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# Fairness and the Willingness to Accept Plea Bargain Offers

*Avishalom Tor, Oren Gazal-Ayal, and Stephen M. Garcia**

In contrast with the common assumption in the plea bargaining literature, we show fairness-related concerns systematically impact defendants' preferences and judgments. In the domain of preferences, innocents are less willing to accept plea offers than guilty defendants and all defendants reject otherwise attractive offers that appear comparatively unfair. We also show that defendants who are uncertain of their culpability exhibit egocentrically-biased judgments and reject plea offers as if they were innocent. The article concludes by briefly discussing the normative implications of these findings.

## I. Introduction

Plea bargains—agreements between prosecutors and defendants whereby the latter plead "guilty" to an offense in return for a reduction in criminal charges or sentence recommendations—are a central feature of modern criminal justice systems. Statistically, the vast majority of criminal convictions in the United States result from guilty pleas (e.g., U.S. Department of Justice 2006), which typically follow a plea bargain. Intriguingly, however, although legal scholars hotly debate the desirability of plea bargaining (e.g., Alschuler 1981; Schulhofer 1980, 1992; Scott & Stuntz 1992), both its supporters and its detractors tend to ignore the commonsense intuition that fairness-related considerations impact plea behavior.

Plea supporters generally rely on the assumption that all plea bargainers—innocent and guilty alike—rationally choose the certain but discounted sanction offered in the plea bargain over the uncertain expected sanction at trial, based on their preexisting

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risk preferences (e.g., Bar-Gill & Gazal-Ayal 2006; Easterbrook 1983, 1992; Landes 1971). Similarly, plea bargaining detractors typically assert that various factors lead innocents excessively to *accept* bargains they should reject (e.g., Alschuler 1981; Bibas 2004).

At the same time, there is ample evidence outside the plea bargaining area that fairness impacts preferences in both bargaining and allocation behavior (e.g., Bazerman et al. 1992; Camerer 2004; Kahneman et al. 1986; Roth 1995). Defendants with fairness-related preferences, however, may be reluctant to accept unfair plea offers that defendants not holding such preferences would find attractive. The former may reject seemingly attractive offers they find *substantively unfair*, such as where its terms require the criminal conviction and sanction of an innocent defendant, as well as *comparatively unfair* offers, which appear disadvantageous compared to the terms of offers made to similarly situated defendants.[1]

There is also evidence that fairness concerns may egocentrically bias relevant judgments outside the plea bargaining context, such as in civil litigation and settlement (Babcock & Loewenstein 1997). In plea bargaining, egocentrically-biased defendants—innocent and guilty alike—would underestimate their likelihood of conviction at trial and consequently exhibit a lower willingness to accept plea offers (WTAP) than nonbiased defendants. Experimental evidence also suggests that innocents are systematically more optimistically biased about acquittal odds than their guilty counterparts (Bordens 1984; Gregory et al. 1978).

Thus, the neglect of the likely effects of fairness on plea behavior, although resembling that state of affairs in many other areas of legal scholarship (Tor 2008), stands in clear contrast not only to the common intuition that fairness matters to defendants, but also to a significant body of relevant empirical research. The data presented here therefore begin the systematic empirical examination of the impact of fairness concerns on plea behavior, beginning with some suggestive anecdotal and observational evidence and continuing with a series of controlled experiments.

A number of well-known anecdotes illustrate the reluctance of some defendants to accept objectively attractive plea offers they deem unfair. One such case concerns the highly puzzling behavior of Paul Hayes, the small-time criminal defendant in *Bordenkircher v. Hayes*,[2] who was charged with forging a check, a crime that carried a sentence of two to ten years in prison. The case was simple, the evidence solid, and both Hayes and the Kentucky prosecutor Bagby wanted to plea bargain. Yet, Bagby offered Hayes a harsh five-year sentence,[3] backed up with a powerful threat: if he were to refuse the plea, Hayes would be charged under Kentucky's habitual criminal statute that mandated life in prison (because of two earlier felony convictions) in the highly likely case of his forgery conviction. Hayes

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[1]There is also evidence that defendants may deem an offer unfair for violating their notions of *procedural fairness* (e.g., Casper 1978; Casper et al. 1988; Houlden 1980).

[2]434 U.S. 357 (1978). Further details are discussed at length in Stuntz (2005).

[3]Stuntz (2005) estimates the likely sentence to have been closer to two years.

became famous, however, for *rejecting* the five-year plea offer despite the threat, following which he was sentenced to life imprisonment.

What made the 29-year-old Paul Hayes choose a near certainty of life in prison over the absolutely certain, but dramatically shorter, five-year sentence offered in the plea? From a traditional law and economics perspective, Hayes's dramatically risk-seeking behavior appears irrational. It also contradicts the prediction of those scholars who lament the pressures that force defendants to accept offers they wish to reject.

We would like to suggest that Hayes's puzzling behavior may have been driven by factors that commonly affect defendants' subjective evaluation of the fairness of plea terms and, consequently, their WTAP. Specifically, the account Hayes provided in his certiorari petition suggests he found Bagby's threat of a life sentence for refusing to accept the offer dramatically inconsistent with the offense and thus substantively unfair. Hayes also considered the five-year term of the offer excessive for his crime compared to the offers typically given in similar situations and thus comparatively unfair. Moreover, while Hayes refused an unfair plea offer against all reason, despite his guilt, other defendants appear to reject seemingly attractive plea offers they believe substantively unfair because of their perceived innocence.

