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Heuristics and Biases in Bankruptcy Judges

by

JEFFREY J. RACHLINSKI, CHRIS GUTHRIE, AND ANDREW J. WISTRICH

“Specialization is for insects.”

Robert A. HEINLEIN [1973, p. 248]

Do specialized judges make better decisions than judges who are generalists? Specialized judges surely come to know their area of law well, but specialization might also allow judges to develop better, more reliable ways of assessing cases. We assessed this question by presenting a group of specialized judges with a set of hypothetical cases designed to elicit a reliance on common heuristics that can lead judges to make poor decisions. Although the judges resisted the influence of some of these heuristics, they also expressed a clear vulnerability to others. These results suggest that specialization does not produce better judgment. (JEL: K 35, K 41)

1 Introduction

Judging is becoming an increasingly difficult profession. Legal systems everywhere continuously grow more complex, even as judicial caseloads, at least in the United States, also expand. Federal judges in the United States now manage an average of over 390 cases on their dockets (MECHAM [2005, p. 9, Table 3]). This caseload means that a judge who works 2000 hours each year on directly deciding cases would spend only five hours per year on each case. This is barely enough time to read the memoranda supporting motions in a complex case, or to preside over jury selection in a jury trial.

Given the increasing complexity and time pressure that judges face, it is perhaps no surprise that specialization is a steadily growing trend, at least in the United States (AMERICAN BAR ASSOCIATION CENTRAL AND EAST EUROPEAN LAW INITIATIVE (CEELI) [1996]). The federal system in the United States now has specialized courts for claims involving taxes, patents, and bankruptcy proceedings. Many federal administrative law judges also specialize in particular areas of law, such as social security administration, securities regulation, or veteran’s affairs. Many states have their own specialized courts as well, each with their own unique areas of law, such as water rights, environmental claims, land claims, claims involving state and local government law, or certain drug offences (AMERICAN BAR ASSOCIATION CENTRAL

AND EAST EUROPEAN LAW INITIATIVE (CEELI) [1996]). Virtually all states have courts devoted to handle family law matters, probate claims, and juvenile offenders (although many state judges cycle through each of these departments).

Specialization might enable judges to master an area of law more thoroughly and to therefore use their time more effectively. Few would doubt that specialized judges can learn more about their subject than a generalist judge or that a knowledgeable judge is, other things being equal, a better judge. Specialists can also devote all of their time to the particular area of law, read journals devoted to that specialty, and attend educational conferences in that area. They can also be recruited from the ranks of those lawyers who have practiced in the specialty. Specialists will see the same issues repeatedly, ensuring that areas of the law that might seem complex the first time through become familiar to the specialist judge.

Specialist judges' repeated exposure to the same issues might also produce some unexpected consequences. Repeated exposure to the same problems might allow judges to learn how to make better decisions. Judges, like most adults, rely on simple decision rules, or heuristics, to make decisions (GUTHRIE, RACHLINSKI, AND WISTRICH [2001]). These heuristics can be useful, but can also lead to oversimplification and error (KAHNEMAN AND TVERSKY [1974]). Generalist judges might not be able to develop good heuristics, because they lack the repeated exposure to the same problem that can allow people to develop useful rules of thumb.

Expertise does not consistently produce better judgment, however. Experts often rely on the same common mental shortcuts to make decisions as laypersons, even when doing so leads them to make poor judgments. "Several studies have found that experts display either roughly the same biases as college students or the same biases at somewhat reduced levels" (PLOUS [1993, p. 258]). For example, doctors (ARKES *et al.* [1981]), clinical psychologists (ARKES *et al.* [1988]), and auditors (ANDERSON, LOWE, AND RECKERS [1993]), rely on mental processes that produce the hindsight bias. Clinical psychologists also discount base rate evidence in their diagnoses and suffer from related errors in judgment (CHAPMAN AND CHAPMAN [1969], TVERSKY AND KAHNEMAN [1971]). Real estate agents fall prey to anchoring when estimating real estate prices (NORTHCRAFT AND NEALE [1987]). Doctors and lawyers suffer from framing effects (BABCOCK *et al.* [1995], MCNEIL *et al.* [1982]). Many factors might account for experts' reliance on faulty mental processes. Notably, experts often lack the feedback necessary to learn how to make better decisions.

Experts sometimes learn to make better judgments than laypersons, however (HEATH, LARRICK, AND KLAYMAN [1998]). Typically, superior judgment among experts arises from their reliance on a professional norm concerning how to make judgments, rather than from their repeated experience with the decision itself. For example, civil engineers learn to add an allowance for structural safety beyond that which their own judgment would suggest is necessary (HEATH, LARRICK, AND KLAYMAN [1998]). This norm counteracts the overconfidence and lack of foresight that is common to many professionals that would otherwise lead to many structural

failures. It is not so much that the expert's judgment is better than a layperson's judgment, but rather, experts rely less on their own judgment and more on their training.

As to judges, our own previous research demonstrates that judges rely on misleading heuristics in some circumstances (GUTHRIE, RACHLINSKI, AND WISTRICH [2001]). Specifically, we have found that judges: rely on misleading numeric anchors when assessing damage awards; are sensitive to the presentation of a settlement as a gain or as a loss; are prone to the hindsight bias in assessing the potential outcome on appeal; inappropriately disregard base rate information relevant to negligence decisions; and suffer from self-serving bias in assessing their own likelihood of being overturned on appeal. Our research suggests that generalist judges often make the same kinds of mistakes as the rest of us when making judgments and decisions.

But our previous research has been conducted entirely on generalist judges. What about specialized judges? The only other study of specialty judges revealed that bankruptcy judges suffer from at least one common error in judgment – the egocentric, or self-serving, bias – that has also been shown to influence generalist judges. Theodore Eisenberg found that bankruptcy judges rated themselves as more prompt and efficient than did the lawyers who appear in front of them, even on issues that would seem subject to objective evaluation (EISENBERG [1994]). It could be that judges were accurate, and the lawyers simply underestimated their abilities, but it seems likely that bankruptcy judges suffer from the common tendency to see themselves in a better light than is actually the case.

In this paper we discuss further empirical research on the decision making of one particular type of expert judges: namely, bankruptcy judges in the United States. In our study, we assess whether the bankruptcy judges rely on of the same kinds of cognitive process that we have observed in other judges, as well as assess the role of other kinds of potentially misleading information in these judges.

