

The Influence of Confessions on Guilty Pleas and Plea Discounts

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The influence on confession evidence in trials is quite strong; triers of fact who hear confession evidence find these self-incriminating statements hard to ignore and in turn, vote to convict more often. However, most cases do not see the inside of a courtroom, but rather are resolved via plea bargains. In the present study, we examined how confessions, whether partial or full, influence guilty plea rates and plea discounts (the difference between sentence received at trial if convicted and sentence received as part of the plea). We coded more than 500 district attorney case files for defendant statement type (i.e., not questioned by police, questioned but denied guilt, questioned and partially confessed, questioned and fully confessed), case disposition (guilty plea, trial, dismissal), and other pertinent information (e.g., initial charges, perceived strength of evidence). We found that whereas those who denied guilt were the least likely to plead guilty, when they did plead, they enjoyed the largest plea discounts. In addition, partial and full confessors were found to be equally likely to plead guilty (both at near-ceiling levels), but partial confessors received the smallest plea discounts by far. Our findings have implications for theories of remorse and punishment, and plea decision-making.

Keywords: guilty pleas, confessions, remorse, plea discount

Over the past two decades, psycholegal scholars have learned a tremendous amount about police interrogation and confessions, including why suspects admit guilt to crimes they did and did not commit and how judges and jurors react to confessions in the courtroom (e.g., Kassin et al., 2010; Leo & Liu, 2009; Wallace & Kassin, 2012). Confession evidence is known to be particularly weighty in the courtroom, such that when a confession is present, juries are much more likely to convict (e.g., Kassin & Neumann,

1997), regardless of whether the tactics used to secure the confession were deemed coercive (Kassin & Sukel, 1997; Kassin & Wrightsman, 1981). Confession evidence is referred to as both the king (Oi, 2013) and queen (Fisher & Rosen-Zvi, 2008) of evidence in the courtroom precisely because it tends to be synonymous with convictions. In fact, the Chinese have a saying, “Convictions begin with confessions” (Belkin, 2011, p. 279).

However, most criminal cases never see a courtroom. In large urban counties, about a quarter of cases are dismissed, and of the 75% cases that remain, almost all are resolved through guilty pleas (Bureau of Justice Statistics, 2013). This pattern is not restricted to large urban counties; across the United States, about 95% of convictions are the result of guilty pleas. Scant research, however, has examined how confession evidence influences guilty plea rates and the extent of the plea discount (e.g., the difference between the sentence received via the plea bargain and the sentence received if convicted at trial). However, as discussed in more detail below, confession evidence presented at trial and in plea negotiations is likely to differ in meaningful ways. One such difference relates to the constructs of remorse and the acceptance of responsibility. Perceptions of defendant remorse, a factor consistently found to impact sentencing (e.g., Ward, 2006), are likely to be higher among those who accept responsibility for the crimes (either through full confession to police or guilty plea) than those who deny their crimes.

In the present study, we address two questions using data collected from district attorney case files. First, how does the presence of a confession influence guilty plea rates? In addition, to contribute to the growing knowledge base on the role of remorse in sentencing outcomes, we examine variants of confessions, including partial (admissions) versus full confessions, as well as denials. Second, how does

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the presence of a confession (and its variants) influence the value of a guilty plea (i.e., the plea discount) for those who pled guilty? In essence, the first question speaks to the guilt/innocence phase whereas the second speaks to the sentencing phase. Because the guilty plea combines these two phases into one (Bushway, Redlich, & Norris, 2014), how confession evidence affects these phases individually may be obscured.

Confessions and the Guilt/Innocence Phase

Famously a legal scholar once proclaimed that confessions make the introduction of other types of evidence superfluous (McCormick, 1983; see also Kassin, 2012). Kassin and Neumann (1997) tested this notion by manipulating whether mock jurors considered confession, eyewitness, or character evidence. Across three separate studies and several crime types, confessions significantly increased guilty verdicts in comparison to the other two evidence types. Even confessions later proven to be false are potent evidence (Drizin & Leo, 2004) and thus, despite defendant claims of coercion, confusion, or trickery, triers of fact often cannot see past the incriminating statements in determining guilt. Indeed, several research studies (e.g., Kassin & Sukel, 1997; Redlich, Quas, & Ghatti, 2008) have demonstrated that individuals, including judges (Wallace & Kassin, 2012), despite being able to recognize coercive—and therefore inadmissible—interrogation techniques, still vote to convict (cf. Woestehoff & Meissner, 2016).

