I don't believe in paying someone for pain and suffering, whether past or future).* Respondents selecting the first option to this "pain and suffering" question are very strongly pro-defendant (reflected by both a low constant and a large *negative* sum of coefficients; Table 10.13). Although the first option *("I don't believe in paying someone for pain and suffering, whether past or future")* represents an extreme position chosen by only two percent of respondents, it is that extreme position, at a prima facie level, which allows those jurors to be specifically targeted by plaintiff counsel for exclusion from the jury

Table 10.13: Strongest performing elements for those respondents checking option #1 (*I don't believe in paying someone for pain and suffering, whether past or future).*

	Which one of the following BEST describes how you feel about someone seeking money for future pain and suffering in a lawsuit? ***Option #1: I don't believe in paying someone for pain and suffering, whether past or future).***	**Total Sample**	**Respondents checking option #1**
	Base size	317	7
	Additive constant	13	4
A1	The Plaintiff is Asian, a woman, age 74, who lives alone and operates a small grocery, and for whom English is a second language	4	-6
A3	The Plaintiff graduated from college four years ago, and has recently purchased her first home after earning enough from her new business to provide the down payment	5	-4
C3	Evidence shows that the Defendant has intentionally slowed down payment of claims because of losses it has incurred with its investment of premiums in the stock market	6	-4
B6	The Defendant insurance company markets itself as the superior choice for the full protection of its insured customers	-1	-4

A4	The Plaintiff is a large corporation with regional office complexes in nine states	3	-4
F3	The Plaintiff is being impacted financially not only by the Defendant insurance company's refusal to pay the claim; the cost of the litigation is also draining the Plaintiff	7	-3
	Sum total (key elements)	24	-25
	Sum total (all 36 elements)	63	-35

Finding #3: Agreeing with the statement *"Insurance bad faith often causes emotional distress which should be added to the amount of the claim.*' This second attitudinal question also offers the potential for similar predictive power. When asked to respond to the foregoing statement, "*Insurance bad faith often causes emotional distress which should be added to the amount of the claim*," 30% of respondents "strongly agree." As a group, these respondents appear to be harm-focused, pro-plaintiff jurors. They have a high constant (21) *and* a high positive sum of coefficients (86). And again, similar to the "pain and suffering" group, three out of four of the highest ranking elements for these respondents who "strongly agree" regarding "emotional distress" correlate with the three highest-ranking elements of the harm-focused segment of jurors As expected, this group also exhibits negative reactions to the same elements seen with both the harm-focused and the fault-focused jurors (Table 10.14).

Table 10.14: Strongest performing elements for those respondents checking 'strongly agree' with the statement: *"Insurance bad faith often causes emotional distress which should be added to the amount of the claim*

	Do you agree or disagree with this statement (1=strongly disagree…5=strongly agree) ***"Insurance bad faith often causes emotional distress which should be added to the amount of the claim***	***Total Sample***	***Emotional Distress: Strongly Agree***
	Base size	317	96
	Additive constant	13	21
F5	The Defendant's denial of the insurance claim has forced the Plaintiff to incur numerous additional expenses, resulting in a financial loss for the year	7	13
D6	Evidence shows that the Defendant had already recorded the claim internally as "denied" before even receiving the written recommendation of its adjuster	9	13
F4	The Defendant's refusal to pay the insurance claim has interfered with the Plaintiff's ability to stay in business and continue operations	7	12
F3	The Plaintiff is being impacted financially not only by the Defendant insurance company's refusal to pay the claim; the cost of the litigation is also draining the Plaintiff	7	10

E4	The Defendant says that the Plaintiff has failed and refused to fully cooperate in the investigation of the claim, by failing to provide the full documentation requested	-10	-11
E2	The Defendant says that it is denying the claim based on evidence of insurance fraud by the Plaintiff	-12	-11
E5	The Defendant says that the filing of a claim only three months after acquiring the policy is suspicious, in light of some evidence that the claimed damage may have previously existed	-10	-11
E1	After the Plaintiff filed suit, the Defendant obtained the report of a new independent adjuster with more than thirty years of experience; the report supports denial of the claim	-12	-14
E6	The Defendant says that the Plaintiff made misrepresentations on its insurance application as part of obtaining insurance coverage from the Defendant	-13	-15

Finding #4: One other attitudinal question also offers potential predictive power, one's view about insurance companies:

> *Which one of the following BEST describes your view of insurance companies generally?*
>
> 1. *Most insurance companies generally try to be honest and fair with their customers*
> 2. *There is a big difference between insurance companies in terms of fairness to customers*
> 3. *Insurance companies generally resist full payment of claims in order to maximize profits*

Those respondents choosing the third option (comprising 43% of all respondents) start with a lower constant (10) than the average for all respondents as a whole, but this group reflects a very large shift toward plaintiffs as judged by the sum of coefficients (140).

Perhaps more importantly, when we look at the top elements triggering the greatest pro-plaintiff response in this group (see Table 10.15), we see that six of the top seven elements are the same as six of the top seven elements of the fault-focused segment discussed above.

While the two attitudinal questions already discussed ("pain and suffering" and "emotional distress" questions) may be predictive of "harm-focused" jurors, this last question, about one's view of insurance companies in general, may be predictive of the other "fault-focused" segment. This offers intriguing possibilities for attorneys to select the right jurors for their case and to emphasize the right components of the case for the jurors selected.

Table 10.15: Strongest performing elements for those whose viewpoint of insurances is: Insurance companies generally resist full payment of claims in order to maximize profits

	Which one of the following BEST describes your view of insurance companies generally? ***Option #3: Insurance companies generally resist full payment of claims in order to maximize profits***	**Total Sample**	**Selecting option #3**
	Base size	317	136
	Additive constant	13	10
C6	The report from the Defendant's claim adjuster recommended full payment of the claim, but the office supervisor reversed the recommendation and denied the claim without explanation	10	14
D3	The Defendant's representative responsible for this claim emailed a supervisor acknowledging the claim might have merit but noting the large size of the claim made it "a problem"	9	14
C2	An internal memo reveals that the Defendant has made a routine of first denying claims like that filed by the Plaintiff because statistics show that to be the most profitable practice for the insurance company	6	13
C4	Internal emails of the Defendant reveal that claims personnel have been instructed to slow down the payment of claims, apparently in order to allow for longer investment of premiums	7	12
D6	Evidence shows that the Defendant had already recorded the claim internally as "denied" before even receiving the written recommendation of its adjuster	9	12
C5	Evidence shows that, for certain types of claims such as the one in this case, the Defendant utilizes employee adjusters who deny claims far more often than independent adjusters	5	11
C1	When the Defendant's first adjustor recommended payment of the claim, the Defendant instead sent a second adjustor with less experience who recommended denial of the claim	8	11
F5	The Defendant's denial of tuphe insurance claim has forced the Plaintiff to incur numerous additional expenses, resulting in a financial loss for the year	7	11
F3	The Plaintiff is being impacted financially not only by the Defendant insurance company's refusal to pay the claim; the cost of the litigation is also draining the Plaintiff	7	11

Summing up

References

[FN1] *See generally* Sharon Tennyson & William J. Warfel, "The Law and Economics of First-Party Insurance Bad Faith Liability," 16 *CONN. INS. LAW J.* 203 (Fall 2009).

[FN2] These two segments accounted for 293 of 317 respondents, or 92% of the total.

Chapter 11
Product Liability

Introduction

As we become increasingly dependent upon products and services that we buy, the likelihood increases that some of them may malfunction, often causing injury. 100% reliability is impossible to achieve, and indeed in many cases simply hard to achieve given one's resources to control the raw materials and the production. When the price is low, it becomes even more impossible to control quality, and thus one might be expected to see more reports about product (and service) malfunction.

The nature of the product malfunction will vary from product to product, as will the nature of the injury that is sustained. The malfunction may be a simple product failure, such as milk that spoils. Or it may be a car which catches fire because of a poorly constructed chassis failing to adequately vent the hot gases coming from the engine's combustion activities. The consequence, in turn, may be a momentarily unhappy shopper, or a severely injured motorist.