2 *The Study*

2.1 *The Participating Judges*

We recruited a total of 113 sitting bankruptcy judges attending a judicial education conference in Seattle, Washington, on August 9, 2004, to participate in our study.¹ The conference was the annual judicial education conference for United States bankruptcy judges organized by the Federal Judicial Center. These judges came from all across the United States. At the conference itself, we presented a panel, entitled, "The Psychology of Judging." Judges at the conference had the option of attending our panel or one of two other competing panels held concurrently. We do not know what percentage of judges attending the conference chose our panel, but

¹ The results of this study are also reported, in greater detail in RACHLINSKI, GUTHRIE, AND WISTRICH [2007].

we do know that the 113 judges in attendance constituted 36.1% (113 out of 313, see MECHAM [2004, p. 24, Table 13]) percent of all bankruptcy judges serving at the time of the conference.

The federal bankruptcy judges are a particular type of specialized judge, with notable characteristics. The bankruptcy judges are appointed by merit-selection panels within each federal judicial circuit, and serve 14-year renewable terms (28 U.S.C. § 152(a)(1)). The jurisdiction of the bankruptcy courts is largely limited to bankruptcy matters. All bankruptcy matters are assigned initially to a bankruptcy judge. Hence, these judges do not preside over criminal matters, but in unusual cases, they can preside over civil trials, when doing so is closely related to the adjudication of a bankruptcy claim (28 U.S.C. § 157). Appeals from bankruptcy judges run directly to the trial courts, rather than to the appellate courts (28 U.S.C. § 158(a)). The bankruptcy courts have an extremely heavy caseload, as slightly more than 300 judges faced over 1.8 million open cases in 2005 (MECHAM [2005, p. 19, Table 7]).

We did not ask the judges to identify themselves by name, but we did ask them to identify their gender, number of years of experience on the bench, and which political party with which they most closely identified. In our sample, 26.7% (30 out of 112²) of the judges were women. As to political party, 76.6% (82 out of 107) self-identified as Democrats and 23.4% (25 out of 107) self-identified as Republicans. The bankruptcy judges in our sample reported that they had, on average, 11 years of experience. They ranged from brand new judges to judges with 28 years of experience; the median level of experience was 10 years.

2.2 *The Procedure*

At the conference we distributed our questionnaires to the judges in person before our presentation. We asked the judges to read and respond to each of the questions and to do so independently. At the beginning of the session, one of us (Wistrich) introduced himself, and asked the judges to read and respond to the questionnaire in front of them. He requested that they do so quietly, assured them that we were not collecting their names or other identifying information, and informed them that we would score the results and present them back to them at the end of the session. The judges appeared to take the questionnaires seriously; as the room was silent during the administration of the questionnaires.

Because we did not ask the judges to identify themselves, all responses were anonymous. We also informed the judges that participation in the survey was entirely voluntary. The final page of the questionnaires gave the judges the opportunity to limit the use of their answers to discussion during their particular conference, thereby excluding them from discussion in other contexts and from use in any publication. One judge (out of the 114 judges who received the survey) exercised this option and results from this judge are not included in our analysis.

² Not all of the 113 judges in our sample answered all of the demographic questions.

2.3 *The Materials*

We gave each of the bankruptcy judges a questionnaire that included five hypothetical cases. The first four hypothetical questions assessed the influence of anchoring, framing, the omission bias, and the effect of the race of a debtor, while a fifth hypothetical tested for the effect of apologies and of terror management.³ We explain each of these phenomena below, along with the results. We also assessed the influence of experience, political party, and gender of the judges on their decisions.

3 *Results*

3.1 *Anchoring*

When people make numeric estimates (*e.g.*, the fair market value of a house), they commonly rely on the initial value available to them (*e.g.*, the list price). That initial value tends to “anchor” their final estimates (see KAHNEMAN AND TVERSKY [1974]). Reliance on an anchor is often reasonable because many anchors convey relevant information about the actual value of an item. Anchors also influence judgment when they clearly convey no useful information, however. In one early study of anchoring, for instance, Professors Amos Tversky and Daniel Kahneman asked participants to estimate the percentage of African countries in the United Nations. Before asking for this estimate, they informed the participants that the number was either higher or lower than a numerical value identified by the spin of a “wheel of fortune.” Tversky and Kahneman had secretly rigged this “wheel of fortune” to stop either on 10 or 65. When the wheel landed on 10, participants provided a median estimate of 25%; when the wheel landed on 65, participants provided a median estimate of 45%. Even though the initial values were clearly irrelevant to the decision task, they had a pronounced impact on the participants’ responses.

To test for the influence of anchoring on bankruptcy judges, we constructed a problem in which judges had to set an interest rate on a restructured loan. In creating the problem, we took advantage of a recent United States Supreme Court opinion, *Till v. SCS Credit*.⁴ The case required that the Supreme Court determine the method bankruptcy courts must use for setting the interest rate for a secured loan in certain bankruptcy proceedings. The Supreme Court concluded that the appropriate method for calculating a new interest rate in these proceedings should consist of the prime lending rate, plus some amount designed to reflect the slightly greater risk of default the debtor presents, relative to large commercial creditors. In so concluding, the court determined that the loan’s ori-

³ The order in which we present the phenomena here is not the same as the order in which the judges evaluated the materials. The judges saw the hypothetical questions in the following order: anchoring, race, omission bias, framing, and apology/terror management.

⁴ We thank Professor Douglas Baird for suggesting this problem.

ginal interest rate (before the bankruptcy filing) has no direct relevance to the final rate.

To test whether anchoring has an effect on bankruptcy judges, we drafted materials that presented the same assessment present in *Till*.⁵ The original interest rate is not part of the calculus the Supreme Court articulated. Hence, we reasoned that any effect that the original rate might have on the judges' assessment of the appropriate interest rate would reflect the influence anchoring. Half of the judges in our study simply determined an appropriate interest rate, given the facts we provided. For these judges, the materials noted that, "The parties agree that under *Till*, the original contract interest rate is irrelevant to the court's determination." The other half received the same sentence, except that the words "of 21%" were included between the words "rate" and "is irrelevant." Thus, half of the judges were provided no interest rate and the other half were provided with an interest rate.