Defendants who confess to the police and then proceed to trial are often believed to be treated harsher than those who did not confess. As stated by Leo (1996, p. 298), “*Suspects who provide incriminating information to detectives are significantly more likely to be treated differently at every subsequent state of the criminal justice process than those suspects who did not provide incriminating information during interrogation*” (emphases present in original). Leo found that “incriminators” were less likely to have their cases dismissed, but more likely to be charged, convicted, and punished than those who did not incriminate themselves during police interrogation (see also Bradshaw & Marks, 1990; Walsh, Jones, Cross, & Lippert, 2010).

However, confessors who proceed to trial are in effect recanting their confession, which is an important consideration. For one, by definition, defendants who proceed to trial plead not guilty and, excluding affirmative defenses (e.g., insanity, self-defense), proclaim their innocence. Thus, most defendants who confessed and who go to trial (and whose confessions are not suppressed pretrial which is atypical; Leo & Davis, 2010) are in a sense recanting their confession, claiming that it was coerced, false, and/or never given. Further, in the courtroom, confession evidence is cross-examined; defendants may or may not take the stand, but often police interrogators provide testimony and if available, an interrogation (or confession) recording may be presented to triers of fact (Kassin, Kukucka, Lawson, & DeCarlo, 2017). In the guilty plea context, confessions and other types of evidence are not cross-examined but rather are likely to be taken at face value and without investigation into the possible factors known to affect confession reliability (Redlich, 2010).

This begs the question: what role does confession evidence play in regard to guilty pleas? Typically, when a defendant pleads guilty, a factual basis for guilt must be met (Redlich, 2016). In

effect, the guilty plea replaces the guilt-innocence determination made by a jury or judge, and results in a finding of guilt and a conviction (see Newman, 1966). The mere willingness to plead guilty is often used as a stand-in for factual guilt (Bibas, 2014; Rakoff, 2014).

The predominant theory of plea decision making, “bargaining in the shadow of the trial” (see Bibas, 2004; Bushway et al., 2014), posits that defendants base their plea decisions on expectations of trial outcomes. More specifically, in theory, defendants will forecast their probability of conviction at trial given the strength of the state’s case, the perceived credibility of witnesses, past performances of the judge, and so forth. Thus, insofar as confession evidence is extremely potent at trial, rational defendants who confessed at an earlier stage should be more willing to plead guilty than those who did not confess. To wit, there is evidence supporting the notion that confessors are more likely to plead guilty, regardless of whether the confessions are true or false (see Perillo, 2015; Redlich, 2010). For example, Leo (1996) reported that among those who provided (presumably true) incriminating statements during police interrogation, 52% of cases were resolved via guilty pleas, in contrast to only 27% of those who had invoked their *Miranda* rights or denied guilt.

Redlich, Bushway, and Norris (2016) presented defense attorneys, prosecutors, and judges with a hypothetical case and a list of 31 legal and extralegal factors to possibly consider. Confession evidence was the most viewed factor by all three groups and positively predicted the plea decision. When no confession was present, 86% of the sample recommended the plea option versus 91% when a confession was present, a small but significant difference (although this finding was primarily driven by defense attorneys; see Redlich et al., 2016). This pattern is squarely in line with the shadow of trial model of plea decision-making (see also Bushway et al., 2014). If strength of the evidence drives plea decision-making (Emmelman, 1997; Horney, 1980), then confession evidence, or even any form of incriminating statements, should increase the likelihood of guilty pleas.

In sum, there is consistent evidence that defendants who confess are more likely to be convicted both at trial and via guilty pleas. But, the guilty plea confounds the guilt-innocence and sentencing phases of the criminal justice process (Bushway et al., 2014). Thus, the next question addressed is whether those who confess (to the police) and are convicted via guilty pleas are also disadvantaged in sentencing.