Product liability, as an area of law, focuses on product safety and the liability of manufacturers and sellers for unreasonably dangerous products. Many of these claims allege defects in medical devices and consumer products such as automobiles, toys, and electronics. Lawsuits on behalf of injured plaintiffs often include claims based on strict liability, negligence, breach of warranty, fraud and misrepresentation, as well as claims permitted by various state statutes such as consumer fraud statutes or the state's version of the Uniform Commercial Code. The legal requirements for making a product liability claim vary from state to state. However, almost all jurisdictions allow claims for injuries resulting from

1. A defective design;
2. A manufacturing defect
3. inadequate warnings
4. breach of an express warranty upon which the user justifiably relied.

"Strict liability" constitutes one of the most common causes of action. This typically means that the injured consumer (or surviving family members of a deceased consumer) must prove that the product was manufactured or sold in an unreasonably dangerous condition, without the legal necessity of showing that the unreasonably dangerous condition resulted from an intentional or even negligent choice of the manufacturer or seller.

In theory, speaking from a purely legal standpoint, if an unreasonably dangerous product causes injury, it should not be necessary for the jury to answer "why" the manufacturer designed or produced or failed to warn about the dangerous product. In other words, the motive that resulted in a dangerous product shouldn't matter. And yet we know from watching mock jury deliberations, and from interviewing real jurors after verdicts, that motive is often a key battle in the jury room even when motive isn't a question that the jurors are required to answer. [FN1]

So is motive equally important to all jurors? The segmentation of respondents suggests that the answer is no, but motive may be most important to those jurors most likely to support the plaintiff's position.

In this chapter we look at the response to different types of product failure, specifying the nature of the plaintiff, the nature of the product/failure, information about the defendant, and so forth. Using RDE (rule developing experimentation), we identify how these various elements of a case of product liability 'drives' the verdict, and even the amount of the award.

Silos and elements (Table 11.1)

We begin with the six silos, each silo comprising six elements. For this particular 'experiment' on product liability case using RDE we created a variety of different elements in each silo, to represent a range of alternatives. By this systematic variation we are able to explore a wide range of alternative expressions of different alternatives for the same argument. Thus Silo A, presenting information about the plaintiff/victim, was constructed to explore a range of alternatives plaintiffs, varying from a mother to a semi-retired worker, to a female lawyer, and so forth. The elements in the silos were constructed so that they could fit together in a vignette without any clear, prima facie, mutual contradictory statements.

Table 11.1: The six silos and six elements/silo for the product liability study

	Silo A: Information about the Plaintiff / Victim
A1	A mother responsible for the care of two young children was injured by the product while at home
A2	A family man in his 40's was injured by the product at his office
A3	A 22 year-old Algerian male in the U.S. on a student visa, with a very limited command of English, was injured by the product in his college dorm room
A4	A semi-retired worker, age 76, was injured by the product at home
A5	A lawyer, who had recently become a partner in her law firm and who was out of town on business, was injured by the product in her hotel room
A6	An 18 year-old female, who had recently left high school and was seeking employment, was injured by the product at a friend's apartment where she was staying
	Silo B: Information about the Defendant
B1	The Defendant is a Chinese-owned company which imports its products into the United States
B2	The Defendant is a company which has been owned and operated by the same family for three generations and which employs 84 people in a small town in Wisconsin
B3	The Defendant company is a subsidiary of a French multinational operation, with production plants located in South Korea and Indonesia
B4	The Defendant is one of the largest companies in the U.S., and has recently made headlines with its discussion of moving its operations offshore to escape union demands
B5	The Defendant company, although less than 20 years old, has become nationally known both for its financial success and for its innovative products

B6	The Defendant company has been the recent target of highly publicized governmental probes by both the SEC and the Consumer Product Safety Commission
	Silo C: Evidence of guilt or liability
C1	The product, a floor-to-ceiling wall cabinet, became unbalanced when its top drawer was extended with a full load, causing the entire cabinet to tip forward and crash onto the Plaintiff
C2	The product, a round table with a glass top, unexpectedly shattered into razor-like shards of glass when the Plaintiff stumbled and reached out to the table for support
C3	The product, a microwave oven, exploded as the start button was pushed
C4	The product, a stationary exercise bicycle designed for easy packing and transport, collapsed and impaled the Plaintiff while the Plaintiff was seated and pedaling
C5	The product, an ointment cream advertised as safe for use without a doctor's prescription, caused a massive rash and burn on the Plaintiff's body within ten minutes of application
C6	The Plaintiff became violently ill after eating a beef product from the Defendant, and testing of uneaten portions of the beef revealed the presence of a bad strain of *e. coli* bacteria
	Silo D: Evidence of the Defendant's motive, intent or knowledge
D1	The Defendant denies any prior knowledge of this kind of problem, although the company admits that it doesn't have any testing to guard against this kind of risk
D2	The Defendant says that it has better than a 99% safety record, based on the fact that less than 1% of its product sales have generated any kind of complaint
D3	The Defendant has studied this kind of risk and concluded that paying the occasional claim is less costly than trying to achieve zero risk
D4	The Defendant admits neglecting safety measures in this case, but says that the failure to perform those steps was simply an inadvertent oversight which rarely happens
D5	The Defendant says that there is no such thing as a completely safe product and consumers must be willing to accept some risk
D6	The Defendant admits advertising its products to be safe despite knowing about a series of prior injuries of this type
	Silo E: Evidence of innocence or mitigation
E1	The Defendant says the problem would have been prevented if the Plaintiff had simply read and followed all instructions
E2	The Defendant says that the Plaintiff was misusing the product rather than using it for its advertised purpose
E3	An expert witness testifying on the Defendant's behalf says that what happened in this case is simply an accepted risk of using this kind of product
E4	The Plaintiff admits being distracted while using the product, which the Defendant says may have caused some loss of attention to safety that led to the problem
E5	The Defendant and an expert witness testifying for the Defendant point out that some people are naturally more susceptible to problems like this
E6	The Defendant points out that its production methods comply with governmental regulations

	Silo F: Severity of outcome
F1	Because of complications in the Plaintiff's physical recovery, the Plaintiff's ability to work and provide income has been lost, possibly permanently
F2	Family members of the Plaintiff have other sources of financial support and will not be left destitute as a result of the Plaintiff's death and resulting loss of any income
F3	The Plaintiff's injuries have resulted in limb amputations and permanent incapacity, and family members describe the Plaintiff as feeling lost, alone and isolated
F4	The Plaintiff family members have been receiving counseling as they work to accept the prolonged injury and ultimate death of the Plaintiff
F5	The Plaintiff did not survive, and family members are trying to cope with feelings of rage and helplessness about the product's needless danger to families
F6	The Plaintiff survived and fully recovered after a long hospitalization, but says it would have been easier if the Defendant had ever expressed any remorse or apology

Rating questions (Table 11.2)

The rating question allows the respondent to grade his perception of the seriousness of the case as described by the vignette. Table 11.2 shows the seven points chosen to represent increasing seriousness of the case. We will treat these seven points as representing an equal-interval scale. That is, we will assume that the psychological differences between adjacent scale points are equal, even though we know that they may not be. Nonetheless, treating the scale as an equal interval, Likert, scale, will be productive. In our analysis (see below), we will consider the percent of respondents who rate the vignette 6-7 on the 7-point scale, an analysis that looks at the percentage of respondents rather than the psychological magnitude.