The interest rate affected the judges' assessments. The mean interest rate set by the 54 judges who did not know the original rate was 6.33% while the mean interest rate set by the 49 judges who were told that the original interest rate was 21% was 7.13%.⁶ The difference between the two groups was marginally statistically significant ($t(101) = 1.86, p = 0.066$).⁷ Thus, the judges seemed to be affected by the irrelevant numeric anchor.

To be sure, judges might have found the high interest rate informative, even apart from its effect as an anchor. The rate was fairly high and as such, might have signaled to the judges that the debtor posed a significant risk of default. Our materials were sparse, so this might have been an important clue for the judges as to the risk of further default. We think this account unlikely, however, for two reasons. First, as the Supreme Court noted in *Till*, and bankruptcy judges surely know, the risk of default after the debtor has filed in Chapter 13 is apt to be very different from the risk of default when the loan was initiated. The debtor has resolved many unsecured debts through the bankruptcy filing, has offered a plan designed to achieve solvency that has been approved by a bankruptcy judge, and remains under the supervision of the bankruptcy court. Second, our materials note some changed circumstance from the time of the loan. Even though we gave them few facts, the judges would have had to assess the risk of default under very new circumstances than when the loan was offered. As the Supreme Court itself announced when embracing its formula in *Till*, the initial contract interest rate no longer provides useful information to the bankruptcy judge.

We thus conclude that the interest rate operated as a largely irrelevant, but still influential anchor. The expertise that bankruptcy judges bring to the assessment of

⁵ The original materials presented to the judges are available from the first author.

⁶ Six judges in the no anchor condition and two judges in the anchor condition did not answer the question. One judge in the anchor condition provided an interest rate below the prime rate (3.5%). This judge was excluded from the analysis.

⁷ With the judge who provided 3.5% entered into the analysis, the mean in the anchor condition was 7.05, and the difference remained marginally significant. $t(102) = 1.68, p = 0.095$.

interest rates did not insulate them from the effects of anchoring, even though it should not have influenced them.

3.2 *Framing Effects*

People treat decisions that involve potential gains from the *status quo* differently from decisions that involve potential losses (KAHNEMAN AND TVERSKY [1984] and [1979]; TVERSKY AND KAHNEMAN [1981] and [1986]). Psychologists call this the framing effect. The character of a decision as involving a gain or a loss affects peoples' willingness to incur risk. People tend to make risk-averse decisions when choosing between options that appear to represent gains and risk-seeking decisions when choosing between options that appear to represent losses (KAHNEMAN AND TVERSKY [1984] and [1979]; TVERSKY AND KAHNEMAN [1981] and [1986]). For example, most people prefer a certain \$100 gain to a 50% chance of winning \$200 but prefer a 50% chance of losing \$200 to a certain \$100 loss (TVERSKY AND KAHNEMAN [1992]).

Bankruptcy judges constantly make decisions involving risk. Anytime they decide to allow a business to continue operating, they are risking imposing losses on the creditors that are greater than those that immediate liquidation of the business would impose. This decision can be characterized as one involving gains or losses to the creditors. It can be characterized as involving gains in the sense that if a going concern is liquidated in bankruptcy, the creditors get some of their money now, as opposed to gambling that keeping the concern going will bring them greater returns. It can also be characterized as involving losses in the sense that if a going concern is liquidated in bankruptcy, the creditors lose some of the money that they were owed, as opposed to gambling that the keeping the concern going will allow them to avoid incurring some of these losses.

Because this gamble primarily affects the creditors and not the judge, one might think that the decision frame would not affect bankruptcy judges. Nevertheless, in our earlier research, we have found that frames influence judges in civil litigation, which also does not require judges to gamble with their own money. Hence, if the bankruptcy judges, like the other judges we have studied, are affected by frame, then the somewhat arbitrary characterization of a liquidation decision as involving gains or losses might affect bankruptcy judges as well. Given their experience, however, bankruptcy judges might have developed ways of thinking about the liquidation decisions that are not affected by how the decisions are characterized.

Our materials test for the effect of decision frame by presenting the judges with a hypothetical decision either to liquidate a business debtor or to allow the debtor to remain operating. We provided some details of the business and the reasons for its bankruptcy filing. The important detail here was that the company held \$600,000 less in assets than debts. We then presented the judges with a choice of immediate liquidation of the company (which would bring the creditors \$600,000 less than they were owed) or allowing it to continue as an ongoing concern (which held out the

prospect of paying the debts in full). We altered the frame of the choices as follows. Judges in the “gain” condition saw the two options described as follows:

“Which plan would you choose?

- ___ If you select Plan A, \$200,000 of the unsecured debt will be paid for sure.
- ___ If you select Plan B, there is a $\frac{1}{3}$ probability that all of the unsecured debt will be paid and a $\frac{2}{3}$ chance that none of it will be paid.”

Judges in the “loss” condition see the two options described as follows:

- “___ If you select Plan A, \$400,000 of the unsecured debt will remain unpaid for sure.
- ___ If you select Plan B, there is a $\frac{1}{3}$ probability that none of the unsecured debt will remain unpaid and a $\frac{2}{3}$ probability that all of the unsecured debt will remain unpaid.”

Both versions of the choice are, in fact, economically identical.⁸ In the gain frame, Plan A will give the creditors $\frac{1}{3}$ of what they are owed with certainty, while Plan B will give them a $\frac{1}{3}$ chance of recovering all of their debt. The same is true of the plans described from the loss perspective, except that these versions emphasize the unsecured debt that will not be recovered. Other than in the call of the question, the two versions did not vary.

The results varied by frame. Among the judges evaluating the choice of plans in the gain frame, 91.8% (45 out of 49) preferred the plan that would pay one third of the secured debt for sure. Among judges evaluating the choice of plans in the loss frame, 73.3% (44 out of 60) preferred the less plan that involved certain payment. In both instances, the judges favored the certain plan, but the frame shifted the preference by 18.5 percentage points towards the riskier plan – which was a statistically significant difference (Fisher’s Exact Test, $p = 0.014$). In effect, more judges were willing to incur the risks of Plan B when the materials identified the choices as involving the loss of unsecured debt rather than the recovery of unsecured debt.

