LOSS AVERSION, OMISSION BIAS, AND THE BURDEN OF PROOF IN CIVIL LITIGATION

Eyal Zamir and Ilana Ritov

1. INTRODUCTION
The general standard of proof in civil litigation is preponderance of the evidence. The plaintiff prevails if she discharges the burden of persuasion—that is, if she establishes her case with a probability exceeding 0.5. When the required standard of proof is not met by either side (p=0.5), the risk of error is ordinarily borne by the plaintiff and her claim is dismissed (McCormick 2006, pp. 483-86). This essay discusses some of the basic questions regarding this conception of burden of proof from a behavioral perspective, specifically through the lenses of loss aversion and the omission bias.

Numerous psychological studies have established that people generally perceive outcomes not as final states of wealth or welfare, but rather as gains and losses. Gains and losses are defined relative to a reference point, usually but not invariably the status quo. The decrease in welfare due to a loss is generally much greater—very often two to three times greater—than the increase due to a similar gain. Choices therefore depend on the way they are framed. In particular, an individual’s reference point determines whether she perceives changes as gains or losses. People display loss aversion both when their choices affect their own welfare and when they impact on that of others. Since losses loom larger than gains, people are inclined to avoid departing from the status quo when this may result in either losses or gains. The same negative outcome will typically be perceived as worse when it is the result of action rather than omission, and a positive outcome will be seen as more gratifying when it is the result of action rather than of omission. Faced with uncertainty, people who are loss averse thus have a bias towards omissions.

Experimental studies indicate that litigants ordinarily view the status quo prior to litigation as the relevant point of reference. Consequently, plaintiffs are far more likely to view judicially awarded damages and other relief as belonging to the domain of gains, and defendants to view a judgment compelling them to pay damages, transfer property, or the like, as inflicting a loss. From a welfarist perspective, then, dismissal of the claim whenever the court is unable to confidently determine the facts of the case is compatible with the notion that losses to the defendant loom larger than unattained gains to the plaintiff. Ceteris paribus, placing the burden of proof on the plaintiff minimizes the total cost of erroneous judgments.

A more intriguing implication of loss aversion relates to the standard of proof. Other things being equal, if the disutility experienced by a plaintiff whose claim is erroneously dismissed is much smaller than the disutility to a defendant when a claim is erroneously accepted, to minimize the total costs of erroneous judgments, the standard of proof should not be simply be above 0.5, but should be considerably higher. Other considerations militate against this proposal, yet to the extent that the law strives to enhance human welfare, this consideration should be taken into account.

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Based on a series of experiments described in this essay, we will argue that this tentative normative claim is less radical than it first appears. Our findings indicate that the accepted meaning of the preponderance of the evidence rule (PER) notwithstanding, very likely the actual standard of proof in civil litigation is considerably higher than 0.5. Our experiments also shed light on the ancillary question of what drives these results. While the results do not disprove any of the rationales offered for the PER, neither do they substantiate any of them. The only explanation positively supported by our findings is the factfinders’ own omission bias. Since ruling in favor of the plaintiff is framed as actively interfering in the usual course of things and dismissing a claim is seen as refraining from action, the omission bias inhibits the judge from ruling in favor of the plaintiff unless her case is truly compelling.

Our analyses, coupled with other psychological studies of loss aversion, status quo bias, and the default effect, also elucidate the very notion of burden of proof. Contrary to a prevailing conception, burden of proof does not merely serve as a tiebreaker. Rather, the burden of proof likely creates a baseline against which evidence is assessed, which makes it far more difficult for the party who bears the burden of proof to prevail.

Some caveats regarding the scope and objectives of this study are in order. Focusing on the PER, this study does not address in any detail the various exceptions and refinements to this rule. The analysis also largely sidesteps the controversies regarding the probabilistic approach to legal factfinding (see, e.g., Cohen 1977; Friedman 1997a). It similarly skirts the proposals to replace the PER with a probability-based recovery regime that would split the stakes in accordance with the probabilities favoring each party’s case and the particular difficulties of indeterminate causation and untraceable damage in mass torts and comparable contexts. Finally, this study does not deal with the particular problems of the jury system (see generally Vidmar 1998) or the difficulties associated with jury instructions (see, e.g., Simon 2004, pp. 550-59; Vars 2010, pp. 18-23). While we are fully cognizant of these complex issues and of their potential relevance to some aspects of our analysis, we nevertheless leave a comprehensive investigation of these issues for future inquiries.

Section 2 sets the stage by introducing the pertinent legal and psychological concepts. Section 3 describes the experimental studies we conducted to determine what the actual standard of proof is and what drives this outcome. Section 4 then examines possible explanations for our findings and discusses potential normative implications. Finally, section 5 argues that burden-of-proof rules set the baseline against which evidence is assessed.

2. DOCTRINAL AND BEHAVIORAL BACKGROUND

2.1. The Doctrine

The term “burden of proof” refers to two burdens: the burden of producing evidence, which may shift from one party to the other in the course of the trial, and the burden of persuasion, which does not. The burden of persuasion determines which party prevails when all the evidence has been introduced and the trier of fact is left in doubt. In such a case, the factfinder should decide against the party which bears the burden of proof. This article focuses on the burden of persuasion in civil litigation.
The rules concerning the burden of persuasion in civil litigation are quite intricate. The basic rule is preponderance of the evidence, which may be described in different ways. According to an authoritative, prevalent description, it means that the plaintiff has to persuade the factfinder that the existence of the facts giving rise to her alleged legal right is more probable than their non-existence (Model Code of Evidence, Rule 1(3); McCormick 2006, p. 484). In a somewhat more formal formulation, the rule means that the plaintiff has to establish her case with a probability exceeding 0.5 (Stein 2005, pp. 143-53; Vars 2010). Finally, the rule has been interpreted as requiring that the best explanation of the evidence favors the plaintiff (Pardo and Allen 2008).

Along the basic PER, a number of additional rules complicate the picture. The PER applies only to the facts necessary to make the plaintiff’s case, for example that the defendant negligently harmed her; the defendant bears the burden regarding her affirmative defenses, such as contributory fault (Stein 2005, pp. 219-25). In some specific contexts, such as allegations of fraud, the law sets a higher standard of persuasion: “clear and convincing evidence” (McCormick 2006, pp. 487-90). In addition, various legal presumptions, resting on a range of substantive and procedural considerations, place the burden of persuasion regarding particular issues on the defendant or set specific standards of persuasion for particular facts (McCormick 2006, pp. 495-522). This article does not explore this complexity; rather, it looks at the basic PER from a behavioral perspective.

2.2. Loss Aversion, Omission Bias, and Related Phenomena

According to rational-choice theory, from among the available options, people choose the one that maximizes their expected utility. It is further assumed that one’s assessment of different outcomes is independent of any reference point. Actual losses are equivalent to foregone gains (Korobkin and Ulen 2000, pp. 1060-66).

In 1979, Daniel Kahneman and Amos Tversky proposed a competing, descriptive theory of people’s preferences and choices under risk, the prospect theory (Kahneman and Tversky 1979; see also Tversky and Kahneman 1992). This theory comprises several elements, all of which violate the axioms of rational-choice theory. Most importantly, prospect theory posits that people ordinarily perceive outcomes as gains and losses, rather than as final states of wealth or welfare. Gains and losses are defined relative to some reference point. The value function is normally concave for gains (implying risk aversion) and convex for losses (reflecting risk seeking), and is generally steeper for losses than for gains (indicating loss aversion). People’s choices therefore depend on the way they frame any choice. In particular, a person’s reference point determines what changes are perceived as gains or losses. Ordinarily—but not invariably—people take the status quo as their reference point (Tversky and Kahneman 1991, pp. 1046-47).

In the years following the publication of prospect theory, a good deal of research focused on loss aversion, the principle that the disutility generated by a loss is greater

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1 Michael Birnbaum’s configural-weight theory (Birnbaum and Stegner 1979; Birnbaum 2008) similarly recognizes that people view losses and gains differently and are averse to losses.

2 When expectations differ from the status quo, as is often the case in market environments, taking people’s expectations as the pertinent reference point may yield better explanations and predictions of their behavior (Köszezi and Rabin [2006, 2007]). An individual’s perception of the reference point may also be influenced by the status of other people (Kahneman and Tversky 1984, p. 349).
than the utility produced by a similar gain. A number of seminal studies revealed the role played by loss aversion in diverse economic and social phenomena, including the endowment effect (Thaler 1980; Kahneman, Knetsch, and Thaler 1990) and the equity-premium puzzle (Benartzi and Thaler 1995). Loss aversion has been found not only in laboratory experiments, but also in many real-world contexts (Camerer 2000; DellaVigna 2009, pp. 324-36). Most of the psychological studies of loss aversion and related phenomena focus on people’s perceptions and choices regarding gains and losses to themselves. However, it has been established that loss aversion characterizes perceptions and choices regarding the health, wealth, and welfare of others as well (Ritov and Baron 1990; Vars 1996; Zikmund-Fisher et al. 2006; Moshinsky and Bar-Hillel 2010).

Tversky and Kahneman estimated that monetary losses loom larger than gains by a factor of 2.25 (1992, p. 311). A meta-analysis of 164 experiments of the related phenomenon of the endowment effect found that the median ratio between people’s willingness to pay for a good they do not yet have and their willingness to accept to part with a similar good is 1:2.9 (Sayman and Öncüler 2005, pp. 300, 302).

Several other psychological phenomena have been associated with the notions of reference points and loss aversion, including the status quo bias, the omission bias, and the default effect (see generally Prentice and Koehler 2003, pp. 589-621). The status quo bias refers to people’s tendency to stick to the state of affairs perceived as the status quo rather than to opt for an alternative one (Kahneman and Tversky 1984, p. 348; Samuelson and Zeckhouser 1988; Kahneman, Knetsch and Thaler 1991, pp. 197-99). When a departure from the status quo may result in either gains or losses, people are inclined to stay with the status quo. Altering the default arrangement thus brings about dramatic changes in end results even when opting out of the default is seemingly simple and costless (Madrian and Shea 2001; DellaVigna 2009).