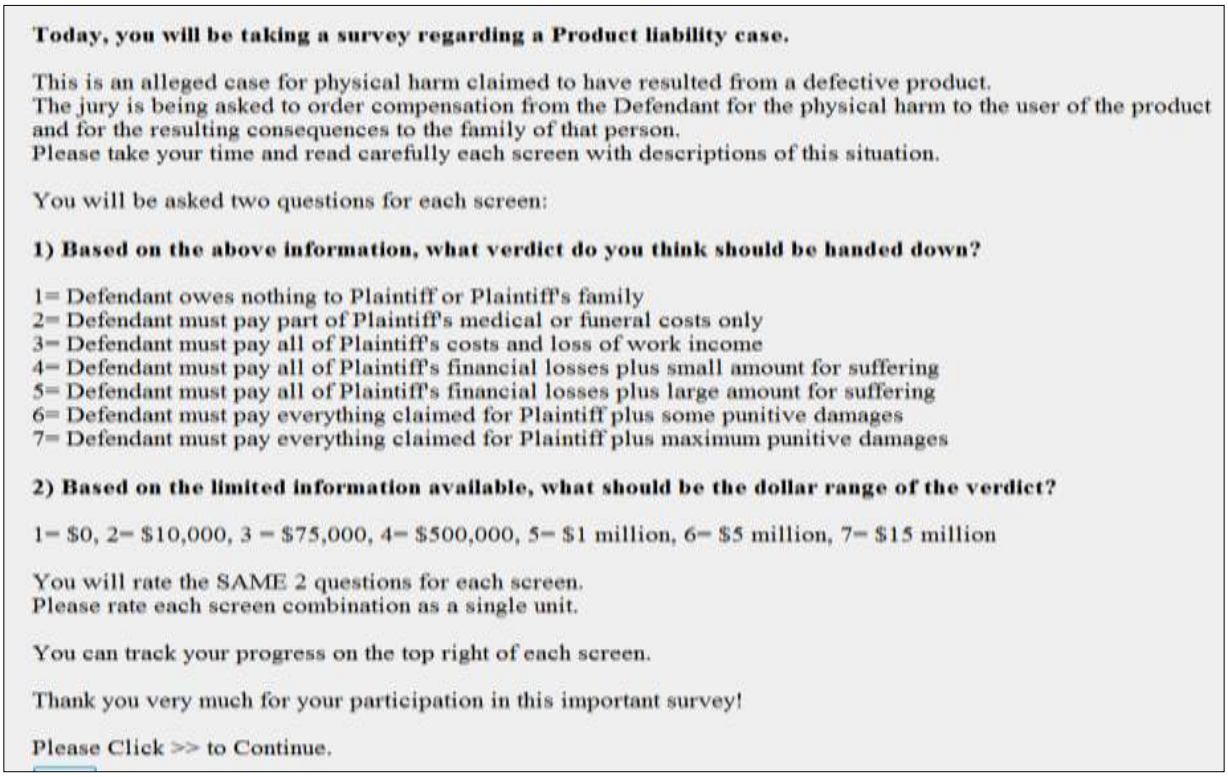
Question #2 shows the amount of the verdict (award to the plaintiff). The amounts increase, but not linearly. Rather, the amount of the award provides us with another measure of the seriousness of the product liability case.

Table 11.2: The two rating questions for the product liability case

1) Based on the above information, what verdict do you think should be handed down?
1= Defendant owes nothing to Plaintiff or Plaintiff's family
2= Defendant must pay part of Plaintiff's medical or funeral costs only
3= Defendant must pay all of Plaintiff's costs and loss of work income
4= Defendant must pay all of Plaintiff's financial losses plus small amount for suffering
5= Defendant must pay all of Plaintiff's financial losses plus large amount for suffering
6= Defendant must pay everything claimed for Plaintiff plus some punitive damages
7= Defendant must pay everything claimed for Plaintiff plus maximum punitive damages
2) Based on the limited information available, what should be the dollar range of the verdict?
1= $0, 2= $10,000, 3 = $75,000, 4= $500,000, 5= $1 million, 6= $5 million, 7= $15 million

Running the RDE experiment (Figure 11.1 – 11.3)

Respondents who agreed to participate were led to the landing or orientation page, shown in Figure 11.1. The orientation page tells the respondent about the case, but does not provide specifics. Most of the orientation page is given over to the rating questions, and to the fact that the respondent will be rating each vignette on two rating attributes



Today, you will be taking a survey regarding a Product liability case.

This is an alleged case for physical harm claimed to have resulted from a defective product.
The jury is being asked to order compensation from the Defendant for the physical harm to the user of the product and for the resulting consequences to the family of that person.
Please take your time and read carefully each screen with descriptions of this situation.

You will be asked two questions for each screen:

1) Based on the above information, what verdict do you think should be handed down?

1= Defendant owes nothing to Plaintiff or Plaintiff's family
2= Defendant must pay part of Plaintiff's medical or funeral costs only
3= Defendant must pay all of Plaintiff's costs and loss of work income
4= Defendant must pay all of Plaintiff's financial losses plus small amount for suffering
5= Defendant must pay all of Plaintiff's financial losses plus large amount for suffering
6= Defendant must pay everything claimed for Plaintiff plus some punitive damages
7= Defendant must pay everything claimed for Plaintiff plus maximum punitive damages

2) Based on the limited information available, what should be the dollar range of the verdict?

1= $0, 2= $10,000, 3 = $75,000, 4= $500,000, 5= $1 million, 6= $5 million, 7= $15 million

You will rate the SAME 2 questions for each screen.
Please rate each screen combination as a single unit.

You can track your progress on the top right of each screen.

Thank you very much for your participation in this important survey!

Please Click >> to Continue.

The test stimuli comprise short, easy-to-read combinations of elements, vignettes, with a vignette containing a minimum of three elements, and a maximum of four elements. Figures 11.1 and 11.2 show an example of the same vignette, first paired with question #1 (right hand side of the vignette), and then paired with question #2.

The vignettes, created by experimental design, comprise at most one element from a silo. Each of the 36 elements appears five times in the 48 vignettes created for a respondent, and absent from the remaining 43 vignettes. The experimental design ensures that the 36 elements are statistically independent of each other. Finally, each respondent evaluated a unique set of vignettes, with the vignettes for a respondent created by a simple permutation or slight modification of the base experimental design. The permutation ensures that the elements appear equally often, and that they remain statistically independent of each other, prerequisites for the analysis of the results from each respondent using OLS (ordinary least-squares regression).

Figure 11.2: A vignette for the product liability study, and the associated rating question for the verdict on the right hand side (question #1)