The problem we relied upon, much like the original Asian Disease problem on which it is based, might be explained without reliance on the concept of decision frame. The judges could have interpreted the certain plans as reflecting the minimum number of gains or losses, depending upon frame. Under this account, in the gain frame, the judges might have interpreted the phrase “\$200,000 of the unsecured debt will be paid for sure” as meaning “at least \$200,000” will be paid; judges in the loss frame could similarly have interpreted “\$400,000 of the unsecured debt will remain unpaid for sure” as meaning that “at least \$400,000” will remain unpaid. If so, in the gain frame, Plan A would seem to be more valuable than it would appear in the loss frame. A similar account of the Asian Disease problem has been offered by at least one researcher (MANDEL [2001]). Our data cannot rule out this possibility, but

⁸ The choices are based roughly on the well known (and often criticized) “Asian disease” problem first reported by KAHNEMAN AND TVERSKY [1984].

this account of the Asian Disease problem upon which we relied remains a subject of controversy among psychologists.

3.3 *Omission Bias*

People generally assess actions differently than omissions. When an action causes harm, people are more apt to blame the actor than when the actor has simply failed to undertake some action that prevents harm (SPRANCE, MINSK, AND BARON [1991]). This difference occurs even when the act is similarly to the actor than an omission. Actions are more easily mentally undone than omissions, and produce more regret than the failure to act. Actions also produce a greater attribution of responsibility than omissions. This phenomenon might underlie many parents' reluctance to vaccinate their children, which confers benefits, but also a small risk of harm (RITOV AND BARON [1990]). In one study of the omission bias, for example, individuals stated that they would be unwilling to undertake a vaccine that posed a 9% risk of illness, even when doing so would alleviate a 10% risk of contracting the very same disease (CHAPMAN [2004]).

To test whether bankruptcy judges also are sensitive to the distinction between acts and omissions, we created a problem in which the judges assess an individual debtor who might have avoided filing for bankruptcy either because of an act or an omission. The hypothetical described an elderly debtor who filed for bankruptcy after falling deeply into debt on his credit card. The materials noted that he might have avoided bankruptcy, as he had inherited a notable sum of money from his brother. He had badly managed the inheritance, however, and had lost it all. Half of the judges read that this inheritance consisted of stock in a mid-sized company that he had neglected to convert into a safe investment (an "omission"); the other half of the judges read that the debtor had inherited U.S. Treasury notes, but that he had converted them into stock in a mid-sized company (a "commission"). In both cases, the materials indicated that shortly afterwards, the stock became worthless.

The materials ask the judges to rule on the debtor's petition to discharge his credit-card debt. Although bankruptcy proceedings (at the time) ordinarily allow a debtor a fresh start, free from unsecured debt, Section 523(a)(2)(A) of the bankruptcy code precludes the dissolution of such debt under circumstances in which absolution would constitute fraud. A debtor who knows that he is incurring debt that he cannot pay is not to be absolved of such debt in bankruptcy. The materials asked, "based solely on the facts above, would you discharge [the debtor's] credit card debt?" They present six choices below this, ranging from: "Very likely to discharge"; "Likely to discharge"; "Somewhat likely to discharge"; "Somewhat unlikely to discharge"; "Unlikely to discharge"; "Very unlikely to discharge".

As Table 1, below, shows, the omission/commission distinction had no effect on the judges in our study. An ordered logit analysis revealed that the condition had no effect on the judge's choices ($Z = 0.48$, $p = 0.63$).

Table 1
% Choosing Each Option in the Omission/Commission Problem

Condition	Very likely to discharge	Likely to discharge	Somewhat likely to discharge	Somewhat unlikely to discharge	Unlikely to discharge	Very unlikely to discharge
Omission (<i>n</i> = 52)	63.5	21.2	7.7	1.9	5.8	0.0
Commission (<i>n</i> = 61)	63.9	31.2	3.3	1.6	0.0	0.0

To be sure, these materials provided a somewhat indirect test of the influence of the omission bias. We did not ask the judges to assess the culpability of the act or omission that dissipated the debtor's savings. Rather, we asked them to assess the state of mind of the debtor when he incurred the credit-card debt. Here, the omission or commission does not speak to that state of mind, but to the causes of the bankruptcy itself. Hence, the omission bias might well have affected how judges assign blame for the debtor's insolvency, but would not necessarily affect the judges' thinking about the nature of the debt itself.

Nevertheless, we think that if the omission bias plays a role in judges' thinking, it should have played a role in this hypothetical. Indeed, we designed this hypothetical precisely to test the possibility of an indirect, and hence more arbitrary, influence of the bias. In applying the broad mandate against fraud, we suspect that bankruptcy judges are influenced by the culpability of the debtor. To the extent that they blamed the debtor for his situation, we believe that they would have treated the debtor differently. Our results cannot, of course, definitively rule out the role that the omission bias might play in how bankruptcy judges make decisions, but the results suggest that its influence might not extend to contexts in which it plays only an indirect role.

3.4 Race

We also tested for the effects of the race of the debtor on the decisions of bankruptcy judges. Race clearly should have little effect on the kinds of decision any judge makes. The legal system in the United States is deeply imbued with a sense of equal protection that is wholly inconsistent with the concept that people should be treated differently because of their skin color. Race represents an influence judge simply must resist. Nevertheless, a handful of studies provide some fairly direct evidence of the influence of race on the decisions of judges. Race has been found to affect judges' bail setting-decisions (AYRES [2003, pp. 233–273]) and their sentencing decisions (MUSTARD [2001]).

We crafted materials to assess the role that race of the debtor might play in discretionary discharge decisions that bankruptcy judges make. Mindful of the

potential that judges might react to our efforts to study race, we adopted the research methods used in a recent study of the effect of race on employment decisions by BERTRAND AND MULLAINATHAN [2004]. These researchers devised fake resumes that they sent to real employers who had posted want ads in local newspapers. The resumes varied the name of the applicant, using names that people generally think of as African-American names and names that people do not think of as African-American names. Employers were much less likely to call applicants with African-American-sounding names on the applicant's resume. The availability of these names, proven to produce disparities in other contexts, allowed us to alter the race of the debtor in our scenarios without simply identifying their race.