One reason for avoiding active deviation from the status quo is the so-called cost of regret. People expect that if deviation from the status quo were to result in a worse outcome than sticking with it would have, they would experience greater regret than if they had decided to stick with the status quo and later learned that the alternate outcome would have been better (Kahneman and Tversky 1982; Bar-Hillel and Neter 1996; Kermer et al. 2006; see also Mellers and Ritov 2010). More generally, people are viewed as having a greater moral responsibility for harmful outcomes they brought about actively than those they brought about passively (Sugarman 1986; Spranca, Minsk, and Baron 1991; Kordes-de Vaal 1996). People will sometimes prefer harmful omissions to less harmful commissions (Ritov and Baron 1990), thus displaying an omission bias. Correlatively, individuals who attain a favorable outcome through action enjoy greater pleasure than those who reach the same outcome through inaction (Landman 1987; Gleicher et al. 1990).

At times, however, doing nothing means that the state of affairs will change due to external factors. Experimental studies have established that under these circumstances the omission bias has a greater explanatory power than the status quo bias: To avoid the (expected) cost of regret, people tend to refrain from action even if this means allowing the status quo to change (Ritov and Baron 1992; see also Baron and Ritov 1994; Schweitzer 1994).
Finally, Ritov and Baron (1995) investigated the effect of outcome knowledge on regret and the omission bias. While people ordinarily know what the status quo is, they do not necessarily expect to know the outcomes of all the options they could have chosen. Thus, they may expect to know the outcomes of their decision but not the outcomes of the alternative option (partial knowledge); sometimes they may expect to know neither (no knowledge). It was found that the more information a person has about anticipated outcomes, the larger the potential cost of regret and hence the stronger the omission bias, but the omission bias does exist even in circumstances of partial or no knowledge.

Against this doctrinal and psychological background, the following section describes a series of experiments designed to examine the actual standard of proof in civil litigation, taking into account such phenomena as litigants’ loss aversion and factfinders’ omission bias.

3. EXPERIMENTAL FINDINGS

3.1. Background and Motivation

There is ample experimental evidence that litigants ordinarily view the status quo prior to litigation as the relevant point of reference (Rachlinski 1996, pp. 128-30; Zamir and Ritov 2010, pp. 268-69; Hogarth 1987, p. 105; Babcock et al. 1995; Guthrie 2000, p. 182; Guthrie 2003, pp. 1120-27; van Koppen 1990). This common framing, coupled with the different attitudes to risk-taking that characterize decisions in the domain of gains (by plaintiffs) and losses (by defendants), explains, for example, why defendants are more reluctant to accept settlement offers than are plaintiffs (Rachlinski 1996, pp. 128-30). It also explains why plaintiffs are much more enthusiastic about contingent-fee arrangements (which turn the litigation into a pure positive gamble by eliminating the possibility of losing the claim and still having to pay the lawyer’s fee) than are defendants (who view both the outcome of the case and the attorney’s fee as belonging to the domain of losses) (Zamir and Ritov 2010, pp. 268-69).

Indeed, this framing is not invariable. Some experimenters succeeded in inducing a different framing of litigation outcomes (Korobkin and Guthrie 1994, pp. 120-42; Zamir and Ritov 2010, pp. 262-64, 269), and other reference points, such as the expected outcomes of the case or the status quo ante (for instance, the status quo prior to the accident that led to the suit for damages) are conceivable. It remains true, however, that both plaintiffs and defendants tend to view the status quo prior to the litigation as the natural point of reference.

Plaintiffs are therefore far more likely to view judicially awarded damages and other relief as belonging to the domain of gains, and defendants to view a judgment compelling them to pay damages, transfer property, or the like, as inflicting a loss. This means that, as a general matter, erroneously denying a plaintiff a relief to which she is legally entitled is far less detrimental to her well-being than the injury to the defendant’s well-being when an undeserved relief is erroneously awarded. Placing the burden of proof on the plaintiff thus minimizes the total costs of erroneous judicial decisions.

Loss aversion may not only explain and justify placing the burden of proof on the plaintiff; it also bears on the standard of persuasion. The PER ordinarily minimizes the total number of wrong judicial decisions (false positives and false negatives combined)
and maximizes the number of correct decisions (true positives and true negatives) (Lee 1997; Stein 2005, pp. 143-44; Vars 2010, pp. 7-13). However, if we aim at minimizing the total costs of erroneous decisions—rather than their total number—then the PER would only attain this goal if we operate under the assumption that, on average, the cost to the plaintiff from erroneously dismissing her claim is equal to the cost to the defendant from erroneously accepting the claim against her (Posner 1973, p. 408; Vars 2010, p. 41). Whenever the cost of error to the defendant is larger than the cost of error to the plaintiff, not only should the burden of proof be placed on the latter, but the standard of proof should be higher than PER. This line of reasoning has been used to justify the “clear and convincing” standard in special civil cases and the “beyond a reasonable doubt” standard in criminal ones (Kaplan 1968, p. 1072; Lee 1997, pp. 25-27; Posner 1997, p. 1504).

If due to the prevalent phenomenon of loss aversion, losses typically loom larger than gains, often by a factor of 2.25 or so, to minimize the total costs of judicial errors, the standard of proof should arguably be closer to 0.7 than to 0.5. This is because the total cost of errors is a product of multiplying the number of errors by the average disutility they generate.3

Experimentally examining the actual standard of persuasion in civil litigation assumes that there may be a gap between the accepted meaning of the PER and factfinders’ practice. We are not the first to raise the possibility that such gap exists. It has previously been pointed out that possibly, “juries disregard their instructions [regarding burden of persuasion] and judges, trying cases without juries, pay only lip service to it, trusting that the appellate courts will not disturb their findings of fact” (McCormick 2006, p. 472). This incredulity about the actual meaning of the PER and other burden-of-persuasion rules also echoes the divide between European Continental law and American law with regard to the notion of standard of proof. Whereas American law strives to set objective and rational standards of persuasion, the Continental law notion of intime conviction, which applies to both civil and criminal cases, conceives of judicial factfinding as a considerably more subjective and intuitive process (Engel 2009).

A straightforward way to examine the actual implementation of the PER could be to elicit the degree of persuasiveness of the plaintiff case in a given lawsuit and compare it to the ruling in that case. If decision-makers require a considerably higher standard of persuasion than the one formally mandated by the PER, then they would dismiss claims in which the plaintiff’s version is only slightly more persuasive than not. However, asking the same person to rate the persuasiveness of the plaintiff’s version and decide the case may prove problematic. Simon and Mahan (1971) found that when responders were first asked to estimate the probability that an accused had committed a crime and then decide whether he was guilty of committing it, they answered differently than responders who only answered the second question. To avoid this problem we used a between-subject design.

In the first three experiments reported here, we examined two separate evaluations of given scenarios. One evaluation (the scale question) was a rating of the extent to which the responder regarded the plaintiff’s version as persuasive on a scale of 0 to

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3 Note that, while the experiments described below were motivated by litigants’ loss aversion, they do not examine litigants’ behavior but rather factfinders’ decisionmaking given litigants’ loss aversion.
100, where 0 indicates that there is no doubt that the plaintiff’s version of the facts is incorrect and 100 indicates that there is no doubt that it is correct. This formulation reflects the common understanding of the legal concepts of burden of persuasion and PER. The second evaluation (the decision question) was the decision the responder would have made, had she been called upon to rule in the case: to accept the claim or to reject it. We predicted that the percentage of responders whose rating would exceed 50 on the scale question would be significantly higher than the percentage of responders who would accept the claim in the decision question.

The experiments described below were conducted in Israel in 2010-2011. While Israel is a mixed legal system, the Israeli law of evidence closely follows the Common Law tradition, a heritage of the British Mandate in Palestine-Eretz Yisrael prior to 1948. Specifically, PER is the general standard of persuasion in civil litigation in this country (Kedmi 2009, pp. 1761-67).

3.2. Experiment 1: Degree of Persuasion and Judgment: Law Students
The first experiment was designed to examine the hypothesis that the actual degree of persuasiveness required for the plaintiff to prevail in civil litigation is considerably higher than that formally mandated by the PER.

3.2.1. Participants. Three hundred and eighty seven students in the Faculty of Law of the Hebrew University of Jerusalem, 51% female and 49% male, participated in this experiment. Three hundred and sixty were LL.B. students and 27 LL.M. Approximately three-quarters of the participants (283) were advanced-years students, and the other one-quarter (104) already finished their first year of studies (they answered the questions in July 2010). Some 42% of the responders (163) had already taken the evidence law course, and 58% (224) had not.

3.2.2. Experimental Design. We employed three scenarios: Poisoning, Expropriation, and Loan (see Appendix). The poisoning scenario described a legal dispute between two farmers, in which the plaintiff claimed that his goats have been poisoned by a pesticide used by the defendant. The expropriation scenario referred to a dispute between a local authority and a real-estate company regarding the sum of compensation to be paid for the expropriation of a parcel of land. In the loan scenario, the plaintiff sued for the repayment of a loan while the defendant denied that he ever received that loan.

We used three versions of each scenario in both the scale and decision questionnaires. The three versions slightly differed from one another, making the plaintiff’s claim somewhat more persuasive in some of the versions than in others. Each responder saw a single version of a single scenario, and was asked to perform a single task, either assessing the persuasiveness of the plaintiff’s claim on a scale or deciding the case. Thus, the experiment followed a 2 (task: scale/decision) by 3 (scenario: Poisoning/Expropriation/Loan) by 3 (different versions of each scenario) between-subject design. Additionally, in the decision task the order of the options—accept or dismiss the claim—was varied between subjects. We thus used a total of 27 different questionnaires.

4 See also infra note 16 and accompanying text.
The questionnaires were posted on a website designed for controlled judgment and decision-making experiments. Responders were recruited by an e-mail message sent to students at the Faculty of Law. To encourage participation, seven responders were randomly selected to win a prize of 200 NIS each (one NIS roughly equals 0.25 US$). Responders were randomly assigned to one of the 27 questionnaires.