For instance, the Tulia scandal revealed the reluctance of innocents to accept seemingly attractive plea offers even in the shadow of high expected sentences at trial. In 1999, 43 innocent defendants were arrested for selling powder cocaine to an undercover investigator in Tulia, Texas, and all but one were wrongfully charged. Four of these defendants, who had very strong alibis, achieved charge dismissals. The remaining 38 innocents had to choose between trial and plea, knowing their chances of disproving a deputy sheriff's testimony were slim. The first two refused their offers, pled "not guilty" at trial, and were sentenced to 99 and 434 years of imprisonment. Nevertheless, the six defendants who followed still refused their heavily discounted plea offers and received sentences of 12–60 years of imprisonment.[4] Only then did most of the remaining defendants (27 of 30) plead guilty,[5] usually receiving probation or other nonincarceration sentences.[6]

A look at the hundreds of exonerations from the last two decades also indicates that innocent defendants tend to elect trials over pleas. Thus, Gross et al.'s (2005) database shows that merely 6 percent of the exonerates from 1989 to 2003 concerned defendants

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[4]One of these defendants, for instance, who received a 20-year sentence, saw five previous defendants convicted based on the same testimony but still refused a five-year plea offer because of his innocence (Blakeslee 2005).

[5]Note that this dramatic change in WTAP fits our finding in Study 2 that when conviction is highly likely, innocents are not more plea averse. Overall, however, despite their extreme circumstances, these defendants exhibited a 71 percent guilty plea rate as a group, which is still significantly lower than the approximately 95 percent guilty plea rate that obtained at the time for small Texas counties comparable to Tulia's Swisher County (using Bureau of Justice Statistics (2001) to compile the rate of guilty pleas in felony cases in rural counties with fewer than 50,000 inhabitants in Texas, which resemble Tulia's Swisher County).

[6]The data on the Tulia defendants were collected from Sherrer (2003) and Amarillo Globe News (2001). Additional accounts of the story can be found in Gold (2003) and Gross et al. (2005).

who pled guilty, in contrast with very high the rate of more than 90 percent guilty pleas of felony convictions generally.

Thus, both the recent exoneration data and anecdotes like the Tulia case suggest innocents are more likely to reject plea offers. Initially, one may be tempted to attribute this systematic discrepancy to innocents' objectively lower odds of conviction at trial. Plea bargaining scholarship has shown, however, that prosecutors adjust plea offers to the probability of conviction and expected sentence at trial, such that offers in weak cases reflect the weakness of the case. Since prosecutors can alter the charges and facts of the indictment with virtually no judicial review, offers generally should be similarly attractive regardless of the strength of the case.

Even if not explicable by innocents' objectively superior prospects at trial, however, the striking exoneration statistics arguably may be explained on grounds other than fairness. First, the exoneration statistics may still represent an unusual segment of innocent convictions overall. Second, innocents may possess private information about their better chances at trial (Froeb 1993)[7] that they are unable convincingly to convey to prosecutors (Grossman & Katz 1983; Scott & Stuntz 1992).[8] Third, innocents may hold optimistically-biased predictions of their conviction odds and likely sanction at trial (e.g., Bibas 2004; Bordens 1984; Gregory et al. 1978).

Hence, even if the observational and anecdotal evidence of innocents' exceptionally low plea rates does reflect their common plea behavior, rational probability estimates and overoptimism may well join with fairness preferences to cause rejections of plea offers. For the purpose of legal analysis and policy formulation, however, it would be beneficial to disentangle the impact of these different variables on plea behavior. For instance, law and economics scholars who champion defendants' freedom to bargain may find rejections due to rational probability estimates based on private information desirable but seek to de-bias overoptimistic defendants (Bibas 2004; Scott & Stuntz 1992; Tor 2008).

For the task of clarifying the role of different variables in plea rejections, controlled experiments are better suited than field studies. We therefore review, in Section II, the existing empirical evidence on the differential impact of fairness-related *preferences* on innocent and guilty defendants, supplementing it with three experimental tests of our own where both substantive and comparative fairness impact WTAP, holding constant the expected sanctions at trial. Section III examines the effects of fairness-related egocentric biases on defendants' *judgments*. Section IV concludes.

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[7]If this information is not private, guilty pleas should be as likely in weak as in strong cases, since prosecutors would adjust plea concessions and obtain guilty pleas regardless of conviction probability.

[8]Another possible explanation is that innocents are more plea averse because they face higher informal sanctions following conviction. This account, however, cannot explain the experimental data we present below, which are based on the random assignment of participants to an innocent/guilty role; nor can it account for the other fairness-driven effects we find in our studies. Moreover, this article seeks to reveal the impact of fairness on pleas, not to reject the effects and importance of other variables.

## II. Experimental Studies of Fairness and Plea Acceptance

### *A. The Early Plea Bargaining Experiments*

The real-world evidence on fairness and WTAP resonates with the extensive findings on the impact of fairness perceptions and related processes on behavior in bargaining and allocations outside the present domain (e.g., Bazerman et al. 1992; Camerer 2004; Kahneman et al. 1986; Roth 1995). Two early randomized experimental studies, moreover, specifically examined plea bargain decision making in randomized designs that show an impact of innocence on WTAP, rule out selection effects, and support the external validity of hypothetical scenarios in the present setting, yet still fail to control for significant confounds in their data.

In two experiments, Gregory et al. (1978) found innocence impacted WTAP. The first study asked male students to imagine they were either innocent or guilty of having committed armed robbery. They received highly detailed information on the circumstances that led to their arrest for committing the crime, the charges against them, their punishment if convicted, and details of a plea bargain they were offered. The first three variables—namely, culpability, number of charges, and prison sentence if convicted—were manipulated between subjects, while plea offers were identical for all participants. On the main measure of interest for our purposes, this study found innocent participants significantly more likely than guilty ones to reject the plea offer.

A second, follow-up, experiment used a confederate to place students in conditions of actual guilt or innocence about having prior information on answers to a difficult test. This more realistic experiment corroborated the results of the hypothetical judgments and decisions made by participants in the first experiment, finding innocents dramatically less likely than guilty participants to accept a plea-like compromise offer in lieu of facing judgment by an ethics committee with potentially higher penalties. Together, these two controlled experiments complement the field evidence and indicate that in the plea bargain domain hypothetical studies using students possess some external validity.