The hypothetical itself provided a story of a woman seeking to have student-loan debt discharged in bankruptcy. The materials described a woman who dropped out of college after three years due to an unplanned pregnancy. She incurred sizeable student-loan debts that she was seeking to have discharged. In the U.S. Bankruptcy system, a bankruptcy judge can only discharge student loans if: (1) the debtor cannot maintain a minimal standard of living for herself and her dependents if required to repay the loan; (2) additional circumstances exist suggesting this is likely to remain the case throughout a significant portion of the repayment period; and (3) the debtor has made good faith efforts to repay the loan.⁹ The materials then asked what portion, if any, of the debtor's student loan the judges would discharge. (The problem also asked judges to assume that they had the option of partly discharging educational loan debt even though the issue of whether partial discharge is available or not is a matter of some dispute.) The materials asked, "Based on the 'undue hardship' test enunciated above and the facts as given, what dollar amount of Student's loan amount would you discharge (please pick a dollar amount between \$0 and \$83,748)?"

The race of the debtor did not affect the judges. The judges who assessed the debtors with African-American names discharged a mean of \$47,106 (or 56.2%) while the judges who assessed the debtors with white names discharged a mean of \$48,506 (or 57.9%). This difference was not significant ($t(106) = 0.24, p = 0.81$).

3.5 *Apologies and Terror Management*

The last problem was designed to address two different psychological phenomena: the role of apologies and the role of what psychologists call terror management. Both reflect potential emotional influences that might distract the judges from focusing on the application of the bankruptcy laws to individual debtors.

Apologies doubtless play an important role in the litigation process. Anecdotally, many aggrieved civil litigants report seeking contrition from parties they feel have wronged them, at least as much as they seek compensation. "Victims desire an apology" (O'HARA AND YARN [2002, p. 1122]). Many states, in fact, have adopted

⁹ The materials cite several cases as support: *Brunner v. New York State Higher Educ. Serv. Corp.*, 831 F.2d 395, 396 (2nd Cir. 1987); *accord, Educational Credit Mgmt. Corp. v. Polleys*, 356 F.3d 1302, 1309 (10th Cir. 2004); *In re Gerhardt*, 348 F.3d 89, 91 (5th Cir. 2003).

statutes that shield apologies from admissibility in civil cases, so as to encourage litigants to say they are sorry (O'HARA AND YARN [2002]). In criminal cases, so important are expressions of sorrow and remorse that they reduce a criminal sentence (U.S. Sentencing Commission, Guidelines Manual § 3.E [2005]). Similarly, jurors who have served in capital cases report that a belief that the defendant is truly remorseful is second only to the future dangerousness of the defendant in influencing their decision as to whether to sentence the defendant to death (GARVEY, EISENBERG, AND WELLS [1988]).

Experimental research on apologies confirms the view that apologies matter in litigation. Professor Jennifer Robbenolt has conducted a series of studies in which people assess the value of apologies in hypothetical cases (ROBBENOLT [2003]). Her work reveals that apologies facilitate settlement. Aggrieved plaintiffs who receive a sincere apology are more likely to accept a settlement and are willing to settle for less than plaintiffs who do not receive such an apology. The form of the apology, however, is important. A defendant who only expresses sorrow for a plaintiff's injury does not benefit from the apology. A defendant must also accept responsibility and expresses remorse for their actions for the apology to be successful.

Terror management refers to the idea that contemplating mortality affects how people think (GREENBERG, SOLOMON, AND PYSZCZYNSKI [1997]). Indeed, it is also referred to as "mortality salience." People contemplating their own mortality make decisions that reflect an effort to counteract the transience of their corporeal being. They endorse deeply held beliefs they share with many others or express greater reverence for enduring cultural attitudes or symbols. For example, United States citizens express more support for American policies when quizzed in front of a funeral home than in front of more neutral locations (GREENBERG, SOLOMON, AND PYSZCZYNSKI [1997]). Writing essays about death (as opposed to neutral topics) also induces people to express greater esteem for their country, their religion, and their ethnic group (GREENBERG, SOLOMON, AND PYSZCZYNSKI [1997]).

Terror management has been shown to affect judges. In one study, researchers asked a group of municipal court judges to write a brief essay describing either a neutral topic or their own death (ROSENBLATT *et al.* [1989]). Both groups were then asked to review a criminal case against a prostitute and set bail. The group that wrote about death set bail at an average of \$450, while the group that wrote about a neutral topic set bail at an average of \$50. Although this is the only study of judges, a whole range of studies demonstrate a diverse array of effects that thinking about one's mortality can have on judgments involving the legal system (see ARNDT *et al.* [2005]).

Assessing the effects of terror management on the legal system can be complex. Thinking about death leads people to embrace cherished cultural attitudes and icons – things that would seem likely to last beyond one's own life. For judges, this might produce a conflict of sorts. Consider, for example, a judge who faces a suppression hearing involving inculpatory evidence against a vicious criminal defendant. Terror management suggests that the judge might become more punitive so as to affirm the fundamental rules governing a stable society; this might lead

a judge to be more willing to admit the evidence rather than let the transgressor go free. On the other hand, if the evidence was obtained in violation of a judge's deeply held constitutional values, then the judge might affirm his or her world views by suppressing the evidence, even at the expense of letting the transgressor go free. Terror management theory predicts only that a person will embrace a deeply held value, but does not predict which value predominates among competing principles.

We designed a hypothetical question to test both the effects of apologies and of terror management. The question mimicked the materials we used to test the omission bias in that we depicted a debtor seeking to have credit-card debt discharged. As noted above, the debt can be discharged if it was not accumulated with the knowledge that it could not be repaid. In our problem, the debtor incurred the debt from taking a lavish vacation that caused his employer to discharge him. His subsequent unemployment made it impossible for him to repay the debt. The materials presented the judges with many details, including the nature of the debtor's former employment. They ended by asking the judges whether they would discharge the debt, and include the same six-item checklist (ranging from "Very likely to discharge" to "Very unlikely to discharge") as we used in the problem testing for the omission bias.

We varied the problem to test for the effect of both apologies and terror management. Half of the judges simply assessed the problem as stated above. The other half read a version that included a sincere apology by the debtor for incurring the debt. To test the terror management hypothesis, we varied the type of job that the debtor had secured. For half of the judges, the materials identified his job as a bus boy for a pizza restaurant and for the other half of the judges, the materials identified his job as a gravedigger for a local mortuary. In effect, we employed a 2x2 design, such that one quarter of the judges evaluated an unemployed bus boy, another quarter evaluated an unemployed bus boy that had apologized, another quarter evaluated an unemployed gravedigger, and the last quarter evaluated an unemployed gravedigger who had apologized.