### 3.2.3. Results
Since there were no statistically significant differences between the different versions of each scenario, we collapsed the results of the three versions of each scenario. Similarly, order of options (accept/dismiss) in the decision questionnaires did not significantly affect the decisions; hence we report the results across the two orders. There was no significant effect for degree program (LL.B./LL.M.), year of study, or whether the responder has already studied evidence.

The mean and median ratings in the scale question, the percent of raters who gave values higher than 50, and the distribution of decisions (accept/dismiss) for each case are presented in Table 1. Across the three scenarios, the mean evaluation of the evidence as supporting the plaintiff’s case was 58.0 and the median was 60.0 on a scale of 0 to 100. Fifty-six percent of the responders gave a rating higher than 50. By contrast, only 41% of the responders in the decision condition chose to accept the claim, significantly lower than the percent of responders rating the evidence as supporting the plaintiff’s case. The percent of responders who accepted the claim is significantly lower even compared to the percent of responders whose rating was 60 or higher (41% vs. 53%, chi-square=5.198, p<.05).

### Table 1. Results of Experiment 1: Responses of Law Students (N=387)

<table>
<thead>
<tr>
<th>Scenario</th>
<th>Rating on a Scale of 0 to 100</th>
<th>Decision</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean Rating</td>
<td>Median Rating</td>
</tr>
<tr>
<td>Poisoning</td>
<td>61.2</td>
<td>65.0</td>
</tr>
<tr>
<td>Expropriation</td>
<td>54.8</td>
<td>64.0</td>
</tr>
<tr>
<td>Loan</td>
<td>58.3</td>
<td>58.0</td>
</tr>
<tr>
<td>Total</td>
<td>58.0</td>
<td>60.0</td>
</tr>
</tbody>
</table>

As can be seen in Table 1, the direction of the effect was similar for all three scenarios. A loglinear analysis of the percent of responders showing support for the plaintiff position, either by accepting the claim (in the decision questions) or by rating the evidence as supporting the claim (giving a rating of over 50 in the scale questions) by task (rating vs. decision) and scenario, yielded a significant effect of task (chi-square=10.58, p<.01) and an only marginally significant interaction of task with scenario (p=.07).

Assuming that one can meaningfully compare responses to the scale and decision questions, we examined for each scenario, what would be the cut-off point on the scale, above which the percentage of responders in the scale condition corresponds to the percentage of responders accepting the claim in the decision condition. In Poisoning, the cut-off point (the minimal rating of the top 31% of the responders in the scale question, given that 31% of the responders accepted the claim) would be 75. In

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5 One hundred and seven responders received the Poisoning scenario, 92 the Expropriation scenario, and 188 the Loan scenario.
Expropriation, the cut-off point (the minimal rating of the top 39% of the responders in the scale question) would be 66, and in Loan, the cut-off point (for 49%) would be 60.

3.3. Experiment 2: Level of Persuasion and Judgment: Lawyers

While the participants in Experiment 1 were law students who were most likely familiar with the PER, we sought to examine whether the results would be replicated with practicing lawyers who have considerable litigation experience.

3.3.1. Participants. One hundred and thirty-three lawyers, 61% female and 39% male, participated in this experiment. Their median working experience as lawyers was 5 years. On average, litigation consisted 57% of the responders’ work; in 40.5% of the cases they litigated, they represented plaintiffs rather than defendants. A call to participate in the experiment was posted on the Israeli Bar’s website, and e-mail messages were sent to lawyers in several relatively large law firms. The responders answered the questionnaires voluntarily using the same website as the students.

3.3.2. Experimental Design. Experiment 2 essentially replicated the previous study, but with practicing lawyers. As in Experiment 1, we examined two separate evaluations of given scenarios: the extent to which responders regarded the evidence as supporting the plaintiff’s case and a decision in the case. We employed the Poisoning and Expropriation scenarios used in Experiment 1. Since we found no significant differences among the different versions of each scenario in Experiment 1, Experiment 2 employed only one version of each scenario. Each responder saw a single scenario and was asked to perform a single task, either rating the persuasiveness of the plaintiff’s version on a scale of 0 to 100 or deciding whether to accept or dismiss the claim. Thus, the experiment followed a 2 (task: scale/decision) by 2 (case: Poisoning/Expropriation) between-subject design. In the decision task the order of the options, accept or reject, was varied between subjects. Responders were randomly assigned to one of the questionnaires.

3.3.3. Results. Since order in the decision questions did not significantly affect the decisions, we report the results across the two orders. The mean and median ratings in the scale question, the percent of raters who gave values higher than 50, and the distribution of decisions (accept/dismiss) for each scenario are presented in Table 2. Across the two scenarios, the mean rating of the evidence as supporting the plaintiff’s case was 63.7 and the median was 70.0 on a scale of 0 to 100. Seventy-two percent of the responders gave a rating that was higher than 50. By contrast, only 49% of the responders in the decision condition chose to accept the claim, significantly lower than the percent of responders rating the evidence as supporting the plaintiff’s case.

As can be seen in Table 2, the effect occurs for both scenarios. A loglinear analysis of the percent of responders showing support for the plaintiff position, either by accepting the claim (in the decision question) or by rating the evidence as supporting the claim (giving a rating exceeding 50 in the scale question) by task (rating/decision) and scenario (Poisoning/Expropriation), yielded a significant effect of task (chi-square=7.79, p<.01) and no significant interaction of task with scenario (p=.83). The percent of responders who accepted the claim is significantly lower even compared to the percent of responders whose rating was 60 or higher (41% vs. 69%, chi-square=5.550, p<.05).
### Table 2. Results of Experiment 2: Responses of Lawyers (N=133)\(^6\)

<table>
<thead>
<tr>
<th>Scenario</th>
<th>Rating on a Scale of 0 to 100</th>
<th>Decision</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean Rating</td>
<td>Median Rating</td>
</tr>
<tr>
<td>Poisoning</td>
<td>61.4</td>
<td>70.0</td>
</tr>
<tr>
<td>Expropriation</td>
<td>66.5</td>
<td>70.0</td>
</tr>
<tr>
<td>Total</td>
<td>63.7</td>
<td>70.0</td>
</tr>
</tbody>
</table>

Comparing the two tasks, the cut-off point on the scale, above which the percentage of responders in the scale question matched the percentage of responders accepting the claim in the decision question (47% and 50% in Poisoning and Expropriation, respectively) was 70 on a scale of 0 to 100 for both scenarios.

### 3.4. Experiment 3: Varying the Status Quo

Whether the justification for placing the burden of proof on the plaintiff lies in reducing enforcement costs or in reducing costs of error due to litigants’ loss aversion,\(^7\) one could expect that the actual standard of persuasion would be lower when a plaintiff sues for a declaratory judgment that would validate the status quo. In that case, ruling in favor of the plaintiff does not entail construction of remedies, enforcing the judgment, or even performing it. As for loss aversion, since the declaratory judgment is sought in that case to preserve the status quo, the plaintiff might view dismissal of her claim as inflicting a loss (because she might have to give up something she feels is already hers), and the defendant as obtaining a gain (because the court’s refusal to validate the status quo opens the door to changing it in her favor).

As a doctrinal matter, the weight of authority supports the proposition that the burden of proof in a declaratory-judgment action is the same as in ordinary actions (Anderson 1951, pp. 881-94; Tipp-It, Inc. v. Conboy, 596 N.W.2d 304, 309 (1999); Willcox v. Stroup (In re Willcox), 329 B.R. 554, 562 (2005); but see Hodgdon v. Campbell, 411 A.2d 667, 670 (1980)). This is also the rule in Israel (Dor v. Ramat Hadar, P.D. 60(2) 277, 294). It may nevertheless be hypothesized that if decision-makers are concerned about minimizing error costs given loss aversion, or about minimizing enforcement costs, then the actual degree of persuasion they would require to rule in favor of the plaintiff would be lower if the plaintiff seeks to maintain the status quo. Experiment 3 sought to examine this hypothesis.

#### 3.4.1. Participants.
Three hundred and twenty seven law students, 60% female and 40% male, from the Faculties of Law of the Hebrew University of Jerusalem and the Tel-Aviv University participated in the study. Ninety-six percent of the participants were advanced-years LL.B. students and only 4% first year students. The students voluntarily filled in the questionnaires in other professors’ classes.

#### 3.4.2. Experimental Design.
This experiment employed a scenario involving a dispute between the care-giver of a deceased person (the plaintiff) and the deceased’s daughter (the defendant) over a car. We generated two versions of the case, varying the status quo (SQ). In one condition, the plaintiff has already obtained the (disputed) title to the car and the car was in his possession; in the other, the plaintiff had not yet obtained

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\(^6\) Seventy one responders received the Poisoning scenario and 62 the Expropriation one.

\(^7\) See infra subsections 4.2.3 and 4.2.4.
title to the car and it was in the defendant’s possession (see Appendix). As in the previous experiments, we examined two separate evaluations of the scenario: the extent to which responders found the plaintiff’s version persuasive and their decision as to whether to accept or reject the claim. Each responder saw a single scenario and was asked to answer a single scale or decision question. Thus, the experiment followed a 2 (task: scale/decision) by 2 (posses-sion and title SQ: plaintiff/defendant) between-subject design. As in the previous experiments, in the decision task the order of the options, accept or reject, was varied between subjects. Responders were randomly assigned to one of the questionnaires.

3.4.3. Results. Since order of options in the decision condition did not significantly affect the decisions, we report the results across the two orders. The mean and median ratings in the scale question, the percent of raters who gave values higher than 50, and the distribution of decisions (accept/dismiss) for each SQ condition are presented in Table 3. Across the two conditions, the mean rating of the evidence as supporting the plaintiff’s case was 62.0 and the median 70.0. Sixty-eight percent of the responders gave a rating that was higher than 50. By contrast only 50% of the responders in the decision question chose to accept the claim, significantly lower than the percent of responders rating the evidence as supporting the plaintiff’s case (Chi-square=10.526, p=0.001), thus replicating the results of the previous studies.