Confessions and the Sentencing Phase

As indicated, individuals who confess appear to be treated more harshly than those who do not across several different time points on the criminal justice continuum (Leo, 1996). Does this harshness persist into sentencing? On the one hand, Leo (1996) found that “successful” interrogations (in which incriminating statements were obtained) resulted in more severe sentences in comparison to “unsuccessful” interrogations. However, a closer look revealed this pattern was only evident when the sentence was coded as “none” or “low sentence” (Leo, 1996; Table 16). That is, the unsuccessful cases in his sample were more likely to receive “no sentence” (57%) than the successful ones (33%). The unsuccessful cases were also less likely to receive a sentence of less than one year (21%) than the successful cases (43%). But, when the sen-

tences were coded as “medium” or “long,” differences by the success of the interrogation did not appear; 18% and 19% of unsuccessful and successful cases received a sentence of 1 to 5 years (medium), and 13% in each group received a sentence of more than 5 years (long).

Findings from Redlich and colleagues (2016) also support harsher punishment for confessors in the context of pleas. In the online study in which defense attorneys, prosecutors, and judges reacted to a hypothetical case, the presence of confession evidence significantly predicted the size of the plea discount: plea discounts were smaller, 64%, when confession was present, versus 68% when confession was absent (again, a small but statistically significant finding). To put in more concrete terms, a defendant facing 20 years in prison if convicted at trial who confessed would receive a plea sentence of 7.2 years ($20 \times .36$), whereas that same defendant who did not confess would receive a plea sentence of 6.4 years ($20 \times .32$), a reduction of 0.8 years (or 9.6 months). Thus, attorneys and judges in this sample gave harsher punishments to confessors as evidenced by their smaller plea discounts (see also Bushway et al., 2014).

On the other hand, there is a compelling reason to predict that confessors would receive more lenient sentences than nonconfessors. One of the most consistent factors to predict sentencing outcomes is the perceived remorsefulness of the offender. For example, juries deciding whether to sentence a convicted defendant to a life or death sentence are influenced by how remorseful they perceive the person to be (Eisenberg, Garvey, & Wells, 1998). Judges also often use remorsefulness as a factor in sentence determinations (e.g., Ward, 2006). Confessions can be viewed as manifestations of remorse in that defendants who claim responsibility for their actions are likely to be perceived as more remorseful than those who do not. Supporting evidence can be found by Feld (2013) who interviewed Minnesota prosecutors, defense attorneys, and judges in the context of a larger study on juvenile interrogations. He asked these actors whether youths’ confessions or admissions of responsibility were influential in charging and dispositional decisions. Several prosecutors and judges stated that youth who confess may be more likely to get a “deal because he [the youth] seems like he has taken some sense of responsibility” (p. 174) or to get “a bit of slack when negotiating because it shows a willingness to cooperate [and] to take responsibility” (p. 175). At the same time, however, a few prosecutors remarked their discomfort with rewarding confessions with reduced charges (or sentences) because of the possibility of penalizing those who exercise their right to remain silent. Interestingly, the defense attorneys interviewed by Feld did not agree with prosecutors or judges; they did not perceive their youthful clients to receive benefits for confessing (e.g., “they definitely don’t get a break for singing”; p. 176).

Further, Gold and Weiner (2000) examined relations between remorse and confessions for punishment-related outcomes. In their first study, they manipulated confession outcomes (with and without remorse, and no confession) using a hypothetical scenario of a woman accused of passing secret documents to Russia. When the woman was remorseful in her confession, participants viewed her as the most sympathetic, the most deserving of forgiveness, and were the least severe in their punishment. On these same measures of sympathy, forgiveness, and punishment, participants in the confession-without-remorse and no-confession conditions did not

significantly differ in their ratings. Their second experiment replicated the findings from the first, leading the authors to conclude, “for a confession to be effective, remorse must be shown” (Gold & Weiner, 2000, p. 297).