We had no prior theory as to whether the apology would interact in any way with our terror management manipulation. We know of no study that suggests that it would. Our intent here was simply to use this hypothetical as a vehicle for studying multiple phenomena.

As Table 2a, below, shows, the apology had little effect on the judges. An ordered logit analysis showed that the judges who saw the apology did not make significantly different choices than judges who did not ($Z = 0.50$, $p = 0.615$).

As Table 2b, below, shows, our effort to invoke terror management had no effect on the judges' choices either. An ordered logit analysis showed that the debtor's job did not significantly affect the judges ($Z = 0.14$, $p = 0.887$).

The results on apologies are particularly striking. We used the type of apology that is supposed to have the greatest effect; the apologist expresses personal responsibility and regret for his own actions. Several factors might account for the lack of a finding here. First, although we have no hard data, we think it is extremely unusual for a bankruptcy judge to encounter a debtor who apologizes. Indeed, individual debtors

Table 2a
% Choosing Each Option in the Apology Problem

Condition	Very likely to discharge	Likely to discharge	Somewhat likely to discharge	Somewhat unlikely to discharge	Unlikely to discharge	Very unlikely to discharge
No apology (<i>n</i> = 54)	13.0	5.6	5.6	11.1	24.1	40.7
Apology (<i>n</i> = 57)	7.0	8.8	8.8	15.8	26.3	33.3

Table 2b
% Choosing Each Option in the Terror Management Problem

Condition	Very likely to discharge	Likely to discharge	Somewhat likely to discharge	Somewhat unlikely to discharge	Unlikely to discharge	Very unlikely to discharge
Pizza parlor (<i>n</i> = 60)	10.0	8.3	6.7	13.3	25.0	36.7
Funeral parlor (<i>n</i> = 51)	9.8	5.9	7.8	13.7	25.5	37.3

rarely even appear before bankruptcy judges. The apology here might have seemed so anomalous that the judges simply had no sensible way of assessing its worth. Second, bankruptcy judges might be a bit jaded about debtors. After processing thousands of cases of financial ruin each year, bankruptcy judges might come to think that fiscal irresponsibility is rampant. An apology from a debtor, even if unusual, might simply ring hollow. Third, it is important to note that the apology was directed at the judge, and not the debtor. The previous research on apologies shows that apologies are effective when directed at the injured party. Here, the judges have not been adversely affected by the debtor's conduct. One might nevertheless have expected that a serious act of contrition would improve the judge's assessment of the moral standing of the debtor, which in turn might have produced a more lenient view of the debtor's situation. But the data say otherwise.

As to terror management, our results present a clear failure to replicate an already-established phenomenon. The work by Rosenblatt and his colleagues (ROSENBLATT *et al.* [1989]) showed that judges forced to contemplate their mortality produced radically different decisions than judges induced to think about their dining habits. And yet, we found no such effect. It is possible that we did not make their mortality salient enough. After all, Rosenblatt and his colleagues asked judges to write an essay on death. We thus did not force the judges to grapple with mortality the way Rosenblatt and his colleagues did. Still, as noted above, other studies of terror management uncover effects merely by insuring that an interviewee is facing a fu-

neral home. Perhaps punishing debtors might not constitute an action that enhances self-esteem in the face of one's mortality. Forgiveness of debtors, after all, is a fundamental part of most religions. Our data suggest that at least in the bankruptcy context, a minimal manipulation of mortality salience is not enough to alter judges' decision making.

Both the effect of apologies and of terror management might constitute undesirable emotion influences on the bankruptcy system. The outcome of a bankruptcy hearing should not really depend on whether the judge just returned from a funeral. And unless Congress amends the bankruptcy code to include specific provisions allowing judges to be more lenient on debtors who accept responsibility for their debts (as the federal sentencing guidelines do in the criminal context), apologies should play no role in the outcome of bankruptcy hearings either. In this context, at least, the judges effectuated the stated goals of the bankruptcy system, uncluttered by these emotional effects.

4 Further Analysis: Politics, Comparisons, and Conclusions

The results present a somewhat murky answer to the question of whether specialization allows judges learn to rely on helpful, rather than misleading, heuristics. Both anchoring and framing adversely affected the bankruptcy judges, but the judges resisted the omission bias, the effects of race, and the emotional influences of apologies and mortality salience. In this section, we present a comparison of these results to a similar assessment of generalist judges, we discuss the influence of political attitudes on these judges, and we offer some brief conclusions.

4.1 Specialists versus Generalists

We have used similar methods to study the effects of heuristics in generalist judges, thereby facilitating a rough comparison. In one of our previous studies, we assessed the effects of anchoring and framing (among other phenomena) on a group of 167 federal magistrate judges. Federal magistrate judges and bankruptcy judges are quite similar in that before they become judges they are experienced lawyers. Both types of judges are also appointed to their positions by a merit-selection process for fixed terms. Federal magistrate judges, however, preside over a whole range of disputes. Furthermore, most of the bankruptcy judges come to the bench as specialized attorneys, having had prior experience as bankruptcy attorneys (MABEY [2005, p. 107]). The magistrates, by contrast, generally join the bench after long careers as prosecutors, criminal-defense attorneys, or attorneys engaged in general civil litigation. Hence, their principal differences are that the bankruptcy judges are specialists and the magistrates are generalists.

In our previous study, we found that irrelevant anchors influenced magistrate's assessments of pain and suffering damages (GUTHRIE, RACHLINSKI, AND WISTRICH

[2001]). Among magistrates, the introduction of an extremely low anchor reduced damage awards by 0.41 standard deviations.¹⁰ In the present study of bankruptcy judges, the anchor increased the interest rate by 0.37 standard deviations. The effect here was thus nearly identical to that which we observed in the magistrate judges.

The framing effect we observed among bankruptcy judges was also similar to that which we observed in our study of magistrate judges' assessments of settlements in civil lawsuits. In the study by GUTHRIE, RACHLINSKI, AND WISTRICH [2001], the variation by frame from gains to losses shifted the judges' preferences by 15 percentage points (40 percent favored the certain option in the gain frame and 25 percent favored the certain option in the loss frame). In the present study of bankruptcy judges, by contrast, the shift of frames altered choices by 18.5 percentage points (91.8 percent favored the certain option in the gain frame and 73.3 percent favored the certain option in the loss frame). Once again, the effect is similar.