Despite their importance, however, Gregory et al.'s (1978) findings are subject to certain limitations. Specifically, manipulation checks showed innocent participants in these experiments, who were reluctant to accept plea offers, to believe they were less likely to be convicted and that their (hypothetical) defense attorney and judge would be more likely to think them innocent. Therefore, these participants' reluctance could have been driven by their optimistic judgments of their trial prospects rather than by fairness preferences. Overall, therefore, Gregory et al.'s (1978) studies leave some uncertainty as to the independent impact of fairness preferences on WTAP.[9]

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[9]While focusing on defendants' preferences regarding plea procedures, Houlden (1980) sought to address this confound, while also using as participants both students and inmates at a Florida county detention center. The experiment included four car accident scenarios, and respondents were asked to imagine they were the driver and had been charged with first-degree murder. The scenarios manipulated culpability and strength of evidence against the driver, measuring preferences for and perceptions of different plea bargaining procedures. However, Houlden

Bordens (1984) extended Gregory et al.'s (1978) findings. Using a factorial design, he independently manipulated culpability, plea offer, an attorney's estimate of conviction likelihood, and the sentence the defendant would receive if convicted at trial. Participants were provided with a description of the charge (negligent homicide by automobile), the evidence (three eyewitnesses), told whether they were innocent or guilty, and given a scale measuring their initial conviction probability estimates, which they were thereafter told to disregard. They were then given information on their offer, conviction probability, and sentence. The design used four offer levels (probation, six months in prison, one year in prison, and three years in prison), three conviction probability levels (10 percent, 50 percent, and 90 percent), and two sentence levels (one year more or five years more than offer).

The results showed Bordens's (1984) innocent defendants significantly more likely to reject plea offers. Before being provided with the defense attorney's estimates, moreover, innocents believed they were significantly less likely to be convicted at trial than did guilty participants. Unsurprisingly, all independent variables had significant main effects on WTAP, which increased with conviction probability and sentence and decreased with severity of offer.

These findings corroborate the field evidence and Gregory et al.'s (1978) results, but their usefulness for the present-day plea bargaining debate is still limited. Specifically, while Bordens (1984) overcame the earlier confound of preference and probability judgments by directly and independently manipulating probability and sentence, his design could not control for the impact of expected sanction—the joint product of conviction probability and sentence—on WTAP.[10]

Consequently, offers were *higher* than expected sentences in some experimental conditions and *lower* in others.[11] Given this state of affairs, it is difficult to draw clear conclusions regarding the main effects of the independent variables other than culpability or from the interactions among the different variables. The main effect found for conviction probability, for instance, reveals little about participants' risk preferences because expected sanctions were higher in the high- than in the low-conviction probability conditions.

Bordens (1984) thus provides valuable evidence for the independent role of innocents' substantive fairness preferences, also suggesting defendants may be able to consider both probability and sanction, but sacrifices control for the impact of the expected sanction on WTAP. These results therefore leave open the questions of defendants' risk preferences in plea bargain decision making and, importantly, of the interaction between these pref-

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(1980) neither compared overall responses of guilty and innocent participants nor provided sufficient information to allow for such comparisons.

[10]One offer level (probation) was also on a different scale from that used in the other offer and sentence levels and thus incompatible with an expected value analysis.

[11]In the 10 percent conviction probability conditions, for example, the offer was almost always higher than the expected sentence, except for those cells where six-month (or 0.5 years) offers had to be traded off against a 10 percent probability of 5.5 years (expected value of 0.55 years). In the 90 percent conviction probability conditions, on the other hand, the offer was always lower, and often much lower, than the expected sentence; the same holds for most 50 percent conviction probability cells.

erences and innocence. To remedy this shortcoming in the available evidence, we conducted some simple experimental tests of our own, to which we now turn.

### *B. Testing the Effect of Substantive Fairness on Plea Acceptance*

Early experimental studies showed the results of hypothetical questionnaires largely parallel those of complex simulation studies (Gregory et al. 1978) in the context of plea acceptance, and that the responses of students mostly resemble those of real-world inmates (Houlden 1980). These findings are especially important, since the concerns commonly voiced about the external validity of experimental methods using student participants seem particularly relevant in the present setting, where the responses of participants who do not face real criminal sanctions, not to mention jail sentences, may seem to have little bearing on those of real defendants. Moreover, even with relevant evidence for the external validity of hypothetical scenarios, experimental designs with realistic sanctions and real defendants would have been preferable, all else being equal.

Yet all else is not equal. Both ethical considerations and the availability of participants limit the use of more realistic experimental designs in the present case. Moreover, the extant evidence suffers not from a lack of external validity but, instead, from potential confounds that are largely unavoidable in more realistic simulations. In other words, the experimental tests that follow are needed not to reveal a link between innocence and WTAP, but to *isolate* the effects of innocents' preferences from those of other variables, such as their probabilistic judgments or the expected sanction at trial. The present experiments thus use hypothetical questionnaires with college and law student participants. We presented our participants with situations they realistically could face in the course of their daily lives, controlling for those variables that are most important for the present-day plea bargaining debate.

#### 1. Study 1: Innocence and WTAP

Study 1 tested the effect of culpability on WTAP, controlling for the *expected sanction* at trial. This control, in turn, allowed us to isolate the impact of substantive fairness, avoiding potential confounds with both subjective judgments of and objective differences in expected trial outcomes. The control for expected sanction also permitted us directly to contrast our findings with models of rational defendants' behavior. Furthermore, we focused on WTAP as the dependent measure that is most relevant for the legal plea bargaining debate. In line with the earlier experiments (Bordens 1984; Gregory et al. 1978) and to prevent problems of demand characteristics, we avoided introspective reports of perceived fairness and manipulated culpability between subjects only. We predicted that culpable defendants would exhibit a higher WTAP than innocents, holding fixed all other plea variables.