Another consideration is that guilty pleas often equate to leniency, in part because of perceptions of remorse. It is a well-established fact that defendants who are convicted via guilty plea versus at trial receive significantly shorter sentences. This difference in sentences is referred to as the plea discount, or alternatively, the trial tax or trial penalty (Redlich, Wilford, & Bushway, in press). Recently, Yan and Bushway (2017) demonstrated that plea discounts in New York were 45% or larger. To a large degree, people who plead guilty receive such leniency because they are willing to admit guilt (i.e., confess), thereby skipping the guilt-innocence phase, and saving the court time and resources. In the federal sentencing guidelines as well as many states, downward adjustments based on cooperation are built-in components (Feld, 2013; O’Hear, 1996). Providing “substantial assistance” to law enforcement and acceptance of responsibility for crimes are two primary methods of permissible downward departures from the guidelines (Ulmer, Eisenstein, & Johnson, 2010).

Even defendants who do not admit guilt in guilty pleas tend to receive leniency. Bibas (2012) discusses “guilty-but-not-guilty-pleas” (p. 61), which include no-contest and *Alford* pleas. In a no-contest plea, the defendant neither admits nor denies guilt; in an *Alford* plea, the defendant proclaims innocence but still enters a guilty plea (while acknowledging that the state has sufficient evidence to convict at trial). Redlich and Ozdoğru (2009) found that no-contest and *Alford* plea-takers received the same types of leniency as those who entered traditional guilty pleas (in which guilt is admitted)—and in contrast to those who entered not guilty pleas and were convicted at trial.

Overall, the evidence is mixed on whether those who confess are punished more severely than those who do not. There are theoretical (related to perceived remorse) and empirical reasons supporting both conclusions. One possible explanation for these discrepant findings is whether the confession is a partial or a full one, which to our knowledge, has not yet been addressed.

The Present Study

In the present study, we ask and answer two questions that have implications for theories surrounding perceived remorse and criminal justice outcomes, and plea decision-making. First, we examine how confession influences guilty plea rates, and second, how confession influences plea discounts. For each question, to approximate remorse, we consider whether the defendant denied, partially admitted, or fully admitted guilt to the police, or was never questioned by police. Interestingly, many researchers have coded whether defendant statements are partial or full confessions (e.g., Feld, 2013; Walsh & Bull, 2010) but none, to our knowledge, has examined how these nuances influence subsequent aspects of the investigation. For example, although Leo (1996) coded for whether statements were full or partial confessions, or even just contained incriminating statements, he did not examine these variant types of defendant statement by conviction outcomes, but rather collapsed across those who provided any incriminating statement. Thus, it is an open question whether a full or partial confession would influence findings of guilt differentially. None-

theless, as argued above, insofar as an admission of guilt from the accused is the influential factor that sways guilt decisions, whether the admission is partial or full should not matter in verdict decisions. Thus, in the present study, we expect that, in comparison to defendants who did not provide a statement to police or denied guilt, those who provided partial or full confessions will have higher rates of guilty pleas. However, whether a confession is full or partial is expected to matter in the sentencing phase à la remorse. Defendants who only partially admit details of the crime are expected to be seen as less remorseful than those who take full responsibility. Thus, we would expect full confessors to have larger plea discounts, in comparison to those who only partially confess. If remorse is the driving factor behind plea discounts, than those who deny guilt, or offer no statements at all (and plead guilty) should also receive smaller discounts. However, because probability of conviction also influences plea discounts, à la the shadow model, it is also possible that deniers of guilt (and those not questioned by police) will enjoy the largest plea discounts.

Method

To answer our research questions, we coded case files from prosecutors' offices in two counties in New York State. To maintain confidentiality, we use County A and County B hereafter. In selecting cases to code, we took into consideration multiple factors. First, we examined cases beginning in 2005 and 2006, to help ensure that the cases were closed by the time of our coding. Second, we selected cases that originated as adult felony arrests. Third, we aimed to include all trials, as these were estimated (and found) to be relatively rare events. We also note here that this is not a paper about false confessions or false guilty pleas; we analyzed actual case files and thus were not able to discern with any level of certainty whether defendants in our sample were factually innocent.