We note that, as described above, previous work has shown other generalist judges to be vulnerable to the effects of race and of terror management (ROSENBLATT *et al.* [1989]). Rosenblatt and colleagues' study of terror management was also notably similar to our own work (unlike the field research that produced the differences by race of defendant), and hence provides some modest sense that bankruptcy judges may be more resistant to this untoward influence than generalist judges.

Another related piece of the evidence related to the potential superiority of specialized judges is that we consistently found that more experienced judges were neither more nor less vulnerable to the psychological influences we studied. (We did not report the detailed statistical analysis of this in this paper, but we failed to find such a trend for any of the phenomena that we studied.) This result also undermines the thesis that specialized experience produces better decision making. That experience did not mollify the effects of anchors or frames suggests that the judges do not become more resistant to cognitive error over time. Furthermore, the younger judges were no less resistant to misleading influences of omission, race, apology, or terror management than their senior colleagues. If specialization facilitates the development of superior heuristics, then we should have observed a relationship between experience and the rate of cognitive error.

Thus, overall, these results do not suggest that specialization has much, if any effect on judges' propensity to rely on misleading heuristics. To be sure, the comparisons are clumsy in that we did not use precisely the same materials. And we found no effect of terror management in bankruptcy judges, even though other research has uncovered large effects in generalist judges. But overall, our study cannot be said to support the idea that experience produces better ways of judging cases.

¹⁰ Note, this was calculated by the difference in the mean of the log of the damage award in each condition by the standard deviation of the log of the awards observed in GUTHRIE, RACHLINSKI, AND WISTRICH [2001]. Using the raw data would not be appropriate for this calculation because the data were positively skewed.

4.2 Political Influences

In our study of bankruptcy judges the judge's political orientation affected their judgment, as shown in Table 3, below. Republican judges made decisions that favored creditors more than their Democratic counterparts. Republican judges set higher interest rates for the individual debtor in the anchoring hypothetical and discharged less of the student loan in the race problem. They were also less sympathetic to the omission bias problem, although this trend was not significant. We did not observe any difference on the apology/terror problem, and the framing problem presents options that cannot be said to reflect any preferences for debtors or creditors. Even though the sample size was small (owing to the scant number of Republicans in our sample), we observed one significant difference and one marginally significant difference.

Table 3
Comparison of Republican and Democratic Judges in Our Study

Party	Anchoring Study: Mean Interest Rate	Race Study: Mean Amount of Loan Discharged	Omission Bias: Likelihood of Discharge (on a 6-point scale; higher means less likely)	Apology: Likelihood of Discharge (on a 6-point scale; higher means less likely)
Republican (<i>n</i> = 25)	7.40	\$34,323	1.76	4.42
Democratic (<i>n</i> = 82)	6.49	\$50,972	1.44	4.42
(statistical test for difference)	<i>t</i> (97) = 1.75 <i>p</i> = 0.08	<i>t</i> (100) = 2.41 <i>p</i> = 0.02	<i>t</i> (97) = 1.29 <i>p</i> = 0.21	<i>t</i> (103) = 0.01 <i>p</i> = 0.99

The results on political party are perhaps less than surprising. The Republican Party, more so than the Democratic Party, claims to emphasize personal responsibility above governmental paternalism. In this fact pattern owning up to one's debts might be more consistent with Republican attitudes than Democratic ones.

This finding is at odds with much of our other work in which we generally do not find differences between judges of different political parties. It is also not consistent with data on juries that indicates that general attitudes (such as orientation towards a particular political party) do not often predict jury verdicts.¹¹ But research on juries also shows that more specific attitudes can predict verdicts. It is possible that service as a bankruptcy judges, unlike service as a general civil or criminal judge, taps closely into the attitudes associated with the two major political parties in the United States.

¹¹ See HANS AND VIDMAR [1986].

This possibility raises a serious downside for the expansion of specialized judges. These results suggest that it may be easier for an appointing authority to predict the decisions of specialized judges than generalized judges. Whereas a generalist judge might hold an array of attitudes, only some of which might be consistent with the desires of the entity that appoints generalist judges, specialist judges only decide a narrow range of cases, and hence might be more predictable. Greater specialization thus risks greater politicization of the judiciary.

4.3 Conclusion

In our study, bankruptcy judges resisted the effects of the omission bias, were unaffected by the race of the debtors, were indifferent to a debtor's apology, and were not affected by a transient emphasis on their own mortality. We think this is all good news. We do not think that these factors should have had any effect on judges. They were all distractions that have been found to affect ordinary decision makers, and these judges resisted them. At the same time, however, the judges relied on the irrelevant anchor and were influenced by framing. Furthermore, we found no evidence that specialization had any beneficial effect on the judges' judgment.

Our study can be only a small part of any serious debate on the use of specialist judges. Our study presents no evidence that specialization allows judges to develop better cognitive skills. Specialists might still know the law better than generalists can and might present other advantages. Our study suggests no real cognitive advantages for specialized judges, and raises the unexpected downside, however, that specialty can facilitate greater political control over the judicial process.

References

- AMERICAN BAR ASSOCIATION CENTRAL AND EAST EUROPEAN LAW INITIATIVE (CEELI) [1996], "Concept Paper on Specialized Courts," <http://www.abanet.org/ceeli/publications/conceptpapers/speccourts/spc1.html>.
- ANDERSON, J. C., D. J. LOWE, AND P. M. J. RECKERS [1993], "Evaluation of Auditor Decisions: Hindsight Bias Effects and the Expectation Gap," *Journal of Economic Psychology*, 711–737.
- ARKES, H. R., D. FAUST, T. J. GUILMETTE, AND K. HART [1988], "Eliminating the Hindsight Bias," *Journal of Applied Psychology*, 73, 305–307.
- , R. L. WORTMANN, P. D. SAVILLE, AND A. R. HARKNESS [1981], "Hindsight Bias among Physicians Weighing the Likelihood of Diagnoses," *Journal of Applied Psychology*, 66, 252–254.
- ARNDT, J., J. D. LIEBERMAN, A. COOK, AND S. SOLOMON [2005], "Terror Management in the Courtroom: Exploring the Effects of Mortality Salience on Legal Decision Making," *Psychology, Public Policy, and Law*, 11, 407–438.
- AYRES, I. [2003], *Pervasive Prejudice? Unconventional Evidence of Race and Gender Discrimination*, University of Chicago Press: Chicago, IL.
- BABCOCK, L., H. S. FARBER, C. FIOBIAN, AND E. SHAFIR [1995], "Forming Beliefs about Adjudicated Outcomes: Perceptions of Risk and Reservation Values," *International Review of Law and Economics*, 15, 289–303.