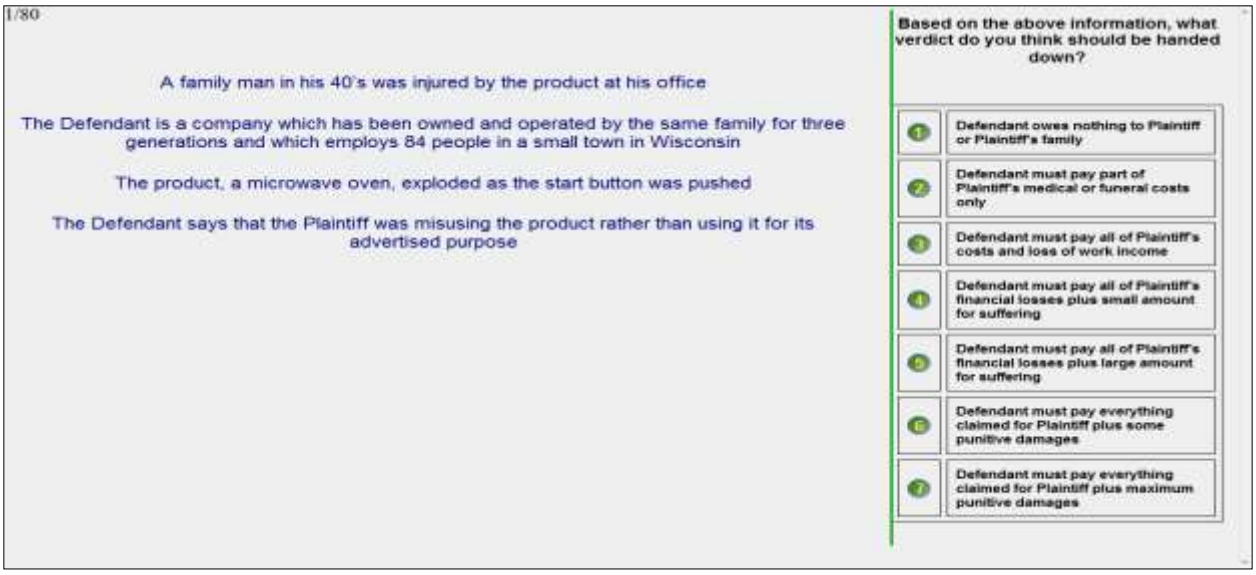
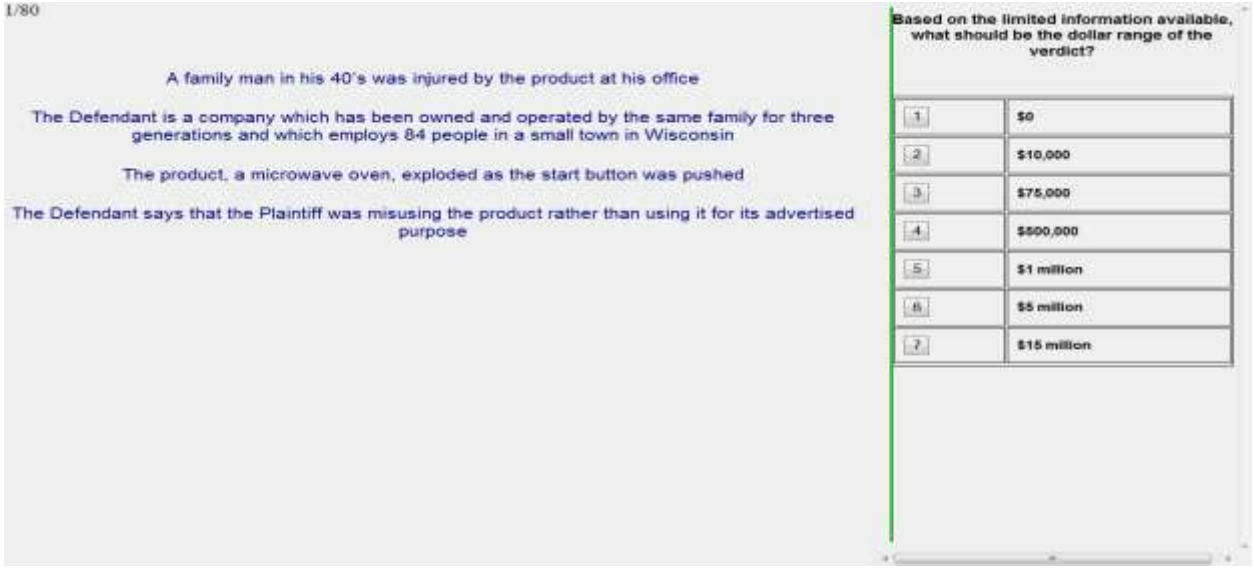


Figure 11.2: The same vignette, this time associated with the second question, asking for the amount of award



Linking elements to ratings by OLS regression (Table 11.3)

The essence of RDE is to link together the independent variables, the elements in this case dealing with facts of the product liability case, with the ratings. As we have seen in the other chapters of this book, we can create at least two different equations to reveal the linkage:

Creating the PER or persuasion model:

1. The PER or so-called persuasion model, with the word 'persuasion' used simply for convenience here. The PER model uses the original 7-point rating scale as the dependent variable, relating the presence/absence of the 36 elements to the 7-point

rating. We add a small random number to every rating, that number around 10^{-5}. The random number ensures that the regression runs at an individual respondent level

1. The output is a simple equation, we write as: Per = k_0 + k_1(A1)+ k_2(A2)..k_{36}(F6).
2. We estimate the PER equation on a respondent-by-respondent basis, which we can do easily because the experimental design is built up on a respondent basis. Statisticians call this a 'within-subjects' design. All the information for an analysis is present in the data on each respondent (subject = respondent)
3. The foregoing PER equation is very straightforward, representing the 9-point rating as the combination of an additive constant (k_0), and a weight to be attached to each element (k_1 – k_{36}).
4. In the PER equation, the additive constant tells us the number of rating points to be expected in the absence of elements. Obviously all vignette comprised 3-4 elements, by experimental design, so the additive constant for the PER equation is an estimated value, a baseline if we so choose to think of it that way. We will not have much use for the additive constant in the PER equation, but it is part of the set of numbers that we must compute for the subsequent segmentation analysis to be discussed later on.
5. In the PER equation the 36 coefficients or impact values will be used to create clusters or mind-set segments for the respondents, with these segments created on the basis of the similarity of the patterns of PER values. Respondents with similar PER patterns (36 impact values) will fall into the same mind-set segments.

<u>Creating the INT or interest model (Table 11.3)</u>

1. The objective of this model is to relate the presence/absence of the 36 elements to the likelihood of a respondent to select the 'strongest' verdicts, verdicts 6 and 7. These two strongest verdicts require the defendant to pay everything plus punitive damages

   6= Defendant must pay everything claimed for Plaintiff plus some punitive damages
   7= Defendant must pay everything claimed for Plaintiff plus maximum punitive damages

2. Before the modeling is done by OLS (ordinary least-squares regression), we transform the rating on the 1-7 scale for question #1 (select the verdict), so that the original scale becomes a binary scale. Ratings of 1-5 are transformed to 0, ratings 6-7 are transformed to 100.

3. We add a small random number to every rating, that number being around 10^{-5}, as we did for the PER modeling using OLS regression. The random number ensures that the regression runs at an individual respondent level

4. We see the results from the INT model in Table 11.3. The table shows the 36 elements sorted from high to low, with the additive constant on top

5. The additive constant is 16, meaning that in the absence of elements, approximately 16% of the respondents would rate the vignette 6-7, i.e., select the strongest verdict from the seven presented.

6. There is a clear hierarchy of elements which drive the selection of the strongest verdicts, but there is no clear pattern. The strongest performing elements may range from a microwave element which exploded to a dead plaintiff.

7. Elements driving the verdict away from the strongest two elements, i.e., those with negative impact values, are those which show the plaintiff not following instructions.

Table 11.3: Performance of the elements for the product liability case, based upon the results from the total panel.

	Product liability case – INT model for the total panel	
	Base Size	307
	Constant	16
C3	The product, a microwave oven, exploded as the start button was pushed	**17**
F5	The Plaintiff did not survive, and family members are trying to cope with feelings of rage and helplessness about the product's needless danger to families	**17**
F3	The Plaintiff's injuries have resulted in limb amputations and permanent incapacity, and family members describe the Plaintiff as feeling lost, alone and isolated	**14**
F4	The Plaintiff family members have been receiving counseling as they work to accept the prolonged injury and ultimate death of the Plaintiff	**12**
C6	The Plaintiff became violently ill after eating a beef product from the Defendant, and testing of uneaten portions of the beef revealed the presence of a bad strain of e. coli bacteria	**11**
C4	The product, a stationary exercise bicycle designed for easy packing and transport, collapsed and impaled the Plaintiff while the Plaintiff was seated and pedaling	**10**
F1	Because of complications in the Plaintiff's physical recovery, the Plaintiff's ability to work and provide income has been lost, possibly permanently	9
D6	The Defendant admits advertising its products to be safe despite knowing about a series of prior injuries of this type	9
D4	The Defendant admits neglecting safety measures in this case, but says that the failure to perform those steps was simply an inadvertent oversight which rarely happens	7
F2	Family members of the Plaintiff have other sources of financial support and will not be left destitute as a result of the Plaintiff's death and resulting loss of any income	6
D3	The Defendant has studied this kind of risk and concluded that paying the occasional claim is less costly than trying to achieve zero risk	6