In County A, a relatively small county (population <50,000), we coded the near-population (89%) of cases. We coded 243 cases in County A: 225 pleas, 2 trials, 14 dismissals, 1 other outcome (the defendant died before disposition) and 1 unknown outcome. In County B, a larger county (population >100,000), we coded 259 cases using a stratified sampling approach. Specifically, the NY Division of Criminal Justice Services reported that there were over 2,000 felony arrests in 2005 and 2006 in this county. We selected and coded all available cases that went to trial ($n = 8$). For the remaining cases, we first determined whether each was disposed of in a local or municipal court, or remained in a superior court. Local court case files were stored in boxes in the basement of County B's courthouse. In each box, we counted the total number of eligible cases (i.e., adult cases with initial felony charge). We then randomly selected one case out of each box. We coded 154 lower (local) court cases using this sampling method. A total of 105 superior court cases were randomly selected from the arrest list. In County B we coded 227 pleas, 8 trials, 17 dismissals, and 7 unknown outcomes.

Descriptive characteristics of our samples are shown in Table 1. County A and B significantly differ across several dimensions (though not on defendant age or gender). Because the counties differed in size, selection criteria, and on several characteristics, it was important to weight the cases to account for these differences.

Weighting Cases

We created a *sampling weight*; the purpose of this was to reflect that each case in our sample represents a different number of cases processed. In County A, all cases are self-representative and have a weight of 1 because we coded the near-population of cases. In County B, the weight of cases depended on the outcome and type of case (superior or local court). We coded the population of trial cases in County B, so they are self-representative and also have a weight of 1. For plea and dismissal cases, all superior court cases had a weight of 9.64, which equals the total number of superior court cases (excluding trials, $n = 935$) divided by the number of those cases ($n = 97$) in our sample. Each local court case has a weight that equals the total number of eligible cases in the box from which it was drawn (ranging from 1 to 22).

These sampling weights allow us to make inferences that reflect the actual case mix (i.e., trials, superior and local court cases) in each county. However, the case population in County B is almost 10 times as large as County A, and thus the sampling weights that make inference back to the entire population of court cases in both counties would yield findings that are dominated entirely by County B. Therefore, we modified the sampling weight for analyses such that each county is treated equal in size. The resulting *final weight* reflects the actual case distribution in each county, but does not recognize that there are more overall cases in County B than in County A.¹ The advantage of using this hybrid weighting strategy is that our results reflect the equal contribution of each county, while still accounting for the actual mixture of different types of cases in each county.

District Attorney Case File Coding

The district attorney (DA) case files were often large (typically between 20 and 50 pages) and disorganized. To the extent possible, we coded the files for key dates (e.g., dates of incident, arrest, disposition, sentencing); arrest and crime characteristics (how cases were known to police, degree of financial or physical harm to victims); defendant characteristics (e.g., criminal justice status at time of incident, involvement of cosuspects); legal proceedings (e.g., final disposition and sentencing, number of final charges); and evidence (e.g., defendant statements, eyewitnesses, DNA evidence). Coders also rated their perceived strength of the evidence (i.e., likelihood that the defendant committed the crime) using a 7-point scale (1 = weakest, 7 = strongest).

Two of the primary variables used here are defendant statement type (our independent variable) and case outcome. Defendant statement was first coded as absent or present; the absent defendant statements were coded as the "no statement" outcome. (Absent defendant statements were not simply missing from the file, but were determined to have been not obtained by police.) If present, the type of defendant statement was coded using the following categories: full confession; partial confession; denial—alibi; denial—admit presence but not crime; denial—other; other; and unknown. For analyses, the separate denial categories were collapsed into one "denial" outcome. Defendant statement out-

¹ $final\ weight\ for\ County\ B = sampling\ weight \times \frac{259}{total\ number\ of\ cases\ in\ County\ B}$
The final weight for all cases in County A is the sampling weight for County A, which is also 1.