<table>
<thead>
<tr>
<th>Condition</th>
<th>Rating on a Scale of 0 to 100</th>
<th>Decision</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean Rating</td>
<td>Median Rating</td>
</tr>
<tr>
<td>Plaintiff</td>
<td>60.2</td>
<td>66.0</td>
</tr>
<tr>
<td>Defendant</td>
<td>63.4</td>
<td>70.0</td>
</tr>
<tr>
<td>Total</td>
<td>62.0</td>
<td>70.0</td>
</tr>
</tbody>
</table>

To test whether the difference between the rating and decision responses differed for the two SQ conditions, we carried out a loglinear analysis of the percent of responders showing support for the plaintiff position (either by accepting the claim in the decision question or by giving a rating higher than 50 in the rating question) by task (rating vs. decision) and condition (possession and title SQ). The analysis yielded a significant effect of task (chi-square=10.07, p<.01) but intriguingly no significant interaction of task with condition (p=.52).

The percent of responders who accepted the claim is significantly lower even as compared to the percent of responders whose rating was 60 or higher (50% vs. 65%). A loglinear analysis of the percent of responders showing support for the plaintiff position, using 60 as the cutoff for the preponderance rating by task (rating/judgment) and SQ condition yielded a significant effect of task (chi-square=6.86, p<.01) and no significant interaction of task with condition (p=.74).

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8 One hundred and eighty one responders received the plaintiff-in-possession condition and 146 the defendant-in-possession condition.
9 Again, the status quo, i.e., whether the plaintiff already had possession and title to the car prior to litigation, did not significantly affect either the rating (p=.29) or the decision (p=.75).
As in the previous experiments, we calculated the cut-off point on the scale, above which the percentage of responders in the scale condition matched the percentage of responders accepting the claim in the decision task. Since there was no statistically significant difference between the two SQ conditions in either the scale or decision questionnaires, we collapsed the two. The cut-off point corresponding the 50% of responders accepting the claim was 70 on a scale of 0 to 100.

We conclude that the SQ with respect to possession and title to the car does not seem to play a role: In both SQ conditions, the percent of the responders in the decision questionnaire who chose to accept the claim is similarly lower than the percent of responders rating the evidence as supporting the plaintiff’s case.

3.5. Experiment 4: Omission vs. Commission in Judicial Decisionmaking

As further discussed in Section 4, Experiment 3 did not support the hypothesis that the high standard of persuasion required by factfinders is due to their desire to minimize enforcement costs or to minimize the total costs of erroneous decisions given litigants’ loss aversion. Experiment 4 was designed to examine an alternative hypothesis, namely that what drives factfinders’ insistence on a high standard of persuasion is their omission bias, stemming from their own loss aversion. If accepting a claim is perceived as commission and dismissing it as omission, and if in the face of uncertainty people are inclined to refrain from action, then the factfinders’ tendency would be to dismiss the claim unless the plaintiff’s version is very persuasive, regardless of whether the plaintiff seeks to alter or maintain the status quo.

To examine this hypothesis, we asked participants to envision a judge who must decide a case in which the evidence is unclear. They were then instructed to characterize the judge’s predispositions and feelings regarding the outcome of the case. In particular, we asked about features that are known to be associated with the omission bias, such as feelings of regret and satisfaction. To the extent that dismissing the claim is regarded as an omission, one should predict that the judge would be more inclined to dismiss the claim than to accept it. Furthermore, as bad outcomes of acts engender a greater feeling of regret than bad outcomes of omissions, a judge whose decision turns out to be wrong is expected to feel more regretful in the case of an acceptance than a dismissal. At the same time, as positive outcomes of action are deemed better than equivalent positive outcomes of omission, the judge is expected to be happier with a correct decision to accept a claim than with a correct decision to reject it.

3.5.1. Participants.

Forty seven students, 68% female and 32% male, from various departments at the Hebrew University of Jerusalem, participated in this experiment, using the same website as in Experiments 1 and 2. To encourage participation, four responders were randomly selected to win a 100 NIS prize.

3.5.2. Experimental Design.

All participants were presented with a short general description followed by six questions. The description was: “Imagine the following situation: In a trial conducted before a judge, several witnesses testified for each party and presented conflicting versions of the facts. The picture emerging from the testimony is not unequivocal.” In the ensuing questions, participants were asked to make assessments using a scale from 1 to 9. Question 1 read: “The more afraid the judge is of making erroneous decisions, the more he would be inclined —”; and the
scale ranged from 1 (“to dismiss the claim”) to 9 (“to accept the claim”), with 5 indicating “he will have no clear inclination either way.” The same scale was used in Question 2: “The more difficult the judge finds it to make decisions the more he would be inclined —.” Questions 3 and 4 read as follows: “If the judge would [Q. 3: accept; Q. 4: dismiss] the claim and it would turn out in retrospect that his decision was wrong, how remorseful and regretful would he feel?” The scale ranged from 1 (“to a small extent”) to 9 (“to a large extent”). The same scale was used in questions 5 and 6: “If the judge would [Q. 5: accept; Q. 6: dismiss] the claim and it would turn out in retrospect that his decision was correct, to what extent would he feel satisfaction and happiness?” The order of questions was varied between subjects, using two versions.

3.5.3. Results. Since the order of questions did not significantly affect the assessments, we collapsed the two orders. As expected, the response to Question 1 was that the more afraid a judge is of making erroneous decisions, the likelier he would be to dismiss the case: 3.08 on a scale of 1 (dismiss the claim) to 9 (accept the claim), which is significantly lower than 5 (t(46)= 6.718, p<.001). Similarly, in Question 2, the mean assessment was that the more difficulty the judge has in making decisions, the likelier he is to dismiss the case: 3.62 on the same scale, which is significantly lower than 5 (t(46)= 5.035, p<.001).

In Questions 3 and 4, responders predicted that the judge would be significantly more remorseful and regretful if it turned out that he had erroneously accepted the claim than if he had erroneously dismissed the claim: 6.83 vs. 5.96 (t(46)=2.177, p<.05). In Questions 5 and 6, responders predicted that the judge would experience significantly greater satisfaction and happiness if it turned out that he had correctly accepted the claim, than if he had correctly dismissed it: 7.32 vs. 6.62 (t(46)=2.382, p<.05).

These results are entirely compatible with the hypotheses that factfinders view making a correct decision as a gain and an erroneous decision as a loss, and accepting a claim as an act and dismissing it as an omission.

3.6. Methodological and Other Concerns
Before we turn to an analysis of the results and their implications, we would like to address possible concerns that may be raised about the experiments.

3.6.1. Participants. Unlike a number of other studies reported in the literature, we did not examine the responses of laypersons, even though laypersons serve on juries in civil cases. We chose to use legally trained responders in Experiments 1-3 for two reasons. First, with the notable exception of the United States (and to a lesser extent Canada), legal systems throughout the world do not use juries in civil litigation at all, or limit their use to extraordinary cases (Andrews 2003, pp. 775-76; Lilly 2001; Galanter 2004). Second, and equally important, Simon and Mahan (1971, pp. 325, 327-28) have demonstrated that laypersons’ understanding of the PER markedly differs from its accepted legal meaning. In their study, while most judges correctly stated that the PER requires that the plaintiff establish her case with a probability that is slightly higher than 0.5, the mean and median probability indicated by laypersons hovered around 0.75. If one is interested in exposing a possible gap between the
accepted legal meaning of the PER and factfinders’ actual decisions, the relevant group to be studied consists of people who are familiar with the legal rule.\textsuperscript{10}

The responders in the first three experiments were thus either practicing lawyers or advanced-years law students. About one-quarter of the students had finished their first year of studies but had not yet started their second; their answers did not significantly differ from those of the other responders. While it would have been preferable to have judges as responders, this does not appear to be a crucial flaw. Given the impracticability of conducting experiments with judges in Israel, the responses of subjects with legal training, and in particular lawyers with considerable litigation experience, seem to be a good proxy for judges’ responses.

To make sure that the students were familiar with the burden of proof in civil litigation, we conducted a separate survey among 65 students who had finished their first year. Almost all (63 out of 65) accurately described the standard of proof in criminal proceedings and 82\% (53 out of 65) gave a precise description of the PER, including the correct probabilistic description of “above 50\%.”\textsuperscript{11} Since tort law, civil procedure, and evidence law are second- and third-year courses at the Hebrew University (where both Experiment 1 and the survey were conducted), there is every reason to believe that advanced students (who constituted the great majority of participants in experiments 1 and 3) would be even better acquainted with the rule.\textsuperscript{12}

The students’ answers were considerably closer to the legally accepted meaning of PER than the answers given by American judges in one survey, where only 55\% of the judges described PER as requiring a probability slightly higher than 0.5, and 14\% indicated a probability of .75 or higher (Simon and Mahan 1971, pp. 325, 327).

Like the first three experiments, Experiment 4 sought to shed light on judges’ decisions. Since it focused on the psychological dimensions of judicial decisionmaking rather than their legal content, participation in that experiment was not restricted to law students.

3.6.2. Probabilistic Reasoning in Judicial Factfinding. It may be argued that the very assumption that judicial factfinders reason, or are able to reason, in probabilistic terms is unrealistic (Vars 2010, pp. 18–24). The short answer to this concern is that nothing in our experiments rested on this assumption. Responders in the scale questions were not asked to assess the probability that the plaintiff’s version is correct, but rather to indicate how persuasive or convincing his version seemed to them. The fact that in two out of four scenarios used in experiments 1-3, one of several pieces of evidence (the expert testimony), used probabilistic terms or its reliability was described in such terms, does not entail that responders thought of or should have thought of the

\textsuperscript{10} Cf. Wells (1992, pp. 743–46), who found that answers to probability assessments and decision questions given by psychology students, Master of Business Administration students, and practicing trial judges followed very similar patterns.

\textsuperscript{11} In addition to a verbal description, students were asked to answer the following multiple-choice question: “Assuming it is possible to describe the standard of proof in probabilistic terms, Israeli law requires that the plaintiff in a civil action prove his case with a probability of” with the five options being above 40\%, above 50\%, above 60\%, above 70\%, and above 95\%.

\textsuperscript{12} Some participants might have taken courses in economics, behavioral economics, or decision theory, yet given the type of questions and the between-subject design of the experiments, their attendance at these courses should not have affected their answers.
question in probabilistic terms. Certainly no reference to probabilities was made in the decision questions.