C5	The product, an ointment cream advertised as safe for use without a doctor's prescription, caused a massive rash and burn on the Plaintiff's body within ten minutes of application	5
B6	The Defendant company has been the recent target of highly publicized governmental probes by both the SEC and the Consumer Product Safety Commission	5
B4	The Defendant is one of the largest companies in the U.S., and has recently made headlines with its discussion of moving its operations offshore to escape union demands	4
D5	The Defendant says that there is no such thing as a completely safe product and consumers must be willing to accept some risk	3
C2	The product, a round table with a glass top, unexpectedly shattered into razor-like shards of glass when the Plaintiff stumbled and reached out to the table for support	2
B5	The Defendant company, although less than 20 years old, has become nationally known both for its financial success and for its innovative products	2
B1	The Defendant is a Chinese-owned company which imports its products into the United States	0
B3	The Defendant company is a subsidiary of a French multinational operation, with production plants located in South Korea and Indonesia	0
A1	A mother responsible for the care of two young children was injured by the product while at home	-1
C1	The product, a floor-to-ceiling wall cabinet, became unbalanced when its top drawer was extended with a full load, causing the entire cabinet to tip forward and crash onto the Plaintiff	-1
A4	A semi-retired worker, age 76, was injured by the product at home	-1
A6	An 18 year-old female, who had recently left high school and was seeking employment, was injured by the product at a friend's apartment where she was staying	-1
A2	A family man in his 40's was injured by the product at his office	-1
D1	The Defendant denies any prior knowledge of this kind of problem, although the company admits that it doesn't have any testing to guard against this kind of risk	-1
A3	A 22 year-old Algerian male in the U.S. on a student visa, with a very limited command of English, was injured by the product in his college dorm room	-2
A5	A lawyer, who had recently become a partner in her law firm and who was out of town on business, was injured by the product in her hotel room	-2
E3	An expert witness testifying on the Defendant's behalf says that what happened in this case is simply an accepted risk of using this kind of product	-2
E5	The Defendant and an expert witness testifying for the Defendant point out that some people are naturally more susceptible to problems like this	-2
B2	The Defendant is a company which has been owned and operated by the same family for three generations and which employs 84 people in a small town in Wisconsin	-3
F6	The Plaintiff survived and fully recovered after a long hospitalization, but says	-3

	it would have been easier if the Defendant had ever expressed any remorse or apology	
D2	The Defendant says that it has better than a 99% safety record, based on the fact that less than 1% of its product sales have generated any kind of complaint	-3
E6	The Defendant points out that its production methods comply with governmental regulations	-6
E2	The Defendant says that the Plaintiff was misusing the product rather than using it for its advertised purpose	-8
E4	The Plaintiff admits being distracted while using the product, which the Defendant says may have caused some loss of attention to safety that led to the problem	-8
E1	The Defendant says the problem would have been prevented if the Plaintiff had simply read and followed all instructions	-9

Do genders differ in their response to the product liability elements (Table 11.4)

The answer to this question is a qualified 'no.' As we see in Table 11.4, males and females:

1. Show similar additive constants (17 for males, 15 for females), meaning that they are both equally unlikely to select the strongest verdicts without compelling arguments
2. Both show strong receptivity to some of the elements, although for the most compelling elements (C3,F5,F3,F4) the female respondents are more swayed towards selecting the stronger verdict than are the males. The difference is large, but not radical. That is, we don't see 10 or 20 point differences between the impact values for males versus for females.
3. Both genders show similar reactions to the strong performing elements with negative impacts, i.e., those elements which exculpate the defendant by saying that the plaintiff due not exercise due caution

Table 11.4: Performance of the elements for the product liability case, based upon the results from males versus females

		Total	Male	Female
	Base size	307	144	163
	Additive constant	16	17	15
C3	The product, a microwave oven, exploded as the start button was pushed	**17**	**15**	**20**
F5	The Plaintiff did not survive, and family members are trying to cope with feelings of rage and helplessness about the product's needless danger to families	**17**	**14**	**20**
F3	The Plaintiff's injuries have resulted in limb amputations and permanent incapacity, and family members describe the Plaintiff	**14**	**10**	**18**

	as feeling lost, alone and isolated			
F4	The Plaintiff family members have been receiving counseling as they work to accept the prolonged injury and ultimate death of the Plaintiff	**12**	9	**15**
C6	The Plaintiff became violently ill after eating a beef product from the Defendant, and testing of uneaten portions of the beef revealed the presence of a bad strain of e. coli bacteria	**11**	**13**	9
C4	The product, a stationary exercise bicycle designed for easy packing and transport, collapsed and impaled the Plaintiff while the Plaintiff was seated and pedaling	**10**	8	**12**
F1	Because of complications in the Plaintiff's physical recovery, the Plaintiff's ability to work and provide income has been lost, possibly permanently	9	6	**11**
D6	The Defendant admits advertising its products to be safe despite knowing about a series of prior injuries of this type	9	8	**10**
E2	The Defendant says that the Plaintiff was misusing the product rather than using it for its advertised purpose	-8	***-10***	-7
E1	The Defendant says the problem would have been prevented if the Plaintiff had simply read and followed all instructions	-9	***-10***	-9

Age also plays a role in responses to arguments re product liability (Table 11.5)

When we divide our 307 respondents by age, we see that there are some age effects. It is not the specific elements that we remark on, but the pattern which emerges:

1. The additive constant remains low, with the older respondents (ages 39+) showing the very lowest constant (12). For this older group, it is really the argument itself which drives the selection of the verdict.
2. The younger respondents don't have a sense of linkage of verdict to emotions. The elements talking about feelings, especially F3, do not drive as strong a response among the younger respondents as among the older respondents.
3. The older respondents are also more likely to respond to a number of elements deemed irrelevant by younger respondents (e.g., F2, D3, D5)
4. The bottom line is a noteworthy lowered sensitivity by the younger respondents to elements, or perhaps a heightened sensitivity by older respondents to these elements. Age does make a difference in the selection of the verdict.

Table 11.5: Performance of key elements for the product liability case, based upon the results across three age groups

		Total	**Age 18-29**	**Age 30-38**	**Age 39+**
	Base Size	307	110	88	109
	Constant	16	19	16	12
C3	The product, a microwave oven, exploded as the start	**17**	**14**	**14**	**24**

	button was pushed				
F5	The Plaintiff did not survive, and family members are trying to cope with feelings of rage and helplessness about the product's needless danger to families	**17**	**12**	**19**	**20**
F3	The Plaintiff's injuries have resulted in limb amputations and permanent incapacity, and family members describe the Plaintiff as feeling lost, alone and isolated	**14**	4	**16**	**24**
F4	The Plaintiff family members have been receiving counseling as they work to accept the prolonged injury and ultimate death of the Plaintiff	**12**	8	**10**	**17**
C6	The Plaintiff became violently ill after eating a beef product from the Defendant, and testing of uneaten portions of the beef revealed the presence of a bad strain of e. coli bacteria	**11**	9	**12**	**11**
C4	The product, a stationary exercise bicycle designed for easy packing and transport, collapsed and impaled the Plaintiff while the Plaintiff was seated and pedaling	**10**	4	**10**	**16**
C4	The product, a stationary exercise bicycle designed for easy packing and transport, collapsed and impaled the Plaintiff while the Plaintiff was seated and pedaling	**10**	4	**10**	**16**
F1	Because of complications in the Plaintiff's physical recovery, the Plaintiff's ability to work and provide income has been lost, possibly permanently	9	4	9	**14**
D6	The Defendant admits advertising its products to be safe despite knowing about a series of prior injuries of this type	9	3	**10**	**13**
D4	The Defendant admits neglecting safety measures in this case, but says that the failure to perform those steps was simply an inadvertent oversight which rarely happens	7	-4	**11**	**14**
F2	Family members of the Plaintiff have other sources of financial support and will not be left destitute as a result of the Plaintiff's death and resulting loss of any income	6	-2	9	**12**
D3	The Defendant has studied this kind of risk and concluded that paying the occasional claim is less costly than trying to achieve zero risk	6	1	8	**10**
D5	The Defendant says that there is no such thing as a completely safe product and consumers must be willing to accept some risk	3	-3	**12**	1
E2	The Defendant says that the Plaintiff was misusing the product rather than using it for its advertised purpose	-8	-5	***-12***	-9
E1	The Defendant says the problem would have been prevented if the Plaintiff had simply read and followed all instructions	-9	-8	***-12***	-9

Ethnicity makes a slight difference in responses to product liability elements (Table 11.6)

When we move from gender to age, and onto ethnicity, we notice, for the most part anyway, that the elements which drive the response for the total panel also drive the responses for the ethnic groups. Only in four cases