- BERTRAND, M., AND S. MULLAINATHAN [2004], "Are Emily and Greg More Employable than Lakisha and Jamal? A Field Experiment on Labor Market Discrimination," *American Economic Review*, 94, 991–1013.
- CHAPMAN, G. B. [2004], "The Psychology of Medical Decision Making," pp. 585–603 in: D. J. Koehler and N. Harvey (eds.), *Blackwell Handbook of Judgment and Decision Making*, Blackwell Publishing: New York.
- CHAPMAN, L. J., AND J. P. CHAPMAN [1969], "Illusory Correlation as an Obstacle to the Use of Valid Psychodiagnostic Signs," *Journal of Abnormal Psychology*, 74, 271–280.
- EISENBERG, T. [1994], "Differing Perceptions of Attorney Fees in Bankruptcy Cases," *Washington University Law Quarterly*, 72, 979–995.
- GARVEY, S. P., T. EISENBERG, AND M. J. WELLS [1998], "But Was he Sorry? The Role of Remorse in Capital Sentencing," *Cornell Law Review*, 84, 1599–1637.
- GREENBERG, J., S. SOLOMON, AND T. PYSZCZYNSKI [1997], "Terror Management Theory of Self-Esteem and Cultural Worldviews: Empirical Assessments and Conceptual Refinements," pp. 61–139 in: M. P. Zanna (ed.), *Advances in Experimental Social Psychology*, Vol. 29, Academic Press: New York.
- GUTHRIE, C., J. J. RACHLINSKI, AND A. J. WISTRICH [2001], "Inside the Judicial Mind," *Cornell Law Review*, 86, 777–830.
- HANS, V. P., AND N. VIDMAR [1986], *Judging the Jury*, Plenum Press: New York.
- HEATH, C., R. P. LARRICK, AND J. KLAYMAN [1998], "Cognitive Repairs: How Organizational Practices Can Compensate for Individual Shortcomings," *Research in Organizational Behavior*, 20, 1–38.
- HEINLEIN, R. A. [1973], *Time Enough for Love*, Berkeley Publishing Group: New York.
- KAHNEMAN, D., AND A. TVERSKY [1974], "Judgment under Uncertainty: Heuristics and Biases," *Science*, 185, 1124–1130.
- AND -- [1979], "Prospect Theory: An Analysis of Decision under Risk," *Econometrica*, 47, 263–291.
- AND -- [1984], "Choices, Values, and Frames," *American Psychologist*, 39, 341–350.
- MABEY, R. R. [2005], "The Evolving Bankruptcy Bench: How Are the 'Units' Faring?," *Boston College Law Review*, 47, 105–128.
- MANDEL, D. R. [2001], "Gain-Loss Framing and Choice: Separating Outcome Formulations from Descriptor Formulations," *Organizational Behavior and Human Decision Processes*, 85, 56–76.
- MCNEIL, B. J., S. G. PAUKER, H. C. SOX JR., AND A. TVERSKY [1982], "On the Elicitation of Preferences for Alternative Therapies," *New England Journal of Medicine*, 306, 1259–1262.
- MECHAM, L. R. [2004], *2004 Annual Report of the Director: Judicial Business of the United States Courts*, Administrative Office of the U.S. Courts, Office of Public Affairs: Washington, D.C.
- [2005], *2005 Annual Report of the Director: Judicial Business of the United States Courts*, Administrative Office of the U.S. Courts, Office of Public Affairs: Washington, D.C.
- MUSTARD, D. B. [2001], "Racial, Ethnic, and Gender Disparities in Sentencing: Evidence from the U.S. Federal Courts," *Journal of Law & Economics*, 44, 285–314.
- NORTHCRAFT, G. B., AND M. A. NEALE [1987], "Experts, Amateurs, and Real Estate: An Anchoring-and-Adjustment Perspective on Property Pricing Decisions," *Organizational Behavior and Human Decision Processes*, 39, 84–97.
- O'HARA, E. A., AND D. YARN [2002], "On Apology and Consilience," *Washington Law Review*, 77, 1121–1192.
- PLOUS, S. [1993], *The Psychology of Judgment and Decision Making*, McGraw-Hill, Inc.: Columbus, OH.

- RACHLINSKI, J. J., C. GUTHRIE, AND A. WISTRICH [2007], "Heuristics and Biases in Specialized Judges: The Case of Bankruptcy Judges," *Boston University Law Review*, forthcoming.
- RITOV, I., AND J. BARON [1990], "Reluctance to Vaccinate: Omission Bias and Ambiguity," *Journal of Behavioral Decision Making*, 3, 263–277.
- ROBBENOLT, J. K. [2003], "Apologies and Legal Settlement: An Empirical Examination," *Michigan Law Review*, 102, 460–516.
- ROSENBLATT, A., J. GREENBERG, S. SOLOMON, T. PYSZCZYNSKI, AND D. LYON [1989], "Evidence for Terror Management Theory: I. The Effects of Mortality Salience on Reactions to those Who Violate or Uphold Cultural Values," *Journal of Personality and Social Psychology*, 57, 681–690.
- SPRANCE, M., E. MINSK, AND J. BARON [1991], "Omission and Commission in Judgment and Choice," *Journal of Experimental Social Psychology*, 27, 76–105.
- TVERSKY, A., AND D. KAHNEMAN [1971], "Belief in the Law of Small Numbers," *Psychology Bulletin*, 76, 105–110.
- AND -- [1981], "The Framing of Decisions and the Psychology of Choice," *Science*, 211, 453–458.
- AND -- [1986], "Rational Choice and the Framing of Decisions," *Journal of Business*, 59, S251–S278.
- AND -- [1992], "Advances in Prospect Theory: Cumulative Representation of Uncertainty," *Journal of Risk and Uncertainty*, 5, 297–323.

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