A total of 30 undergraduates from the University of Michigan (17 females and 13 males) were recruited at the library to volunteer for a short questionnaire. In a between-subjects design, participants read about being charged for an academic violation they either committed or did not commit: "Imagine you were accused of cheating on an exam (and personally you know you were [not] cheating)." Then all participants read:

> If your case goes before the Standards and Ethics Committee at UM, given your best ability to present your case, you see your odds, at best, being the following: 60% chance of being suspended for 1 year from UM or 40% chance of exoneration. However, an alternative is to appeal your case before it goes to the Standards and Ethics Committee but the consequences are that you would receive a "FAIL" for the class but would not be suspended from UM.

At this point, all participants answered the following dependent variable asking what they would choose between two options: "Appeal the case and receive a 'Fail' for the class—OR—Allow the case to go the Standards and Ethics Committee."

The results were consistent with the prediction (Fisher's exact test, two-sided: $p = 0.025$).[12] Among those who were told they cheated, 67 percent accepted the plea arrangement of appealing the case and receiving the fail for the class. In contrast, only 20 percent of those who did not cheat accepted this arrangement; the overwhelming majority in this condition chose to have the case go before the Standards and Ethics Committee, despite the odds of suspension.

These findings reflect the basic impact of substantive fairness in a between-subjects setting, controlling for the outcomes of plea acceptance and trial before the Committee, respectively. The results are unlikely to have been driven by a disparity in predictions of conviction probability between *guilty condition* and *innocent condition* participants: the scenario that informed them of their subjective probability estimates left little room for alternative predictions. Moreover, this study purposefully did not provide participants with rich information about the event and surrounding circumstances, which might have contributed to biased predictions of trial outcomes in past studies (cf. Babcock & Loewenstein 1997; Loewenstein & Moore 2004). We therefore attribute the significant difference between the two conditions to the experimental manipulation of innocence per se.

## 2. Study 2: Innocence and Risk Preferences in Plea Bargaining

Study 2 examined whether innocents' lower WTAP, which was apparent in Study 1 for a mid-range (60 percent) conviction probability would generalize to a broader probability range and a different scenario, using a within-subjects design to underscore the strength of individual preferences (Camerer 1995). Study 2 also controlled for the effect of the expected sanction at trial, holding the plea offer equal to the expected sanction, thereby making absolute risk attitudes transparent as well: risk-averse defendants will *accept* the plea offer to avoid the risk of facing the higher sanction in case of conviction at trial; risk-seeking participants will *reject* the offer, which offers them no "discount" from the expected sanction at trial; and risk-neutral defendants will exhibit indifference.

Our main hypothesis was that substantive fairness preferences will make innocent defendants more risk seeking than their guilty counterparts.[13] This hypothesis is consistent

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[12]Fisher's exact test is particularly important for small *N*s (Snedecor & Chocran 1989).

[13]There is evidence that defendants, arrestees, and members of the general public are hyperbolic discounters when comparing sanctions over time (Spelman 1995). These findings, however, are of limited relevance here, since they do not distinguish between fair and unfair sanctions.

with Kahneman et al.'s (1986), showing that decisionmakers judge the fairness of outcomes based on their coding as gains and losses relative to a psychologically neutral reference point, and that such *judgments* (or beliefs) are susceptible to framing effects resembling those found in studies of individual choice. The analogy Kahneman et al. (1986) draw between fairness judgments and individual choice has important implications in the present setting, where reference points that shape fairness *judgments* may also impact fairness-driven *preferences*. Since there is much evidence that people exhibit risk aversion for gains but risk seeking for losses (Kahneman & Tversky 1979; Tversky & Kahneman 1991), if these phenomena apply to fairness-driven choices, we should observe different risk attitudes for positive ("gain") versus negative ("loss") outcomes in plea bargaining. Guilty defendants who view conviction as a neutral reference point will then consider plea offers that equal the expected sentence at trial as fair, or even positive, outcomes and exhibit risk aversion. On the other hand, innocents who would view conviction and sanction as unfair, negative, outcomes will view the choice between plea and trial as a choice between two negative outcomes, and exhibit risk-seeking.

Importantly, moreover, criminal defendants must trade off (fair or unfair) plea offers against expected trial outcomes, which are probabilistic. Their choice between the plea and trial alternatives is therefore made under uncertainty. In this case, the work of Tversky and Kahneman (1992) also shows that risk attitudes depend on both the *coding* of outcomes as gains or losses vis-à-vis the neutral reference point and their *probability*: medium to high probability gains and small probability losses generate risk aversion, while medium to high probability losses and small probability gains lead to risk-seeking choices. When translated into the present domain, these findings imply that defendants' risk attitudes may depend not only on plea offer fairness but also on the probability of conviction.

We therefore also hypothesized that guilty defendants, who view conviction as neutral and discounted plea offers as gains, would tend to exhibit risk aversion across the probability range, except when the probability of conviction is very small. Innocents, in contrast, should be generally risk seeking (since they are choosing between negative outcomes).

Sixty-four undergraduates from the University of Michigan were recruited to participate in an online questionnaire survey. Approximately 200 email addresses were randomly targeted from the student directory; the response rate was 31 percent.

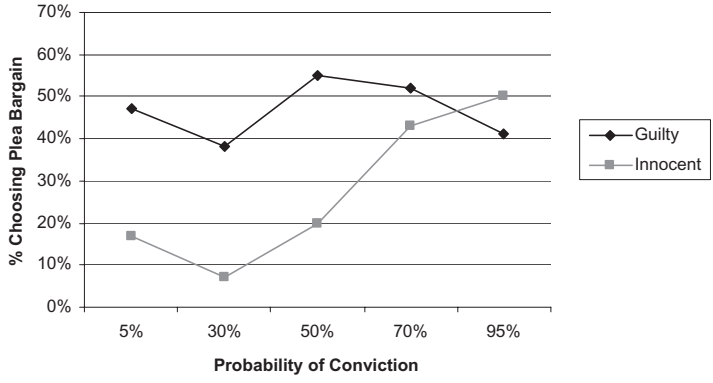
In a mixed design, participants read:

> After driving around a sharp corner, you hit a person who died as a result. You now face criminal charges, and personally you know you (DID exceed/did NOT exceed) the speed limit. The outcome of your trial depends on whether the prosecution proves that you exceeded the speed limit. If they succeed, you will be convicted and will get a mandatory 5-year (60 months) suspension of your driver's license. If they fail, you walk free.