1. Blacks:A6 - An 18 year-old female, who had recently left high school and was seeking employment, was injured by the product at a friend's apartment where she was staying (total panel = -1, Blacks = 11)
2. Blacks: B2 - The Defendant is a company which has been owned and operated by the same family for three generations and which employs 84 people in a small town in Wisconsin (total panel = -3, Blacks = -16)
3. Hispanic: A1 - A mother responsible for the care of two young children was injured by the product while at home (total panel = -1, Hispanics = -10)
4. Hispanic – **A3 -** A 22 year-old Algerian male in the U.S. on a student visa, with a very limited command of English, was injured by the product in his college dorm room (total panel = -2, Hispanics = -11)

Table 11.6: Performance of key elements for the product liability case, based upon the results across three ethnicities

		Total	**Ethnic**
	(White, n=156, additive constant = 11)		
C3	The product, a microwave oven, exploded as the start button was pushed	**17**	**23**
F5	The Plaintiff did not survive, and family members are trying to cope with feelings of rage and helplessness about the product's needless danger to families	**17**	**21**
F3	The Plaintiff's injuries have resulted in limb amputations and permanent incapacity, and family members describe the Plaintiff as feeling lost, alone and isolated	**14**	**21**
F4	The Plaintiff family members have been receiving counseling as they work to accept the prolonged injury and ultimate death of the Plaintiff	**12**	**17**
E2	The Defendant says that the Plaintiff was misusing the product rather than using it for its advertised purpose	-8	***-10***
	Asian (n= 49, additive constnt = 12)		
F5	The Plaintiff did not survive, and family members are trying to cope with feelings of rage and helplessness about the product's needless danger to families	**17**	**19**
C3	The product, a microwave oven, exploded as the start button was pushed	**17**	**10**
E2	The Defendant says that the Plaintiff was misusing the product	-8	***-10***

	rather than using it for its advertised purpose		
	Black (n=47, additive constant = 19)		
F3	The Plaintiff's injuries have resulted in limb amputations and permanent incapacity, and family members describe the Plaintiff as feeling lost, alone and isolated	**14**	**16**
C6	The Plaintiff became violently ill after eating a beef product from the Defendant, and testing of uneaten portions of the beef revealed the presence of a bad strain of e. coli bacteria	**11**	**15**
D6	The Defendant admits advertising its products to be safe despite knowing about a series of prior injuries of this type	9	**15**
C3	The product, a microwave oven, exploded as the start button was pushed	**17**	**14**
C5	The product, an ointment cream advertised as safe for use without a doctor's prescription, caused a massive rash and burn on the Plaintiff's body within ten minutes of application	5	**13**
A6	An 18 year-old female, who had recently left high school and was seeking employment, was injured by the product at a friend's apartment where she was staying	-1	**11**
B2	The Defendant is a company which has been owned and operated by the same family for three generations and which employs 84 people in a small town in Wisconsin	-3	***-16***
	(Hispanic American, n = 48, additive constant = 28)		
C6	The Plaintiff became violently ill after eating a beef product from the Defendant, and testing of uneaten portions of the beef revealed the presence of a bad strain of e. coli bacteria	**11**	**15**
F5	The Plaintiff did not survive, and family members are trying to cope with feelings of rage and helplessness about the product's needless danger to families	**17**	**10**
C3	The product, a microwave oven, exploded as the start button was pushed	**17**	10
A1	A mother responsible for the care of two young children was injured by the product while at home	-1	***-10***
A3	A 22 year-old Algerian male in the U.S. on a student visa, with a very limited command of English, was injured by the product in his college dorm room	-2	***-11***
E4	The Plaintiff admits being distracted while using the product, which the Defendant says may have caused some loss of attention to safety that led to the problem	-8	***-12***

Income makes a difference (Table 11.7)

When it comes to income we expect to see some differences in the arguments that respondents of different incomes find compelling. We just don't know the arguments, nor the predisposition to select a strong penalty, i.e., side with the plaintiff. We do know that often, people with lower incomes may pay more attention to what they are buying because

'they don't have enough money to pay for other than good quality.' That is, people with lower incomes may side with the plaintiff. We don't necessarily know whether this is true or not. We see these patterns:

1. Looking at the additive constants, we see that respondents with the higher incomes ($100k or more per year) show a higher additive constant, i.e., a greater proclivity to find for the 'plaintiff' (Table 11.7)
2. When it comes to the specific elements, we also expect that there should be differences, but we don't know in what direction, and what types of elements would drive those differences.
3. Table 11.7 tells us that we have a mix of elements, that for some elements the lowest income respondents (income less than $30k) show the very largest impact values (e..g., *The Defendant admits advertising its products to be safe despite knowing about a series of prior injuries of this type,* and *The Plaintiff became violently ill after eating a beef product from the Defendant, and testing of uneaten portions of the beef revealed the presence of a bad strain of e. coli bacteria.*
4. The pattern is not consistent. The highest income respondents (income grater than $100k) feel that some elements truly drive the strongest verdict (e.g., The Plaintiff did not survive, and family members are trying to cope with feelings of rage and helplessness about the product's needless danger to families)
5. It could be that the lowest income respondents focus more on the objective aspects of what happened and who is at fault, whereas the highest income respondents focus on the feelings and emotional damage.

Table 11.7: Performance of key elements for the product liability case, based upon the results across three income groups

		Total	**Income < 30k**	**Income 30-100k**	**Income 100k+**
	Base size	307	104	171	32
	Additive constant	16	11	17	23
	Income < 30k				
F5	The Plaintiff did not survive, and family members are trying to cope with feelings of rage and helplessness about the product's needless danger to families	**17**	**19**	**14**	**26**
C3	The product, a microwave oven, exploded as the start button was pushed	**17**	**17**	**19**	9
D6	The Defendant admits advertising its products to be safe despite knowing about a series of prior injuries of this type	9	**16**	8	-9

C6	The Plaintiff became violently ill after eating a beef product from the Defendant, and testing of uneaten portions of the beef revealed the presence of a bad strain of e. coli bacteria	**11**	**15**	9	5
F3	The Plaintiff's injuries have resulted in limb amputations and permanent incapacity, and family members describe the Plaintiff as feeling lost, alone and isolated	**14**	**15**	**14**	**15**
C4	The product, a stationary exercise bicycle designed for easy packing and transport, collapsed and impaled the Plaintiff while the Plaintiff was seated and pedaling	**10**	**14**	9	6
D4	The Defendant admits neglecting safety measures in this case, but says that the failure to perform those steps was simply an inadvertent oversight which rarely happens	7	**10**	6	-1
	Income 30k - 99k				
C3	The product, a microwave oven, exploded as the start button was pushed	**17**	**17**	**19**	9
F3	The Plaintiff's injuries have resulted in limb amputations and permanent incapacity, and family members describe the Plaintiff as feeling lost, alone and isolated	**14**	**15**	**14**	**15**
F5	The Plaintiff did not survive, and family members are trying to cope with feelings of rage and helplessness about the product's needless danger to families	**17**	**19**	**14**	**26**
	Income 100k+				
F5	The Plaintiff did not survive, and family members are trying to cope with feelings of rage and helplessness about the product's needless danger to families	**17**	**19**	**14**	**26**
F3	The Plaintiff's injuries have resulted in limb amputations and permanent incapacity, and family members describe the Plaintiff as feeling lost, alone and isolated	**14**	**15**	**14**	**15**
F4	The Plaintiff family members have been receiving counseling as they work to accept the prolonged injury and ultimate death of the Plaintiff	**12**	**10**	**13**	**14**
E5	The Defendant and an expert witness testifying for the Defendant point out that some people are naturally more susceptible to problems like this	-2	1	-2	***-10***
E6	The Defendant points out that its production methods comply with governmental regulations	-6	-4	-6	***-11***
A1	A mother responsible for the care of two young children was injured by the product while at home	-1	2	-1	***-12***
E2	The Defendant says that the Plaintiff was misusing the product rather than using it for its advertised purpose	-8	-6	-9	***-16***

Mind-set segments for product liability (Table 11.8)

As we have seen again and again in these chapters, it is at the level of the mind-set where the largest differences emerge. Product liability statements are no different, and in fact show the largest differences. Some of the differences may result from one's values;

there is no clear 'right/wrong' as there may be in criminal cases. Rather, we are dealing here with values; what aspects of the product experience a respondent holds most dear.