Table 1
Defendant and Case Characteristics

Variables	Total (<i>n</i> = 502)	County A (<i>n</i> = 243)	County B (<i>n</i> = 259)
Defendant and case factors			
Defendant gender	Male = 83.9%	Male = 84.2%	Male = 83.6%
Defendant age (<i>SD</i>)	<i>M</i> = 30.07 (11.42)	<i>M</i> = 29.83 (11.71)	<i>M</i> = 30.30 (11.14)
Defendant race, % minority	21.7%	7.5%	35.0%
Severity of top arrest charge (higher scores = lower severity)	<i>M</i> = 4.03 (1.02)	<i>M</i> = 4.29 (.88)	<i>M</i> = 3.78 (1.09)
Time from incident to arrest (days)	<i>M</i> = 67.45 (184.66)	<i>M</i> = 81.75 (218.32)	<i>M</i> = 53.45 (143.43)
Time from arrest to case Disposition (days)	<i>M</i> = 153.35 (147.20)	<i>M</i> = 140.98 (122.76)	<i>M</i> = 171.25 (166.45)
Defendant statement outcome			
No statement	38.0%	22.4%	53.5%
Questioned, denial	10.4%	9.96%	10.9%
Questioned, partial confession	21.1%	32.8%	10.5%
Questioned, full confession	24.5%	27.4%	22.3%
Unknown/missing	6.0%	7.5%	2.7%
Dispositional outcome			
Guilty plea	89.8%	92.2%	87.6%
Trial	1.8%	.8%	2.7%
Dismissal	5.6%	5.4%	5.8%
Other/unknown	2.8%	1.6%	3.9%
Plea discount (<i>SD</i>)	<i>M</i> = 59.62 (36.35)	<i>M</i> = 55.67 (38.83)	<i>M</i> = 63.53 (33.34)

come was available for 94% of our sample; for the analyses reported below, the 6% of cases with unknown statement outcomes were excluded. As seen in Table 1, 38% (*n* = 191) were not questioned by the police, 10% were questioned but denied involvement (*n* = 52), 21.1% offered partial confessions (*n* = 106), and 24.5% offered full confessions (*n* = 123).

Case outcome was initially coded as: guilty plea; jury trial—guilty; jury trial—not guilty; nonjury trial-guilty; nonjury trial—not guilty; charge dropped/dismissed; and other. As seen in Table 1, however, most people in our sample—90%—pled guilty. Of the remaining 10% of cases, 1.8% were jury trials (*n* = 9; 8 of whom were found guilty), 5.6% were dismissed (*n* = 28), 1.2% had an “other” outcome (*n* = 6), and 1.6% had unknown case outcomes (*n* = 8; these cases were excluded from analyses). Thus, for analyses, we dichotomized case outcome into plea versus no plea—this was our first dependent variable.

Coding of the DA files was conducted by five individuals, the two lead investigators and three doctoral students. Written, detailed instructions for coding were generated. About 10% (*n* = 55) of the cases were coded twice, and another 16 were coded three times, as part of reliability checks. An interrater reliability of 88.5% for both counties was found (86.3% in County A and 90.1% in County B). On average, coding one file took 57.5 min (*SD* = 33.8 min).

Plea Discount Measure

Our second dependent variable was plea discount. To create the plea discount measure, it was important to obtain defendant criminal offense histories, and then determine their statutory risk—that is, given their initial charges and their criminal history, the maximum sentence allowed under the law (to then compare against the actual sentence received via the guilty plea). Criminal history record information (CHRI) was typically not in the DA case files. Thus, we obtained this information from the Federal Bureau of Investigation, which included national arrest records. We obtained

CHRI for 468 defendants (91.2% of sample) by matching identifying information (including name, social security number, FBI and state IDs, race, location of arrest) collected from the DA case files.

Next, we coded the CHRI to calculate the statutory exposure risk of their original felony arrest charges. We consulted the New York State Penal Law and Criminal Procedure Law to determine what information was necessary to determine the expected sentence for offenders, and corresponded at length with a former NY assistant district attorney for further verification (face validity) purposes. The term statutory exposure describes the maximum and minimum sentence prescribed in the statutes for each offense listed therein. In New York, felonies are divided into five classes, denoted by letters A through E (Class A being the most serious). Within each class, drug offenses and violent offenses are listed separately. Misdemeanors are divided into two classes, A and B, in addition to “unclassified” misdemeanors. Cases can also result in a civil violation, which is not considered a crime in New York. Cases that ended in civil violations (which were rare) were considered dismissed from criminal court in this study. Defendants’ statutory exposure was determined by two factors: the current offense class and their offense history. More specifically, the history component considers whether the defendant had any felony convictions in the past 10 years from the date of incident (accounting for time incarcerated), and if yes, whether any such prior conviction was for a violent felony. For the analyses below, we used the maximum statutory exposure to create the plea discount measure.