It may be worth mentioning in this regard that the common legal term for “preponderance of the evidence” in Hebrew is ma’azan ha’histabruyot, literally “the balance of probabilities.” More than its American counterpart, the Hebrew term implies that the plaintiff must establish her case with a probability exceeding 0.5 for it to be accepted.

3.6.3. The Wells Effect; Evidential Weight, and Case-Specific Evidence. There is ample experimental support for the proposition that factfinders are reluctant to accept legal claims resting on naked statistical evidence. Thus, the very fact that 80% of the busses in a certain town are operated by a certain firm is not a sufficient basis for finding that firm liable for an accident caused by a bus, absent case-specific evidence (Wells 1992; Niedermeier et al. 1999; Heller 2006). Decision-makers may sensibly reject a claim even if the probability that the plaintiff’s version is correct passes the required threshold, if assessment of this probability rests on too little information or on general, non-case-specific evidence (Cohen 1977; Kaye 1987; Stein 2005, pp. 40-56, 80-106). A court may refuse to accept a claim based on slim evidentiary basis also in order to incentivize litigants to make more of an effort to produce the best evidence (Nance [1988, 1998]; Posner 1997, pp. 1508-10).

While the evidence in two of the four scenarios used in our experiments, Poisoning and Car, included expert testimonies expressed in part in probabilistic terms, none of the scenarios was described in a way that should have raised the concern of naked statistical evidence. In all four scenarios, participants were provided with rather detailed, thick descriptions of the disagreement and with quite many pieces of case-specific evidence supporting or disproving the two parties’ claims (see Appendix). Moreover, in Car, the 70% reliability of the expert’s computer program should not have been perceived as pure statistical evidence, as it did not resemble the proportion-of-traffic version of the Wells experiment but rather the weigh-station-attendant version, which did not produce the Wells effect (Wells 1992).13

3.6.4. Non-Evidentiary Reasons for Dismissing the Claim. The primary conclusion we wish to draw from our results is that the actual standard of persuasion in civil litigation is most likely considerably higher than what the PER formally requires. One has to concede, however, that this is not the only conceivable explanation for our findings. Thus, it may be that in Expropriation, some responders dislike real-estate companies and would rule against them regardless of the persuasiveness of their claims. This line of reasoning is not compelling. Just as some responders may dislike real-estate companies, others may oppose any use of the power of eminent domain, and would thus rule in favor of the private owner, regardless of the evidence. The variety of scenarios used in the first three experiments and the basic equality between the litigants in these experiments would seem to negate this concern.14

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13 Wells found that “for evidence to affect decisions, the evidence must do more than affect people’s perceptions about the probabilities associated with the ultimate fact; people seem to require that suppositions regarding the ultimate fact affect their perceptions of the truth or falsity of the evidence” (Wells 1992, p. 739). This feature is common to the weigh-station-attendant version of his experiment and to our Car scenario. See also infra note 17.

14 In each scenario, one could reasonably assume that the litigants were equally wealthy and sophisticated (two farmers, a real-estate company and a local authority, a businessperson and a lawyer, and two individuals). This
Bearing in mind these concerns, we maintain that the experimental findings have interesting implications.\(^{15}\) We now turn to analyze these findings and their ramifications.

### 4. Analysis and Implications

#### 4.1. Main Effect

The primary goal of our experiments was to examine whether, notwithstanding the legal formulation of the PER, the actual standard of persuasion required in civil disputes is indeed higher than 51%. Subject to the methodological caveats discussed above, the first three experiments clearly demonstrated this phenomenon. While the mean rating of the persuasiveness of the plaintiff claim across all experiments was 60.4 on a scale of 0 to 100, the median was 66.0, and the percentage of ratings exceeding 50 was 63%,\(^{16}\) the percentage of decisions in favor of the plaintiff was 46% only.\(^{17}\) The cut-off points on the scale, above which the percentage of responders in the scale question matched the percentage of responders accepting the claim in the decision question, were 75 and 70 in Poisoning (for students and lawyers, respectively), 66 and 70 in Expropriation (for students and lawyers, respectively), 60 in Loan, and 70 in Car.

This main effect lends support to the claim that the standard of persuasion implemented by legal factfinders is considerably higher than the generally accepted

\(^{15}\) An additional concern might be that in Poisoning and Car, the numbers mentioned in the expert testimonies (ranging from 60 to 70 percent) might have affected the responders’ rating of the persuasiveness of the plaintiff’s version. Even if this has been the case, this is not a major concern. First, the point of the experiments lay in the comparison of the scale and decision questions. Since the same scenarios were used in both conditions, the extent that the numerical information affected those responders answering the scale question, it could have similarly affected the responders in the decision questions. Second, we do not argue that one can derive any specific standard of proof from our experiments. We only propose that, in all probability, the standard of persuasion actually required for accepting a claim is considerably higher than the accepted legal meaning of the PER.

\(^{16}\) Note, that our formulation of the scale questions followed the common understanding of the PER, namely as requiring that the plaintiff’s version be more probable than not (McCormick 2006, pp. 483-85; Mueller and Kirkpatrick 1995, p. 133). Some scholars have advocated an alternative interpretation of the PER, requiring that the plaintiff’s version be more probable than the defendant’s (Allen 1994b; Posner 1999, p. 1513; Allen and Leiter 2001; Nance 2001). If the relative persuasiveness interpretation of the PER is preferred, the difference between the answers to the scale and decision questions could arguably be even greater. For instance, assume that a responder concluded that there is a 0.45 probability that the plaintiff’s version is correct, a 0.15 probability that the defendant’s version is correct, and a 0.4 probability that there is a third explanation for the evidence produced by the litigants. According to the interpretation of the PER implied in our experiments, the response should be 45, while according to the relative-persuasiveness interpretation, it should presumably be 75, as the plaintiff’s version is three times more persuasive than the defendant’s.

\(^{17}\) Our findings are consistent with the results of the weigh-station-attendant version of experiment 1 in Well’s seminal study (1992, pp. 741-42). In the volume-of-traffic (naked statistical evidence) version of this experiment, 85% of participants reported a 0.8 probability that the blue-bus company was responsible for the accident, yet only 8.2% accepted the claim. In contrast, in the weigh-station version (where the plaintiff based her claim on the testimony of a weigh-station attendant whose records indicated that a blue bus was weighed in the nearby station just before the accident, yet it was established that these records were wrong 20% of the time), responders were far more inclined to accept the claim. In that condition, 67.1% of the responders accepted the claim. For our purposes, the most striking finding is that although 87.5 of the responders in the weigh-station condition reported a probability higher than 0.5, only 67.1% issued a judgment for the plaintiff, meaning that even absent the Wells effect, p>0.5 is not enough to accept a claim. Wells did not report the percentage of responders indicating a probability exceeding 0.5 in his other experiments.
meaning of the PER. In what follows, we first examine to what extent these findings are compatible with different theories of burden of proof and the PER. We then discuss the normative question of whether litigants’ loss aversion justifies raising the standard of persuasion in civil litigation.

4.2. Explanations
4.2.1. The Principle of Civility. It has been argued that whenever a litigant asserts that her opponent infringed a serious norm (such as intentionally or negligently harming her), the assumption that people act in accordance with serious social norms requires that the burden of proof be placed on the litigant making these allegations (Nance 1994). Inasmuch as factfinders are influenced by this principle, one would expect that responders would be more reluctant to accept the plaintiff’s claim in Poisoning and Loan than in Expropriation and Car. In Poisoning, accepting the claim implies that the defendant negligently or recklessly caused the death of the plaintiff’s goats; in Loan it entails that the defendant deliberately breached his duty to repay the loan. In contrast, the plaintiff in Expropriation neither challenged the validity of nor the justification for the expropriation, and the claim might have stemmed from a good-faith disagreement about the scope of compensation. In Car, the plaintiff did not attribute any norm infringement to the defendant.

This is not, however, what we found in the experiments. In Loan, there was a 3% gap between the percentage of responders whose rating in the scale question was higher than 50 (52%) and the percentage of those who ruled in favor of the plaintiff in the decision question (49%). This gap is considerably smaller than any of the corresponding gaps in the other scenarios and experiments (which ranged from 16% to 32%). This result is incompatible with the civility principle, because the immorality attributed to the defendant in Loan was appreciably greater than in any of the other scenarios, and thus responders should have been particularly reluctant to accept the claim. Likewise, the manifest reluctance to accept the claim in Expropriation (16% gap in Experiment 1 and 25% in Experiment 2) is incompatible with the civility principle, as no immorality was attributable to the defendant municipality in this scenario.

To be sure, our findings do not refute the principle of civility as a normative argument. Moreover, the scenarios we used differed from one another on many dimensions, the seriousness of the alleged norm-infringement by the defendant being only one. The only conclusion we can confidently draw from this comparison is that the principle of civility does not explain our findings.

4.2.2. Discouraging Unmeritorious Lawsuits. Comparable observations may be made about the attempt to explain our findings on the basis of factfinders’ desire to discourage unmeritorious claims, thereby saving the parties and the courts the costs of litigation (Winter 1971, p. 337; Lee 1997, pp. 14-15). It is unlikely that such long-term effects of dismissing the claim occurred to the responders in the decision condition. Moreover, the gap between the answers to the scale and decision questions indicate that there are lawsuits in which claims are dismissed even though the plaintiff’s
version is assessed as being more probable than not. Such suits can hardly be described as frivolous or meritless.\textsuperscript{18}

4.2.3. Reducing Enforcement Costs. According to the enforcement-costs argument, when there is uncertainty regarding the merits of the plaintiff’s claim, efficiency requires the court to avoid the ex post costs of enforcing a judgment in favor of the plaintiff (Lee 1997, pp. 12-13; Posner 2007, p. 647). The dismissal of lawsuits also saves the costs of constructing and calculating remedies and the transaction costs associated with performance (Lee 1997, pp. 12-13). While this is a cogent argument, its weight varies from one case to another, as it depends on the costs of calculating different remedies, enforcing different judgments, and performing the court’s orders.