Participants were then asked to decide whether to accept a plea bargain in five different circumstances: "Now, just before the trial, the prosecutor offers you a plea bargain: he will drop the current charges if you will plead guilty to a lesser offense that carries a significantly lighter sentence. If the terms were the following . . . "

At this point, participants read their five plea offers, in which they were asked to choose between going to trial, with a given sanction and probability of conviction, and

*Figure 1:* Car accident: percent accepting plea offer by probability of conviction.




accepting the plea offer. In each case, the sanction included in the bargain equaled the expected sanction at trial. Participants then chose between a 5 percent probability of receiving the full five-year suspension and a three-month pleabargain; a 30 percent probability and an 18-month offer; a 50 percent probability and a 30-month offer; a 70 percent probability and a 42-month offer; and, finally, between a 95 percent probability and a 57-month offer. The order of the five offers was randomized, and the question "Which would you choose?" preceded each offer.

To test these correlated binary response data, we conducted a GEE analysis (Liang & Zeger 1986).[14] The results were consistent with the prediction. There was a main effect for GUILT ($\chi^2 = 7.60$, $p < 0.01$)—that is, innocents were significantly more likely to reject their offers than guilty participants. There also was a significant main effect for PROBABILITY ($\chi^2 = 16.5$, $p < 0.01$), indicating differential effects for different levels of probability of conviction.

As Figure 1 clearly illustrates, participants in the *innocent condition* tended to exhibit significant risk seeking and reject the plea offer across almost all the probability range, with plea acceptance rates of only 17 percent, 7 percent, 20 percent, 43 percent, and 50 percent for probability of conviction levels of 5 percent, 30 percent, 50 percent, 70 percent, and 95 percent, respectively. *Guilty condition* participants, on the other hand, were significantly more risk averse, with plea acceptance rates of 47 percent, 38 percent, 56 percent, 53 percent, and 41 percent for the same five probability levels.

Hence, innocent participants were never risk averse on average, and only exhibited risk neutrality for the 95 percent conviction probability. Guilty participants, however, never exhibited strong risk seeking, and were approximately risk neutral on average. Our main hypothesis regarding the joint effects of fairness reference points and conviction probabilities was thus generally confirmed.

[14]Because the binary logistic regression assumes that the responses (trial/plea) are independent, it could not be used in this within-subjects design. The appropriate test for correlated binary responses is the generalized estimating equations (GEE) analysis (Liang & Zeger 1986), which we conducted using the REPEATED statement in the SAS GENMOD procedure.

Moreover, there was also a significant GUILT × PROBABILITY interaction ($\chi^2 = 12.3$, $p < 0.05$), suggesting that changes in probability levels differently impacted *guilty* and *innocent condition* participants. A visual examination of Figure 1 shows parallel trends for the low to medium (5 percent to 50 percent) probability levels. However, as conviction became more likely (70 percent), and then extremely likely (95 percent), the behavioral trends of participants in the two conditions diverged, with *innocent condition* participants increasingly risk averse but *guilty condition* participants more risk seeking, largely supporting our hypothesis regarding the applicability of the four-fold risk attitude pattern of advanced prospect theory (Tversky & Kahneman 1992) to fairness-driven choices in plea bargaining.

However, this predicted pattern, better explains the respective behavioral trends for guilty and innocent participants than the absolute risk attitudes these two groups exhibited for high conviction probabilities. Innocents in these conditions exhibited an increased preference for plea over trial, revealing a diminished risk seeking. Guilty participants similarly showed risk seeking, but only at a modest level. However, the observed absolute levels of risk attitudes in this study may have resulted from certain features of our specific experimental design.[15]

Together, Studies 1 and 2 adduce important additional evidence for the independent impact of substantive fairness on WTAP, controlling for the various confounds that limit our other data. Despite their contribution, however, these studies leave open the possibility that the present effect might not generalize to other aspects of plea bargain fairness, which we therefore examined in Study 3.

## 3. Study 3: Comparative Evaluation and WTAP

Comparative evaluation—that is, the evaluation of a plea offer vis-à-vis offers made in similar cases—can provide defendants with another measure of the fairness of the proposed deal. This evaluation naturally may lead defendants to conclude their offer is superior, inferior, or comparable to other offers. Subjectively, inferior offers likely would be deemed unfair, while both superior and comparable offers probably would not raise a similar concern. Superior offers may nevertheless appear more attractive, compared to those merely "fair," neutral, or comparable. Therefore, to capture the distinction between attractive and merely fair offers as well, we broadly examined the "comparative evaluation" of offers.

Rational defendants would consider the comparative evaluation of offers irrelevant for plea choice, since it changes neither the terms of the offer nor defendants'preferences.[16] Real defendants, however, may determine the attractiveness of their

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[15]Such as the use of only conviction, rather than with acquittal, probabilities; a design highlighting the latter, on the other hand, might have made absolute risk attitudes more extreme than those found here (cf. McNeil et al. 1982). Similarly, one might speculate that if incarceration were used as the sanction instead of license suspension, we might have observed increased risk seeking overall.

[16]It may be relevant where it provides defendants information on their bargaining power where negotiation is possible, unlike here.

offers also by comparing their terms to other offers, finding comparatively inferior offers less attractive and comparatively superior ones more attractive than they would otherwise be.