We segmented our 307 respondents following the approach discussed at the start of this chapter, using the coefficients or impacts from the PER model. We strove for parsimony (as few segments as possible), while at the same time for interpretability (the segments made intuitive sense, and told a story). The combination of criteria together with the k-means clustering program (Systat, 2007) generated three segments, two larger, one smaller, as shown in Table 11.8

1. Segment 1 – comprising 139 respondents, a plurality of the respondents. The additive constant is 17, around the same low value as the total panel. Segment 1 focuses on the personal loss, and on problems associated with the product malfunction. Segment 1 responds extremely strongly to the statements about personal 'injury' due to the malfunction (Silo F).
2. Segment 2, almost as large, with 121 respondents and a slightly higher additive constant (20), focuses on the negligence of the manufacturer. This segment responds a bit less strongly to the elements which drive the strongest two verdicts. One element really stands out dramatically: *The Defendant admits advertising its products to be safe despite knowing about a series of prior injuries of this type*. This element invokes a sense of almost malicious indifference to the consumer.
3. Segment 3, with far fewer respondents (47), and a very low additive constant (-1), focuses almost entirely on the technical description of what happened, the moment and nature of the malfunction. Segment 3 responds very strongly to word pictures painted about the precise nature of the malfunction, seeming to be angered by a physical world gone awry as the product failed to perform, or caused something bad to happen.
4. In net, the mind-set segmentation of the respondents reveals three radically different, clearly definable groups of respondents, with almost polarized views. What drives one segment to select the strong verdicts is generally not particularly important to the other segment. With our elements of product liability we truly see different ways of perceiving the world.

Table 11.8: Performance of key elements for the product liability case, based upon the results across three mind-set segments

		Tot	**Seg1**	**Seg2**	**Seg3**
	Base Size	307	139	121	47
	Constant	16	17	20	-1
	Segment 1 – Harm Focused				
F5	The Plaintiff did not survive, and family members are trying to cope with feelings of rage and helplessness about the product's needless danger to families	**17**	**28**	7	**10**
F3	The Plaintiff's injuries have resulted in limb amputations and permanent incapacity, and family members describe the Plaintiff as feeling lost, alone and isolated	**14**	**26**	3	**10**

F4	The Plaintiff family members have been receiving counseling as they work to accept the prolonged injury and ultimate death of the Plaintiff	**12**	**24**	1	5
F1	Because of complications in the Plaintiff's physical recovery, the Plaintiff's ability to work and provide income has been lost, possibly permanently	9	**19**	-2	7
C3	The product, a microwave oven, exploded as the start button was pushed	**17**	**17**	**16**	**22**
F2	Family members of the Plaintiff have other sources of financial support and will not be left destitute as a result of the Plaintiff's death and resulting loss of any income	6	**17**	-5	5
E1	*The Defendant says the problem would have been prevented if the Plaintiff had simply read and followed all instructions*	*-9*	***-11***	***-11***	*-3*
	Segment 2 – Fault Focused				
D6	The Defendant admits advertising its products to be safe despite knowing about a series of prior injuries of this type	9	1	**22**	-1
C3	The product, a microwave oven, exploded as the start button was pushed	**17**	**17**	**16**	**22**
C6	The Plaintiff became violently ill after eating a beef product from the Defendant, and testing of uneaten portions of the beef revealed the presence of a bad strain of e. coli bacteria	**11**	5	**14**	**21**
D3	The Defendant has studied this kind of risk and concluded that paying the occasional claim is less costly than trying to achieve zero risk	6	4	**13**	-4
D4	The Defendant admits neglecting safety measures in this case, but says that the failure to perform those steps was simply an inadvertent oversight which rarely happens	7	2	**13**	2
E2	*The Defendant says that the Plaintiff was misusing the product rather than using it for its advertised purpose*	*-8*	*-9*	***-10***	*-3*
E4	*The Plaintiff admits being distracted while using the product, which the Defendant says may have caused some loss of attention to safety that led to the problem*	*-8*	*-5*	***-10***	***-11***
E1	*The Defendant says the problem would have been prevented if the Plaintiff had simply read and followed all instructions*	*-9*	***-11***	***-11***	*-3*
	Segment 3 – Focus on the moment of malfunction and the precise nature of the malfunction				
C4	The product, a stationary exercise bicycle designed for easy packing and transport, collapsed and impaled the Plaintiff while the Plaintiff was seated and pedaling	**10**	8	6	**28**
C3	The product, a microwave oven, exploded as the start button was pushed	**17**	**17**	**16**	**22**
C6	The Plaintiff became violently ill after eating a beef product from the Defendant, and testing of uneaten portions of the beef revealed the presence of a bad strain of e. coli bacteria	**11**	5	**14**	**21**
C2	The product, a round table with a glass top, unexpectedly	2	-6	5	**20**

	shattered into razor-like shards of glass when the Plaintiff stumbled and reached out to the table for support				
C5	The product, an ointment cream advertised as safe for use without a doctor's prescription, caused a massive rash and burn on the Plaintiff's body within ten minutes of application	5	-1	8	**18**
A1	A mother responsible for the care of two young children was injured by the product while at home	-1	-8	1	**16**
A3	A 22 year-old Algerian male in the U.S. on a student visa, with a very limited command of English, was injured by the product in his college dorm room	-2	-10	0	**14**
C1	The product, a floor-to-ceiling wall cabinet, became unbalanced when its top drawer was extended with a full load, causing the entire cabinet to tip forward and crash onto the Plaintiff	-1	-4	-1	**11**
A4	A semi-retired worker, age 76, was injured by the product at home	-1	-3	-3	**10**
F5	The Plaintiff did not survive, and family members are trying to cope with feelings of rage and helplessness about the product's needless danger to families	**17**	**28**	7	**10**
F3	The Plaintiff's injuries have resulted in limb amputations and permanent incapacity, and family members describe the Plaintiff as feeling lost, alone and isolated	**14**	**26**	3	**10**
D1	*The Defendant denies any prior knowledge of this kind of problem, although the company admits that it doesn't have any testing to guard against this kind of risk*	*-1*	*0*	*3*	***-11***
E4	*The Plaintiff admits being distracted while using the product, which the Defendant says may have caused some loss of attention to safety that led to the problem*	*-8*	*-5*	***-10***	***-11***

Examining the Segmentation of Respondents

Given our past observations and interviews of jurors, as well as our prior analysis of RDE results in medical malpractice and insurance fraud studies, we were curious regarding segmentation of respondents in this product liability study. Would the segments be similar? In fact, does the segmentation tap a common set of patterns, applying to many different aspects of one's civil life?

The segmentation here looks somewhat similar to that seen in our medical malpractice study.

The first segment of respondents might best be described as harm-focused jurors (Table 11.9)

This group is the largest of the three segments in this study. Of the top six elements for which this group registers the strongest reaction in favor of the plaintiff consumer, five are directly descriptive of the harm experienced by the consumer (Table 11.9).

It might be tempting to label this group as sympathetic, except for a surprising observation. Each element which describes the actual individual consumer (e.g. "a mother responsible for the care of two young children") produces a shift among this group *in favor of the defendant company*, not in favor of the injured individual. (Table 11.10) Although all respondents as a whole demonstrate this same pro-defendant shift when confronted with details about the plaintiff consumer, the anti-plaintiff shift is even more pronounced in this first segment. It is as if this group reacts to the harm but reacts in the opposite direction when introduced to the harmed individual. Possibly this segment reacts to the harm as long as it feels threatening to the respondent, but not when it happens to someone else. If so, this reaction is at least consistent with the highly-publicized teaching of David Ball and Don Keenan in *Reptile*, suggesting that plaintiff attorneys should seek to appeal to "jurors' most primitive instincts of safety and self-preservation." [FN2]