The results of Experiment 1, Experiment 2, and the defendant-in-possession condition in Experiment 3 are compatible with the desire to save on enforcement costs unless the evidence supporting the plaintiff’s case is highly persuasive. In all three, dismissing the claim saves the costs of constructing and calculating remedies, enforcement costs, and the transaction costs associated with performance. This consideration does not, however, explain the results in the plaintiff-in-possession condition of Experiment 3, which followed the same pattern, even though validating the status quo entailed no enforcement costs of any sort.

4.2.4. Minimizing Costs of Judicial Error Given Litigants’ Loss Aversion. It is commonly assumed that the disutility of an erroneous judgment is typically similar for defendants and plaintiffs (In re Winship 397 U.S. 358, 371 (1970) (Harlan J. Concurring); Finkelstein 1978, p. 67; Kaye 1980, p. 608; Orloff & Stedinger 1983, p. 1168; Allen 1994a, pp. 633-34; Posner 1997, p. 1504; Friedman 1997a, p. 278; Stein 2005, p. 148). As one commentator put it, “civil cases are the paradigm for symmetrical error costs” (Lee 1997, p. 25).\textsuperscript{19} Casting doubt on this assumption, Richard Posner has argued that the plaintiff should bear the burden of proof because of the marginal utility of wealth. Assuming that plaintiffs and defendants have a similar level of wealth on average, the principle of diminishing marginal utility implies that the loss to the deserving plaintiff who loses her case is slightly smaller than the loss to the deserving defendant who loses (Posner 2007, p. 647).

This argument is hardly persuasive. In many contexts—including consumer, employee, and product-liability claims—plaintiffs are on average less affluent than defendants, yet they are the ones to bear the burden of persuasion (Kaye 1982, p. 496 n.39). Moreover, this argument does not hold in commercial litigation between two risk-neutral firms, where the marginal utility of money is not diminishing, nor when the relief sought by the plaintiff would not affect the parties’ wealth. Finally, even if plaintiffs and defendants are equally affluent on average, only rarely are they equally affluent in a particular litigation. This means that in half, or almost half, of the cases,\textsuperscript{18} Another weakness of enforcement costs as justification for placing the burden of proof on the plaintiff is that the costs of initiating a lawsuit are rather substantial, especially in legal systems where the winner is not entitled to reimbursement of her litigation costs. It is not clear that an additional disincentive is necessary to discourage frivolous claims. Moreover, while placing the burden of persuasion on the plaintiff discourages unmeritorious claims, it may concomitantly encourage unmeritorious defenses (Winter 1971, p. 337).

\textsuperscript{19} But see Stein 1995, p. 343. Stein maintains that imposing the burden of proof on the plaintiff “would be optimal also because taking is generally perceived as more harmful than not giving.” While Stein goes on to argue that “[t]his perception can be justified by the diminishing utility of wealth,” he also refers to Tversky and Kahneman’s theory.
the loss to deserving plaintiffs is larger than the loss to deserving defendants. It is therefore implausible that such contingent assessments could underlie the burden of proof rule in cases of tie.

While we doubt the relevance of the decreasing marginal utility of wealth, we share Posner’s rejection of the assumption of symmetrical error costs in civil litigation. This asymmetry is due to a combination of loss aversion and the different ways plaintiffs and defendants typically frame the outcomes of litigation: Since plaintiffs tend to frame the outcomes of litigation as belonging to the domain of losses, and since losses loom larger than gains, erring on the side of the defendant is less detrimental to the plaintiff’s welfare than erring on the side of the plaintiff is detrimental to the defendant’s. Unlike the diminishing marginal utility, loss aversion does not depend on the relative affluence of the parties. It may well be the case that the detrimental effect of a loss on the defendant’s welfare would be greater than the effect of a similar unattained gain on the plaintiff’s welfare, even if the defendant is wealthier than the plaintiff.

Explaining the experimental findings on the basis of litigants’ loss aversion is, however, problematic. To begin with, the loss-aversion theory seems to fair no better than the enforcement-costs theory. While loss aversion can explain the results of Experiment 1, Experiment 2, and the defendant-in-possession condition in Experiment 3, it is arguably inconsistent with the results of the plaintiff-in-possession condition in Experiment 3. Dismissal of the case in the plaintiff-in-possession condition is likely framed as inflicting a loss on the plaintiff (because he might have to give up something he feels is already his) and conferring a gain upon the defendant (because the court’s refusal to validate the status quo opens the door to changing it in her favor). Hence, if the responders had been motivated by litigants’ loss aversion, presumably they would have been far less reluctant to accept the claim in this condition. In fact, no statistically significant difference was found between the two conditions.

It is not clear, however, that the participants actually framed the decision that way. The dismissal of a claim for declaratory judgment which would have validated the status quo does not, in and of itself, change the status quo. In our scenario, if the plaintiff has consistently refused to transfer the title and hand over the car, the defendant would have to attain a court order that would compel him to do so. The effect of the dismissal of the claim for declaratory judgment on the subsequent action depends on the basis for the dismissal. Under Israeli law, only an original judgment containing “a positive finding” precludes relitigation of a disputed issue (Saltzman 1991, pp. 190-92). Thus, in the plaintiff-in-possession condition, the original judgment would have a collateral effect against the original plaintiff only if the court held that his version was false. If the claim was dismissed on the grounds that the plaintiff had failed to carry the burden of proof (without finding that his version was false), the issue may be relitigated. In the ensuing litigation, the original defendant—who is now the plaintiff—would carry the burden of persuasion. To the extent that responders followed this line of thought, or framed the decision task similarly in the two conditions for any other reason, the results are not necessarily inconsistent with the loss-aversion rationale for a high standard of persuasion. Arguably, the responders might have framed the two conditions similarly for any of the following reasons: (a) the fact that the legitimacy of the plaintiff’s possession and title were contested, (b) the
relatively short time that had elapsed since the death of Mr. Cohen, and (c) the fact that
the plaintiff had been using the car previously. More speculatively, perhaps the
perceived reference point is not the status quo regarding the car, but rather the
preexisting legal state of affairs. Under this interpretation, dismissing the case possibly
means maintaining the legal uncertainty and accepting the claim means altering the
status quo in favor of the plaintiff, whether or not the car was already in his
possession.

4.2.5. Second-Order Considerations. In response to the results of the plaintiff-in-
possession condition of Experiment 3, proponents of the enforcement-costs and loss-
aversion theories might argue that these results possibly reflect second-order
considerations. Perhaps the line between declaratory judgments that validate the status
quo and those that are likely to eventually change the status quo is too blurry to
warrant different standards of persuasion. Different standards may also induce
plaintiffs to strategically seek a declaratory judgment even when their ultimate goal is
to change the status quo, thus burdening the defendant and the court system with
additional litigation. Another possibility is that claims for validating the status quo are
so rare that it would be unduly costly to design special evidentiary rules or practices
for them. This rarity may stem from potential plaintiffs’ lack of interest in filing
lawsuits when they are pleased with the status quo and from courts’ reluctance to
allow such lawsuits (as the award of declaratory judgment is in general discretionary).

One may, however, doubt that these second-order considerations can explain the
findings of Experiment 3. The lines are quite clear between declaratory and other
judgments and between declaratory judgments validating the status quo and those
recognizing a right to obtain something from the defendant. The concern regarding
strategic use of actions for declaratory judgments may also be addressed through
courts’ discretion not to allow such actions. Moreover, inasmuch as we look for an
explanation for the findings, it is highly unlikely that the law students participating in
Experiment 3 considered these complex factors. We doubt that even judges do.

4.2.6. Factfinders’ Omission Bias. Having rejected the principle of civility and the
deterrence of unmeritorious claims as plausible explanations for our findings, and
having cast doubt on the role of enforcement costs, litigants’ loss aversion, and
second-order considerations, Experiment 4 examined yet another explanation, namely
the responders’ own omission bias. If accepting a claim is perceived as commission
and dismissing it as omission, and if in the face of uncertainty people are inclined to
refrain from action, then their tendency should be to dismiss the claim unless the
plaintiff’s version is truly persuasive, regardless of whether the plaintiff seeks to alter
or maintain the status quo. 20

The omission-bias explanation rests on several nontrivial premises and
assumptions. First is that the factfinder perceives a correct decision as a gain and an
incorrect one as a loss. The factfinder’s perception is different from that of the
litigants. Each litigant focuses on the judgment’s effect on her own interests. The
plaintiff may frame dismissal of her claim either as not gaining or as losing, but never
as gaining or not losing; for the defendant, a dismissal is either a gain or an avoided

20 Cf. Friedman 1997b, p. 1970 (suggesting that in cases of evidentiary tie, the defendant prevails “perhaps on
appropriate grounds of inertia”).
loss, but not a loss or an unobtained gain. For both parties, the characterization of the result does not necessarily depend on the merits of the claim or the defense. In contrast, the factfinder always causes one party to lose/not gain, and the other party to gain/not lose. It thus stands to reason that from the factfinder’s perspective, a correct decision would be perceived as a gain, and an incorrect one as a loss.

The second premise is that issuing a judgment in favor of the plaintiff, whether ordering an action or validating the status quo, is perceived as a commission, and refusing to issue such a judgment as an omission. Third, when the omission bias and the status quo bias pull in opposite directions—as is (arguably) the case when dismissing a claim to maintain the status quo—decision-makers are likely to refrain from action, and hence to dismiss the claim. The fourth assumption is that the omission bias characterizes not only self-regarding decisions, but also decisions affecting the well-being of others. The fifth and last premise is that these inclinations characterize not only decisions whose beneficial or harmful outcomes are likely to become evident at some point in the future, but also decisions whose desirability or correctness may never become known to the decision-maker.