We have already seen, moreover, that decisionmakers view allocations below their "reference transactions" as unfair (Kahneman et al. 1986). Similarly, the extensive ultimatum game literature shows allocation recipients' willingly sacrifice monetary payoffs when rejecting comparatively unfair offers (e.g., Camerer 2004; Güth et al. 1982; Roth 1995), even where rejections do not punish offerors (e.g., Bolton & Zwick 1995; Fong & Bolton 1997). Other studies reveal the role of recipients' negative emotional reactions to comparatively unfair allocations (e.g., Falk et al. 2003; Kirschsteiger 1994; Pillutla & Murnighan 1996). Similar results have been found by choice studies that reveal people's aversion to disadvantageously unequal allocations (e.g., Garcia & Tor 2007; Garcia et al. 2005, 2010; Loewenstein et al. 1989), and their preference for *advantageous* inequality (Garcia et al. 2006). Altogether, these findings suggest defendants may reject comparatively unfair offers (and find comparatively advantageous ones attractive).

Additional support for the likely impact of comparative evaluation on plea behavior is provided by Casper's (1978) postverdict satisfaction study that found convicted felons' assertions of whether their sentences were heavier than those given to most others convicted of the same crime strongly correlated with their sense of whether their treatment was fair.[17] These postverdict satisfaction findings suggest comparisons may also impact defendants' ex ante WTAP.

We therefore predicted that participants would become more likely to accept or reject the bargain as its comparative advantage or disadvantage increases, respectively, even when the objective attractiveness of the offer remains fixed.

Seventy-four undergraduates from Eastern Michigan University (35 females and 39 males) volunteered at the library for a questionnaire. In a between-subjects design, participants read a scenario in which they were guilty of an offense, but their offer was either better or worse than those offered in similar situations.

> Suppose a fire started because of your negligence and another student died as a result. You now face criminal charges, and there is a 50% chance you will be convicted in a trial and face a mandatory 2-year jail sentence. To avoid trial, however, the prosecutor has offered you a plea bargain. Although the prosecution typically offers a (3-month/9-month) long jail sentence in similar circumstances, you have been offered a (longer/shorter) 6-month one.

Participants were then asked, "What would you do?" and could choose "Go to trial" or "Accept the plea-bargain."

The results were consistent with the prediction. Among those whose offer was shorter than the typical one, 67 percent accepted the plea with its six-month jail sentence bargain. Only 42 percent of the participants whose offer was longer than the typical one, however,

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[17]A reanalysis of the same data by Casper et al. (1988) confirmed the important role played by comparative evaluation, independently of the effects of outcome severity and procedural justice.

accepted the same plea bargain offer. This pattern was significant (Fisher's exact test, two-sided: $p = 0.039$), with WTAP significantly affected by comparative evaluation.[18]

These findings, in turn, support our more general assertion that fairness-related variables other than culpability can impact WTAP. Clearly, defendants exhibit a taste for fairness that makes "unfair" offers significantly less attractive than "fair" ones with identical terms.

## III. Fairness Preferences and Judgmental Bias

### *A. Biases in Fairness-Related Judgments*

The evidence presented in Sections I and II showed defendants' fairness preferences impact their plea behavior, diminishing WTAP for unfair offers. Yet defendants whose WTAP depends on fairness considerations must first *judge* whether offers are fair. In some cases, such as those examined in Studies 1–3, the answer is quite clear, either because the offer involves the conviction and sanction of an innocent defendant or because it is comparatively disadvantageous. At other times, however, judgments of fairness are more ambiguous and thus subject defendants, we suggest, not only to higher error rates but also to systematic bias. Such biases, in turn, may lead fairness-minded defendants to reject offers that they would have accepted if they were unbiased.

Biases in fairness judgments may impact plea behavior in different ways. Both guilty and innocent defendants may exhibit a "self-serving bias" and egocentrically[19] believe, for instance, that a trial outcome favorable to them is both fair and more likely, as found in civil litigation and settlement (e.g., Babcock et al. 1995). Unsurprisingly, these studies have also linked such biased perceptions to a diminished likelihood of settlement (Babcock & Loewenstein 1997). In fact, there is also evidence from the early plea bargaining experiments that innocent participants hold more optimistic expectations than guilty ones regarding their likelihood of acquittal at trial, even where the two groups face similar objective odds (Bordens 1984; Gregory et al. 1978).[20]

Moreover, defendants' egocentric perceptions may also combine with their fairness preferences directly to bias their judgments of plea fairness. To wit, the extra-legal literature on egocentric judgments (e.g., Dunning et al. 1989; Epley & Dunning 2000; Griffin et al. 1990) suggests that defendants who are uncertain of their culpability will tend to view

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[18]Note that if participants were to make rational inferences regarding their conviction likelihood from comparative information, one would have expected the opposite pattern from the one found here, with worse-than-average offers implying stronger prosecution cases and leading to a higher—rather than lower—plea acceptance rate (and vice-versa for better-than-average offers).

[19]We find the term "self-serving bias" often inaccurate and thus refer more generally to egocentric biases (Tor 2002).

[20]Admittedly, one cannot completely rule out the possibility that these innocents rationally believed they would be better able to convince others of their true innocence, or that a belief in a just world (e.g., Lerner 1980) could make some innocent and guilty defendants form different beliefs, at least when objective probabilities are not available.

themselves in a positive light and therefore act as if innocent, rejecting plea offers they otherwise would have accepted.[21]

Uncertainty regarding culpability may take various forms: defendants may be uncertain, for instance, of the veracity of the facts of their charge. A driver may not be sure whether he had exceeded the posted speed limit when stopped by the police if at that time he was not paying attention to the speedometer. Similarly, a person who was drunk at a party and is charged with assaulting another guest may be uncertain whether he indeed assaulted that other person or, instead, engaged in self-defense. In fact, the drunken defendant may even be uncertain whether the assault ever happened. Of course, defendants' uncertainty may also result from ambiguities in the law or its application, rather than from any factual uncertainty (e.g., Feldman & Teichman 2009). Studies 4 and 5 therefore examined the plea behavior of uncertain defendants.