Table 11.9: Strongest performing elements for Segment 1, Harm-Focused

	Base Size	307	139
	Additive constant	16	17
		Total	**Seg1**
F5	The Plaintiff did not survive, and family members are trying to cope with feelings of rage and helplessness about the product's needless danger to families	17	28
F3	The Plaintiff's injuries have resulted in limb amputations and permanent incapacity, and family members describe the Plaintiff as feeling lost, alone and isolated	14	26
F4	The Plaintiff family members have been receiving counseling as they work to accept the prolonged injury and ultimate death of the Plaintiff	12	24
F1	Because of complications in the Plaintiff's physical recovery, the Plaintiff's ability to work and provide income has been lost, possibly permanently	9	19
C3	The product, a microwave oven, exploded as the start button was pushed	17	17
F2	Family members of the Plaintiff have other sources of financial support and will not be left destitute as a result of the Plaintiff's death and resulting loss of any income	6	17

Table 11.10: How Segment 1 (Harm-focused) responds to the description of the plaintiff

	Base Size	307	139
	Constant	16	17
		Total	**Seg1**

A1	A mother responsible for the care of two young children was injured by the product while at home	-1	-8
A2	A family man in his 40's was injured by the product at his office	-1	-1
A3	A 22 year-old Algerian male in the U.S. on a student visa, with a very limited command of English, was injured by the product in his college dorm room	-2	-10
A4	A semi-retired worker, age 76, was injured by the product at home	-1	-3
A5	A lawyer, who had recently become a partner in her law firm and who was out of town on business, was injured by the product in her hotel room	-2	-4
A6	An 18 year-old female, who had recently left high school and was seeking employment, was injured by the product at a friend's apartment where she was staying	-1	-1

The second segment of respondents might best be described as fault-focused jurors.
This group, comprising almost 40% of respondents, starts with the highest constant (20), reflecting the strongest predisposition in favor of plaintiffs. Three of the five elements registering the strongest pro-plaintiff reaction in this segment are directly suggestive of a lack of care by the defendant (Table 11.10) And the three strongest pro-defendant elements all suggest direct fault by the consumer(Table 11.11) It's noteworthy that this segment seems to correlate with Segment 3 identified in the medical malpractice study (36% of respondents in that study). That Segment 3 in the medical malpractice study also started with the highest constant of the three segments, and also focused most strongly on evidence of generally substandard or uncaring conduct by the defendant).

Table 11.10: Strongest performing elements for Segment 2, Fault-Focused

	Base Size	307	139	121
	Constant	16	17	20
		Total	**Seg 1**	**Seg 2**
D6	The Defendant admits advertising its products to be safe despite knowing about a series of prior injuries of this type	9	1	22
C4	The product, a microwave oven, exploded as the start button was pushed	17	17	16
C6	The Plaintiff became violently ill after eating a beef product from the Defendant, and testing of uneaten portions of the beef revealed the presence of a bad strain of e. coli bacteria	11	5	14
D3	The Defendant has studied this kind of risk and concluded that paying the occasional claim is less costly than trying to achieve zero risk	6	4	13
D4	The Defendant admits neglecting safety measures in this case, but says that the failure to perform those steps was simply an inadvertent oversight which rarely happens	7	2	13

Table 11.11: The three strongest pro-defendant elements for Segment 2, Fault-Focused

	Base Size	307	139	121
	Constant	16	17	20
		Total	**Seg1**	**Seg2**
E1	The Defendant says the problem would have been prevented if the Plaintiff had simply read and followed all instructions	-9	-11	-11
E4	The Plaintiff admits being distracted while using the product, which the Defendant says may have caused some loss of attention to safety that led to the problem	-8	-5	-10
E2	The Defendant says that the Plaintiff was misusing the product rather than using it for its advertised purpose	-8	-9	-10

The third segment of respondents in this product liability study might best be described as defect-focused jurors (Table 11.12)

This group is the smallest of the three segments (15% of the total) and the group least predisposed to the plaintiff's position (additive constant of -1). The strongest reactions of this segment in favor of the plaintiff occur when exposed to descriptions of the specific defect (i.e. the description of an "unreasonably dangerous" product; Table 11.12.)

Table 11.12: The three strongest pro-defendant elements for Segment 3, Defect-Focused

	Base Size	307	139	121	47
	Constant	16	17	20	-1
		Total	**Seg1**	**Seg2**	**Seg3**
C4	The product, a stationary exercise bicycle designed for easy packing and transport, collapsed and impaled the Plaintiff while the Plaintiff was seated and pedaling	10	8	6	28
C3	The product, a microwave oven, exploded as the start button was pushed	17	17	16	22
C6	The Plaintiff became violently ill after eating a beef product from the Defendant, and testing of uneaten portions of the beef revealed the presence of a bad strain of e. coli bacteria	11	5	14	21
C2	The product, a round table with a glass top, unexpectedly shattered into razor-like shards of glass when the Plaintiff stumbled and reached out to the table for support	2	-6	5	20
C5	The product, an ointment cream advertised as safe for use without a doctor's prescription, caused a massive rash and burn on the Plaintiff's body within ten minutes of application	5	-1	8	18
A1	A mother responsible for the care of two young children was injured by the product while at home	-1	-8	1	16
A3	A 22 year-old Algerian male in the U.S. on a student visa, with a very limited command of English, was injured by	-2	-10	0	14

	the product in his college dorm room				
C1	The product, a floor-to-ceiling wall cabinet, became unbalanced when its top drawer was extended with a full load, causing the entire cabinet to tip forward and crash onto the Plaintiff	-1	-4	-1	11
A4	A semi-retired worker, age 76, was injured by the product at home	-1	-3	-3	10
F5	The Plaintiff did not survive, and family members are trying to cope with feelings of rage and helplessness about the product's needless danger to families	17	28	7	10
F3	The Plaintiff's injuries have resulted in limb amputations and permanent incapacity, and family members describe the Plaintiff as feeling lost, alone and isolated	14	26	3	10

Given that the segment most predisposed for the plaintiff tends to focus on the question of who is at fault and tends to react most strongly to evidence of uncaring conduct, this study appears to support the observation that "why" a product is dangerous matters to a key segment of potential plaintiff jurors even when it does not matter legally.

Examining the Most Predictive Classification Questions

In the medical malpractice study, Question 15 (below) emerged as the most predictive question for mind-set segmentation, not just on the issue of damages (the subject to which it appears to be limited), but on the question of liability as well. The same predictive power of this question shows up again in this product liability study. As a group, those respondents checking the first option are the most problematic for plaintiffs, with the tendency to favor the plaintiff increasing with each successive option.

15. Which one of the following BEST describes how you feel about someone seeking money for future pain and suffering in a lawsuit?

1. I don't believe in paying someone for pain and suffering, whether past or future
2. Future pain and suffering is probably too speculative for a jury to determine
3. Payment for future pain and suffering makes sense only with clear medical proof
4. Future pain and suffering can be very real and deserves full compensation if wrongly caused

A second question, Question 22 (below), is more direct in its inquiry, asking about the most likely cause of a product injury. The group choosing the first option reflects both the highest constant and the second-highest total shift of coefficients beyond the constant in favor of the plaintiff. This clearly is a valuable question to employ in jury selection, by counsel on either side of the case, in order to classify jurors.

The sum of responses to this question exceeds the base size of respondents, because more than one selection by a respondent was allowed if the respondent believed multiple

responses were equally likely. In jury selection, or in a supplemental juror questionnaire when allowed, the same three possibilities could be posed to potential jurors. Based on common sense and confirmed by this data, those choosing the first option tend to be predisposed toward plaintiffs, and those choosing the third option tend to be predisposed toward the defense.

22. In your opinion, what is the MOST LIKELY reason why a product may cause physical injury?

1. Design or manufacturing defect by the manufacturer
2. Insufficient instructions or warnings
3. A person misused the product or failed to follow the instructions

References

[FN1] *See e.g.* SunWolf, *Practical Jury Dynamics2* (LexisNexis 2007), p. 448 [research into jury deliberations confirms that juries battle over three key aspects of the story: the plot (what happened), the motives of central characters (why it happened), and appropriate consequences (what would constitute justice)]; Jim Wren, *Proving Damages to the Jury* (James Publishing 2011), §3:70 "The Importance of Motivation" [motive always vital to jurors].

[FN2] Quoting from www.amazon.com advertising David Ball and Don Keenan, *Reptile* (Balloon Press 2009) ["how to make tort reform's impact on juries insignificant by using the jurors' most primitive instincts of safety and self-preservation"].