As detailed in subsection 2.2, the last three assertions have been substantiated by a considerable body of research. Omission bias may be expected to have a stronger effect than the status quo bias (Ritov and Baron 1992; Schweitzer 1994); omission bias is manifest in other-regarding decisions (Ritov and Baron 1990; Vars 1996; Zikmund-Fisher et al. 2006; Moshinsky and Bar-Hillel 2010); and omission bias is present even when the decision-maker is unlikely to learn of the outcomes of the decision (Ritov and Baron 1995). The findings of Experiment 4 lend support for the remaining two propositions, namely (a) that factfinders strive to make accurate decisions and avoid inaccurate ones, and (b) that accepting a claim is more likely to be perceived as a commission, and dismissing a claim as an omission. Factfinders’ omission bias, a result of their own loss aversion, seems to explain their tendency to employ a standard of persuasion that is considerably higher than the one formally mandated by the PER. In the great majority of cases, factfinders’ omission bias pulls in the same direction as litigants’ loss aversion (and enforcement costs), both explaining the tendency to require a higher standard of persuasion. When the two conflicts, Experiment 3 suggests that factfinders’ omission bias has a stronger effect.

4.3. Normative Implications?

Even if minimization of the costs of judicial error given litigants’ loss aversion does not explain the results of our experimental findings, it may still justify raising the general standard of persuasion in ordinary civil proceedings, where accepting the claim almost always changes the status quo.\(^{21}\) Indeed, the argument that the standard of persuasion should be raised due to the prevalence of loss aversion is compatible with the basic cost-benefit analysis of the standard of persuasion, provided the focus is on minimizing the direct costs of errors in judicial fact-finding. Nonetheless, other welfarist and non-welfarist considerations militate against this suggestion (while others corroborate it). To begin with, efficiency calls for minimizing the total costs of adjudication and of judicial errors, not only the latter (Lee 1997; Posner 1999). Inasmuch as placing a heavier burden of persuasion on plaintiffs would induce them to

\(^{21}\) On the intricate relationship between explanations and justifications, see generally Lenman (2009).
devote more resources to establishing their case, raising the standard of proof might prove to be inefficient. At the same time, this outcome may be offset by the greater deterrence of unmeritorious and borderline lawsuits (cf. Vars 2010, pp. 33-34, 36-38) and by reducing the adjudication costs for defendants. Raising the standard of proof is compatible with the goal of reducing the costs of judicial administration and enforcement, because it is likely to decrease the number of successful lawsuits requiring enforcement.

Another concern relates to the generalizability of loss aversion in the context of civil litigation. Litigants plausibly display varying degrees of loss aversion, and some are not loss averse at all. Specifically, inasmuch as loss aversion is an irrational bias, one could expect large firms and governmental bodies, managed by sophisticated professionals, to be considerably less loss averse than laypersons. On the one hand, there is a good deal of support for the proposition that loss aversion is characteristic of experienced decision-makers, including businesspeople (McNeil et al. 1982; Olsen 1997; Coval and Shumway 2005; Shapira and Venezia 2001; but see List 2004). In fact, some studies indicate that professionals display greater loss aversion than laypersons (Haigh and List 2005; Bokhari and Geltner 2011), and it is not clear that this inclination is irrational. If reference effects shape the experienced value of outcomes, then it is rational to take these effects into account (Fischer et al. 1986, pp. 1082-83; Rubinstein 2006, pp. 107-11; Jolls and Sunstein 2006, pp. 220).

On the other hand, sophisticated repeat players can consider the outcomes of many claims together, rather than one at a time, thus displaying less loss aversion (cf. Kahneman and Lovallo 1993). Specifically, in many lawsuits (particularly tort claims), the defendant (or one of the defendants) is an insurance company. It has been experimentally shown that in assessing settlement offers, the choices made by insurance professionals are far more consistent with rational-choice theory than those made by laypersons, and that the insurance professionals are less susceptible to framing effects (Guthrie and Rachlinski 2006, pp. 2033-42). Inasmuch as this is true, then when the plaintiff is an unsophisticated person, such as an employee or a consumer, and the defendant is a sophisticated repeat player; as well as when both litigants are large, sophisticated entities, there is no justification for raising the standard of persuasion.

Broadening our perspective, a higher standard of persuasion necessarily leads to dismissing a larger number of meritorious lawsuits and discourages the filing of such suits in the first place. This will reduce the enforcement and deterrence effect of substantive legal norms ex ante—the primary goal of the civil justice system from an economic-efficiency perspective. Once ex ante incentives are taken into account, not only raising the standard of persuasion above $p>0.5$ may be unwarranted, arguably conditioning recovery on any threshold probability rule is suboptimal (cf. Shavell 1987, pp. 115-18). Depending on the circumstances, raising the standard of proof may further aggravate the distortionary effect of evidence law on actors’ primary behavior (Parchomovsky and Stein 2010; cf. Vars 2010, pp. 16-18). Finally, discouragement of

22 Taking into account the firm owners, who are indirectly affected by the court’s decision, complicates the picture. The owners may be firms or individuals and their investments may be diversified or concentrated.

23 On the possible effects of burden of proof rules on people’s primary activity, see, e.g., Sanchirico 2008
meritorious claims may also have undesirable distributive effect if the underprivileged cannot effectively protect their rights outside of the court system.\textsuperscript{24}

From a different angle, if the extant rules of burden of proof rest on the notion that the law should treat plaintiffs and defendants with equal respect,\textsuperscript{25} then raising the general standard of proof might be incompatible with Kantian morality. In response, equal respect for plaintiffs and defendants may require rules that will minimize the cost of error in indeterminate cases, taking into account litigants’ loss aversion. Raising the standard of proof is also expected to increase the net number of incorrect judicial decisions, thus adversely affecting the pursuit of truth. On the other hand, depending on the severity of the alleged infringement of a serious social norm by the defendant, raising the standard of proof may be compatible with the principle of civility discussed above.

In sum, while litigants’ typical loss aversion does not provide an unequivocal justification for raising the standard of persuasion in civil litigation, it is nevertheless an important factor that must be taken into account along with other concerns.

5. Burden of Proof: A Tiebreaker or a Reference Point?

Thus far, we investigated the effect of such psychological phenomena as loss aversion and omission bias on the design, interpretation, and implementation of the doctrines of burden and standard of proof. This section discusses the complementary effect of burden of proof on factfinders’ perceptions and decisions. Experimental studies have established that the perceived reference point—determining what changes are viewed as gains or losses—is sometimes unfixed and even manipulable (Tversky and Kahneman [1981, 1986]; Ritov and Baron 1992; Kühberger 1998; Moshinsky and Bar-Hillel 2010). Specifically, it has been demonstrated that legal norms may set the pertinent baseline for people who are subject to those norms, thereby affecting their behavior (Abadie and Gay 2006; Rachlinski and Jourden 1998; Korobkin 1998). The relationship between people’s perceptions and behavior and the law is thus bidirectional. The law not only reflects people’s perceptions, but to some extent also shapes them.

There is no reason to assume that the psychology of judges and other factfinders is fundamentally different from that of other people (Prentice and Koehler 2003, pp. 638-39; Guthrie and George 2005, pp. 374-85), and indeed some studies have demonstrated that it is not (Guthrie, Rachlinski, and Wistrich 2001). It thus stands to reason that legal norms impact judicial decisions not only through their direct and explicit content, but also through their more subtle effect on the way judges (and juries) frame the pertinent issues. This proposition bears on the very notion and the actual impact of burden of proof.

\textsuperscript{24} Another factor that may affect cost-benefit analysis of the standard of proof is the baseline distribution of meritorious vs. meritless claims. When discussing the general standard of proof, one may assume an equal distribution because clear-cut cases are usually settled without trial (Priest and Klein 1984; Lee 1997, p. 28).

\textsuperscript{25} According to the equality principle, which rests on the notion that the law should treat litigants with equal concern and respect, the risk of error should be equally allocated between the parties (Stein 2005, p. 216). Thus, each party bears the risk of error with regard to establishing the facts that benefit her: The plaintiff bears the burden of persuasion regarding the facts necessary to make out her case and the defendant bears the burden regarding her affirmative defenses (Stein 2005, pp. 219-25). A conspicuous difficulty with this explanation is that the law places the burden regarding most facts on the plaintiff (McCormick 2006, p. 474).
According to common wisdom, the only function burden of proof plays in civil cases is to resolve ties (see, e.g., Winter 1971, p. 339; Schmalbeck and Myers 1986, p. 997; Lee 1997, pp. 11, 16; Friedman 1997b, p. 1970; Stein 1998, p. 319; Johnson 1999, pp. 438-39, 444-46). If this were true, the burden of proof would only be significant in cases of insufficient evidence. Whenever the parties present a sufficient amount of evidence, burden of persuasion would play a role “only when the evidence is in perfect equipoise, in other words (since perfect equipoise is chimerical), virtually never” (Johnson 1999, p. 438). Why, then, does burden of proof attract so much doctrinal and theoretical interest, and why do legislators and courts devote time and energy to promulgating various rules that shift the burden of proof from one party to another?

One answer is that the burden of persuasion is often associated with the burden of producing evidence, and the latter does significantly affect outcomes whenever neither party has access to good evidence (Allen 1994a, pp. 639-40). A more direct and no less important answer is that evidentiary presumptions and the burden of persuasion are not mere tiebreakers. They affect factfinding even when there is sufficient evidence by establishing a reference point. As Karl Llewellyn observed 75 years ago, “burden of proof is more than burden of proof; it also indicates base-lines for judging proof, when offered” (Llewellyn 1937, p. 385 n.114; cf. Zamir 1997, pp. 1736-38).

Unless the burden is discharged, the legal default assumption is that the alleged fact does not exist. The party carrying the burden of proof thus has to overcome the default effect created by this rule. This understanding of the burden of proof is compatible with the findings of our experiments.

6. CONCLUSION
The experimental findings reported here shed new light on the burden of proof in civil litigation and specifically on the actual meaning of the PER. As a positive matter, the standard of proof the plaintiff must meet in order to prevail is considerably higher than the one presumably mandated by the PER. While this high standard of proof apparently falls in line with some of the justifications for placing the burden of proof on the plaintiff, including reducing enforcement costs and minimizing the total costs of judicial error given litigants’ loss aversion, our experiments do not lend support to the hypothesis that these concerns actually motivate factfinders who dismiss claims unless the plaintiff’s version is highly persuasive. The only explanation positively supported by our experimental results is the factfinders’ own omission bias, due to their own loss aversion.