### *B. Egocentric Biases of Defendants with Fairness Preferences*

#### 1. Study 4: Uncertain Offenders

Study 4 tested the hypothesis that defendants will exhibit egocentric assessments of culpability in plea bargaining. We expected participants who are uncertain of their culpability to behave as if their plea offers were substantively unfair.

Fifty-nine undergraduates from the University of Michigan (31 female and 28 male) were recruited at the library to volunteer for a short questionnaire. In a between-subjects design, participants read about accidentally hitting a pedestrian and were assigned to one of three conditions that varied culpability.

> After turning a sharp curve, you saw a woman slowly crossing the road. You tried to brake as quickly as possible, but your car hit the woman, who later died from her injury. Personally, you (know that you clearly/are unsure whether or not you/are certain that you did not) exceeded the speed limit.

All participants then read:

> You now face criminal charges, and the outcome of your trial depends on whether the prosecution proves that you exceeded the speed limit. Your highly experienced lawyer reviewed the evidence and consulted with other experts and tells you that your odds are even: A 50% chance of being convicted and getting a *mandatory* 4-year suspension of your driver's license OR a 50% chance of not being convicted and walking free.

Participants continued:

> Your lawyer explains that only he and the prosecutor will meet just before the trial and that the prosecutor will offer a plea bargain, where he will drop the current charges if you will plead guilty to a lesser offense that carries a significantly lighter sentence. However, you must now tell your lawyer the *maximum* license suspension you are willing to accept as part of the plea bargain, to avoid the 50% risk of getting the mandatory 4-year suspension at trial.

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[21]An unbiased uncertain defendant would subjectively judge his or her culpability based on the available information and express a fairness-driven preference that reflects that judged culpability, with a generally higher WTAP than innocents.

At this point, participants responded to the dependent variable: "What is the maximum period of license suspension you would be willing to accept as part of the plea bargain, to avoid the 50% risk of getting the mandatory 4-year suspension of your driver's license at trial? (please check)." They then indicated the maximum sanction they were willing to accept (ACCEPT) on a nine-point scale from 0 to 48 months with six-month intervals between points and a midpoint representing 24 months.[22]

As predicted, participants in the *guilty condition* were willing to accept a higher maximum sanction ($M = 3.95$, $SD = 2.06$)[23] than those in both the *not guilty* ($M = 2.68$, $SD = 2.08$) and *uncertain conditions* ($M = 2.64$, $SD = 2.37$). We conducted a linear regression to test our prediction with the contrast weights: 2 (*guilty*), –1 (*not guilty*), –1 (*uncertain*). The results were significant ($B = -1.29$, $\beta = -0.28$, $p < 0.05$), while controlling for the orthogonal contrast (0, 1, –1: $p = 0.96$), implicating participants' egocentric assessments in the *uncertain condition*. These participants' diminished ACCEPT ratings closely resembled those of participants in the *not guilty* condition, and were significantly different from those of participants in the *guilty condition*. Apparently, uncertain participants tend to exhibit egocentric self-perceptions and behave as if they were not guilty, in clear contrast with models of rational defendant behavior.

## 2. Study 5: Preference and Bias in Plea Behavior

The last study integrated the various phenomena examined in this article within a unified framework that accounts for the two types of fairness preferences—substantive and comparative—as well as for egocentrically-biased fairness judgments. Our predictions were that the two analytically independent fairness constructs exert independent effects on WTAP even when simultaneously present, and that the judgmental bias of uncertain offenders will be replicated in a different scenario and a more complex design.

One-hundred-twenty undergraduate law students at University of Haifa in Israel (72 females and 48 males) completed a voluntary questionnaire in criminal procedure classes. In a 3 (substantive fairness: *guilty/ uncertain/ not guilty*) × 3 (comparative evaluation: *better/ similar/ worse*) mixed design, participants read a variant of the fire accident scenario used in Study 3.

> Imagine a fire which started in your apartment while you were taking a class at the university caused the death of a neighbor. The police think you left turned on the space heater that caused the fire, but there are some difficulties in proving that. *(You remember that you did leave/You don't remember whether you left/You remember you did not leave) the space heater turned on* when you left the apartment.

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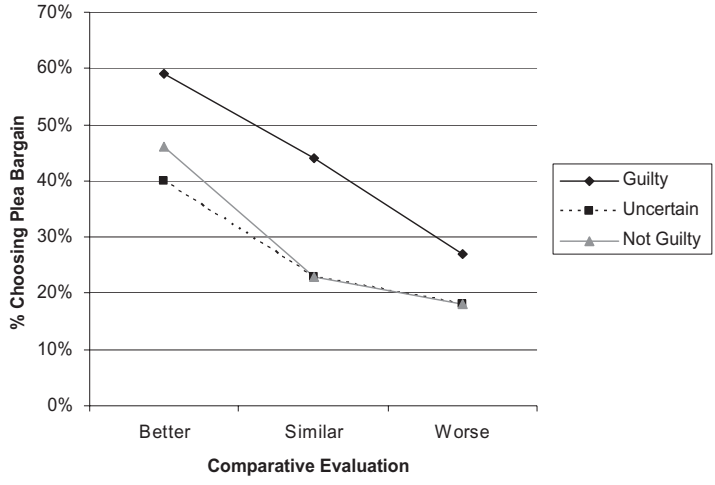
[22]Note that while our other studies sought to rule out the possibility of renegotiation of a better plea following an initial rejection by simply indicating or implying there will be no such option, the maximum WTAP measure used here also serves to reveal participants' actual reservation prices, notwithstanding their potential subjective perceptions regarding any possible renegotiation.

[23]These statistics are based on a conversion of participants' choice to value between 0–9 on the nine-point scale used in the study.

*Figure 2:* Deadly fire: percent accepting plea offer by levels of comparative evaluation.




Participants then read:

> You are now standing on trial on a charge of negligent homicide. Considering all the evidence and circumstances, your conviction odds are 50%. If you are convicted, the judge will sentence you to a mandatory *one-year jail sentence*.

The next paragraph stated:

> The prosecutor approaches you at the eve of trial and offers a (non-negotiable) plea bargain: You will plead guilty to a lesser offense, you will be convicted based on your admission, and you will be sentenced only to 3 months in jail.

At this point, participants in the three between-subjects substantive fairness conditions read three questions for which they had to choose between trial and plea. The counterbalanced offers only differed in their comparative evaluation. They asked:

> What will you choose if the sentence offered by the prosecutor (3 months in jail) is (shorter than/similar to/longer than) the jail sentence typically offered by the prosecution in similar cases (6 months in jail/3 months in jail/a month and a half in jail)?

We conducted a GEE analysis because of the correlated binary responses in this mixed design.[24] As predicted, the contrast for the between-subjects factor of *substantive fairness*—2 (guilty), −1 (uncertain), −1 (not guilty)—was significant ($\chi^2 = 4.85$, $p < 0.05$). The linear contrast for the within-subjects factor of *comparative evaluation*—1 (better), 0 (similar), −1 (worse)—was also highly significant ($\chi^2 = 25.9$, $p < 0.001$) in accordance with our predictions. Finally, the interaction between *substantive fairness* and *comparative evaluation* was not significant ($\chi^2 = 1.83$, $p = 0.77$), suggesting that, even when both are present, the two variables exert independent effects on WTAP.

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[24]Supra note 14.

This pattern of results is clearly illustrated in Figure 2. *Guilty condition* participants showed higher rates of plea acceptance, with 59 percent, 44 percent, and 27 percent accepting the offer in the *better than typical*, *similar to typical*, and *worse than typical* within-subjects treatments, respectively. *Uncertain* and *not guilty* participants, on the other hand, showed lower acceptance rates, with 40 percent and 46 percent in the *better than typical condition*, 23 percent and 23 percent in the *similar to typical condition*, and 18 percent and 18 percent in the *worse than typical* treatments, respectively.

The findings of Study 5 confirm our hypotheses, extending the findings of Study 3, regarding the effect of comparative evaluation, and Study 4, regarding the egocentric bias of uncertain offenders.

## IV. Discussion

The evidence examined here makes clear that defendants' fairness perceptions play an important role in their willingness to accept plea offers. The extensive but largely theoretical plea bargaining literature, however, has paid little attention to the impact of either preferences for or judgments of plea fairness.[25] Most economic models of plea bargaining simply assume rationality and disregard fairness altogether (e.g., Grossman & Katz 1983; Reinganum 1988). Moreover, the few scholars who considered potential differences between guilty and innocent defendants have relied on intuition instead of empirical evidence, with sometimes inaccurate conclusions.[26] This section thus briefly outlines some tentative implications of our findings, showing they call both advocates and detractors of the rational defendant view to rethink and revise some of their long-standing positions.

For one, innocents who choose trial over plea will reject discounted offers that include sanctions lower than the expected sanction at trial. Inevitably, therefore, *these innocents—as a group—will bear higher average sanctions than guilty defendants* facing comparable conviction probabilities, who accept the discounted plea offers at significantly higher rates. Although important, however, this "cost of innocence" only applies to a portion of criminal prosecutions overall, since cases against culpable defendants are likely to be stronger, on average, than those against innocents.

Moreover, much of the plea bargaining literature revolves around the "innocence problem"—that is, the possibility that innocent defendants accept discounted plea offers to avoid the risk of severe sentences following trial (e.g., Gazal-Ayal 2006; Wright 2005; Scott & Stuntz 1992). For many plea bargaining critics this risk justifies a ban on plea bargaining (Alschuler 1968; Schulhofer 1992). Yet, if innocents tend to reject offers that guilty defendants accept, the concern over the innocence problem may be exaggerated. At

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[25]Exceptions can be found in the debate over nolo contendre and Alford pleas, which allow a defendant to accept a conviction without trial and without an explicit guilty plea (Bibas 2003).

[26]For example, Bibas (2004: 2495) assumed innocents are likely to be risk averse. He also asserted that defendants who were intoxicated during their alleged crime and are thus uncertain about their guilt would be more easily persuaded by prosecutorial bluffing than their guilty counterparts to accept plea offers.

the same time, our findings should also give pause to plea supporters, who argue that plea bargains serve as insurance and thus can only benefit defendants, guilty and innocent alike (Easterbrook 1983; Lynch 1998; Scott & Stuntz 1992). After all, innocents' plea aversion suggests this "insurance" disproportionately benefits guilty defendants.

However, our finding that the systematically different risk attitudes exhibited by innocent and guilty defendants also depend on acquittal probabilities suggests that the extant positions of both sides of the plea bargaining debate may still be relevant for a certain range of cases. To wit, when conviction probabilities are high, and it is difficult to say how often this is the case,[27] fairness concerns do not appear to lead guilty and innocent defendants to significantly different plea acceptance behavior.

Finally, the impact of fairness considerations on defendants' behavior may also have some fortunate consequences. For instance, if plea offer data were published, the effect of comparative evaluation might have curtailed the inequality and arbitrariness of the sentences generated by plea bargaining (Alschuler 1981; Stuntz 2004). However, an increase in plea transparency may also exacerbate the effects of egocentric biases, which defendants exhibit with respect to fairness judgments, and are likely to impact comparative evaluations as well (cf. Babcock et al. 1995), leading defendants to reject offers that unbiased defendants would accept.

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[27]Since innocents are likely to have a lower-than-average conviction probability if trials separate the innocent from the guilty to any degree, although conviction statistics are high overall.

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