These intriguing results do not yield direct normative conclusions. The advantage of minimizing the total costs of judicial errors, coupled with the documented phenomenon of loss aversion and the common framing of litigation outcomes by plaintiffs and defendants, would seem to justify setting the standard of persuasion at a level comparable to the one found in our experiments. However, numerous conflicting considerations, including the effect of burden of proof on primary, ex ante behavior, the unequal distribution of loss aversion among litigants, and the pursuit of truth, militate against this conclusion. The main contribution of our study to the normative deliberation thus lies in the introduction of an important factor, heretofore largely overlooked.
Finally, the interrelated psychological phenomena of loss aversion and the default effect elucidate the very meaning of burden of proof: Burden of proof is not merely a tiebreaker; rather, it sets a reference point for judging evidence and hence is likely to play an important role in determining the final outcome of the case.

APPENDIX

Experiments 1 and 2: Poisoning

Suppose that you are a judge trying a lawsuit for 200,000 NIS in damages, filed by a farm owner against his neighbor. The farm owner claims that several dozen of his goats died from poisoning after grazing in the farm’s grazing field bordering his neighbor’s land. According to the veterinary examination, there is a [sixty/sixty five/seventy] percent probability that the poisoning was caused by a toxin contained in a pesticide used to spray fruit trees, and a [forty/thirty five/thirty] percent probability that the goats died from a similar toxin contained in a substance used for disinfecting goat houses. The neighbor owns an adjoining orchard, and thus—the plaintiff argues—the most plausible explanation for the goats’ death is that the wind carried the pesticide to the field where his goats graze, and consequently, the goats that ate the grass were poisoned. The plaintiff testified that he did not use the suspected disinfectant in his goat house, and that in any case he had not disinfected the goat house during the past month. The plaintiff further testified that in the week prior to the poisoning, there were strong west winds that could have carried the pesticide from the neighbor’s orchard to his land.

In response, the defendant did not deny that he sprayed his orchard, but testified that he sprayed the fruit trees in the early morning hours, when the breeze was very gentle. The defendant raised the possibility that one of the plaintiff’s employees used the disinfectant without the latter’s knowledge, or that perhaps the goats trespassed into his orchard, eating the fruits hanging from the low branches (although he testified that he had found no clear evidence for such trespass into his land, beyond the very fact that several dozens goats died of poisoning). Assume that if the goats were poisoned because they trespassed into the neighbor’s land and ate his fruit, he is not liable for their being poisoned.

Half of the responders were presented with the following scale question:

To what extent does the plaintiff’s version sound convincing to you? Please specify a number between 0 and 100, where 0 indicates that there is no doubt that the plaintiff’s version is incorrect and 100 that there is no doubt that it is correct.

The other half were presented with the following decision question:

How would you decide the case? Please mark one of the following answers:

___ I would rule in favor of the plaintiff and order the defendant to pay the sum claimed.

26 While Experiment 1 used all three versions of these probabilities, Experiment 2 used the seventy/thirty percent version only.
Experiments 1 and 2: Expropriation
Suppose that you are a judge trying a lawsuit filed by a real-estate company against a local authority for damages for the expropriation of a 4-dunam parcel. It is undisputed that the expropriation was executed according to the legal requirements, following the completion of all zoning and publication procedures, and that the land is actually required for the creation of a park. However, the litigants disagree about the optimal potential use of the land, had it not been expropriated, and hence its market value at the relevant time (under the law, damages are calculated according to the land’s value had it been used for its optimal potential purpose). The local authority has already paid the company one million dollars, and the disagreement pertains to the question of whether it should pay an additional sum of one million dollars. According to the opinion of the land appraiser testifying for the company, had the land not been expropriated, it could have been used for high-density residential building. Indeed, the zoning ordinance designating the land for this purpose, before its designation had been changed to a public park, has not been finally approved. However, everybody assumed that the ordinance would be approved. The appraiser pointed to two sale transactions of similar parcels nearby designated for high-density residential building, according to which the market price of a 4-dunam lot was two million dollars.

In contrast, the land appraiser testifying for the local authority opined that there was no certainty that the ordinance designating the land for high-density residential building would have been approved. While the planning department of the local authority supported the designation of the land to high-density residential building, [five objections/two objections/an objection by one of the neighbors] for the plan [were/was] submitted. The local authority’s appraiser introduced another transaction made in a nearby land, indicating that in the relevant period, the market price of such a parcel, not designated for high-density residential use, was one million dollars.

Another witness for the company was a local entrepreneur, who testified that a short while before the designated use of the land was changed, he had approached the company and made an offer to purchase the land for one and a half million dollars, and the company did not accept his offer. The local authority cast doubt on the reliability of this testimony, due in part to the fact that [there was no written documentation of this negotiation, and the witness had close commercial relationships with the plaintiff corporation and a legal dispute with the local authority/there was no written documentation of this negotiation, and the witness had close commercial relationships with the plaintiff corporation/there was no written documentation of this negotiation]. Suppose that you cannot decide on any intermediate value between one and two million dollars, but instead must decide between the two parties’ versions, and based on this decision accept or dismiss the claim for the additional payment of one million dollars.

27 The order of the two options was varied between subjects.
28 Approximately one acre.
29 While in Experiment 1 we employed three different versions of the text, which varied with regard to the formulations that appear in square brackets, in Experiment 2 we only used the intermediate version.
Responders were asked to answer scale or decision questions identical to those asked in the Poisoning scenario.

**Experiment 1. Loan**

Suppose that you are a judge trying a lawsuit for 200,000 NIS. The plaintiff contends that he lent this sum to the defendant, and the defendant has not repaid the loan. The defendant denies that he took the loan. It is not disputed that the plaintiff and the defendant have known each other for many years, ever since they went to high school together. The plaintiff is a lawyer practicing commercial law. The defendant is a businessperson. According to the plaintiff’s testimony, the defendant approached him after he ran into financial difficulties and asked for a loan of 300,000 NIS for a period of several months. The plaintiff agreed to lend him only 200,000 NIS, and since [the two knew each other/had a longstanding acquaintance/had friendly relationships], he did not bother to put the loan agreement in writing. According to his testimony, he gave the defendant the loan in cash, in one installment, on June 3rd (about [two years/one year/half a year] before filing the lawsuit).

The defendant testified that he indeed asked the plaintiff for a loan, and at first the plaintiff was inclined to lend him a sum of 200,000 NIS, but he eventually changed his mind and did not lend him the money. The defendant further testified that he managed to get a loan that enabled him to overcome the difficulties he faced, but refused to say who gave him the loan, because it was a “gray market” loan, and the lender refused to be named. A businesswoman testifying for the plaintiff stated that on June 4 the defendant told her that he had received a loan of 200,000 NIS from the plaintiff. The defendant testified that he did not remember the conversation about which the businesswoman testified, but even if such a conversation had taken place and he had told her that he had received a loan from the plaintiff, the only reason he had told her this was that he didn’t want to expose the real source of the loan. The plaintiff’s wife also gave testimony, testifying that the plaintiff told her at the beginning of June that he [is considering the possibility of giving his friend/is inclined to give his friend/intends to give his friend] a loan of 200,000 NIS. A reprint of the defendant’s bank records showed that on June 3 he deposited a sum of [170,000/190,000/200,000] NIS in his bank account. The defendant contends that it does not stand to reason that the plaintiff, a lawyer by profession, would have given him such a large sum as a loan without making a written contract.

Responders were asked to answer scale or decision questions identical to those asked in the Poisoning scenario.

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30 We employed three different versions of the text in Experiment 1, which varied with regard to the formulations that appear in square brackets throughout the text.
Experiment 3. Car
Suppose that you have to make a ruling in a dispute about car ownership. The disputed car was owned by the late Mr. Cohen, who recently passed away at the age of 87. The dispute is between the plaintiff, Daniel, and the defendant, Efrat, Mr. Cohen’s daughter.

It is undisputed that during the past half year, Daniel, Mr. Cohen’s care-giver who lived with him, drove the car. Daniel used the car to take Mr. Cohen from place to place, to do the shopping, and the like. Daniel used the car in his weekly day off as well, for his own purposes, with Mr. Cohen’s permission.

At the trial, Daniel testified that he and Mr. Cohen were friendly and that the two men were fond of one another. A few weeks before his death, Cohen asked Daniel how he could reciprocate for Daniel’s devoted care, and Daniel suggested that Cohen give him his car. Cohen thought this was a good idea, and the next day signed an irrevocable power of attorney authorizing Daniel to transfer the ownership of the car to himself. [Defendant-in-possession version:] Daniel did not have time to execute the transfer of ownership pursuant to he power of attorney before Mr. Cohen’s death, and he wants to execute it now. [Plaintiff-in-possession version:] Daniel used the power of attorney, and a few days before Mr. Cohen died transferred the title of the car in the motor vehicles registry.

In response, Efrat testified that she used to visit her father every day, and he never mentioned the possibility of giving the car to Daniel. Efrat was Mr. Cohen’s only daughter. She maintained that her father wasn’t all that satisfied with Daniel’s care and once in a while complained about him. At any rate, a few days before his death, her father told her that soon her son would not have to take the bus to the university, because he would be able to have Cohen’s car.

A handwriting expert who examined the power-of-attorney document also testified at the trial. The expert said that in his opinion the document was indeed written and signed by Cohen. In cross examination, the expert explained that he uses a computer program that compares the characteristics of handwriting, and according to this examination it is the same hand writing. At the same time, he admitted that the accuracy of the program is limited, and with the type of pen and paper used in the document in question, the program’s degree of accurateness is only 70%.

[Defendant-in-possession version:] The lawsuit you have to decide was filed by Daniel, who is asking for a court order that would declare the power of attorney valid (under the law, an irrevocable power of attorney continues to be valid after the death of the donor), instruct that the title to the car be transferred to him in accordance with the power of attorney, and require Efrat to hand over the car to him. Efrat objects to these requests.

[Plaintiff-in-possession version:] The lawsuit you have to decide was filed by Daniel, who possesses the car and is asking for an order declaring him the car’s rightful owner. Efrat objects to this request.

Responders were asked to answer scale or decision questions identical to those asked in the Poisoning scenario.
REFERENCES