Results

In addressing our two research questions and testing our hypotheses, we conducted chi-square, analysis of variance, and logistic (for plea decision) and multiple (for plea discount) regression analyses. As noted, we expected that confessors (partial and full) would be the most likely to plead guilty, and that full

confessors would receive larger plea discounts in comparison to those in the partial confession, no-statement and denial groups.

Defendant Statement and Plea Decision

Our first research question was, how does the presence of a confession influence the plea decision? Using the final weight, we first conducted a chi-square analysis to examine relations between defendant statement type and plea, $\chi^2(3) = 221.70$, $p < .0001$, $\phi = .32$. Plea rates by defendant statement are shown in Figure 1. Pleas were near or at ceiling for three of the four groups. In contrast, defendants who denied guilt had lower plea rates, at 69.9%. Among the deniers who did not plead guilty, the majority of cases were dismissed.

However, because there are many factors that can influence plea outcomes, we computed a series of correlations with our three primary variables and those listed in the rows of Table 2. Because defendant statement outcomes were on an ordinal scale, we created dummy variables (yes/no) for each category, and then computed Spearman correlations. For example, for the dummy variable no statement, the 38% in this group would be coded as a yes (1), whereas the remaining 62% would be coded as a no (0). As shown in Table 2, there are several factors that significantly correlate—albeit weakly—with both defendant statement outcomes and whether the defendant pled guilty (as well as plea discount, discussed below).

To account for these factors, a logistic regression predicting pleas was conducted with the variables listed in Table 3, $\chi^2(12) = 244.31$, $p < .0001$, Nagelkerke $R^2 = .44$. In comparison to defendants who fully confessed (the reference category), defendants who denied guilt had significantly lower guilty plea rates. Partial and full confessors, and those not questioned by police, were equally likely to plead guilty (see Figure 1). Thus, our first hypothesis that confessors (regardless of degree) would have higher plea rates was partially supported. In addition, in line with the shadow model, those with more severe charges and those whose cases were rated higher in evidence strength were more likely to plead guilty than their counterparts. For example, cases

that ended in a guilty plea had an average evidence strength score of $M = 5.31$ ($SD = 1.79$) versus cases that did not end in a plea, $M = 3.12$ ($SD = 1.87$), $d = 1.20$. There were also significant effects of time from incident to arrest, and from arrest to disposition, such that those who pled guilty had shorter time periods than those who did not plead guilty. For example, the time from incident to arrest for those who pled guilty was 47.35 days ($SD = 142.66$) in contrast to 148.61 days for those who did not plead guilty ($SD = 218.30$), $d = .55$. Finally, men (94%) had higher guilty plea rates than women (84%).

Defendant Statement and Plea Discount

Our second question was, how does the presence of a confession (and its variants) influence the plea discount? Of those who pled guilty, most received a “bargain,” in that their charges/sentences were reduced from the statutory risk posed by their initial charges (in combination with their criminal history). More specifically, 78% of those who pled guilty received plea discounts that ranged from a low of 27.27% to a high of 99.72%. In contrast, 22% of the plea sample did not receive a discount, but rather pled guilty to the initial charges. A chi-square analysis with yes/no plea discount and defendant confession outcome was significant, $\chi^2(3) = 434.40$, $p < .0001$, $\phi = .47$. Partial confessors who pled guilty were by far the least likely to have received a discount; 59.5% of them did not receive a discount, in contrast to 7% of those not questioned by police, 11.6% of deniers, and 19.2% of full confessors.

We next conducted an analysis of variance with defendant statement as the independent variable and plea discount as the dependent variable, $F(3, 1914) = 116.244$, $p < .0001$, partial $\eta^2 = .15$. As seen in Figure 2, defendants who provided partial confessions received the smallest plea discount; effect sizes (Cohen’s d) ranged from .77 to 1.17 in comparison to the other three groups. The plea discounts of those not questioned by police and those who denied guilt were not significantly different, $p = .16$, $d = .23$. The difference between full confessors and those not questioned ($d = .23$) and those who denied guilt ($d = .41$) were statistically

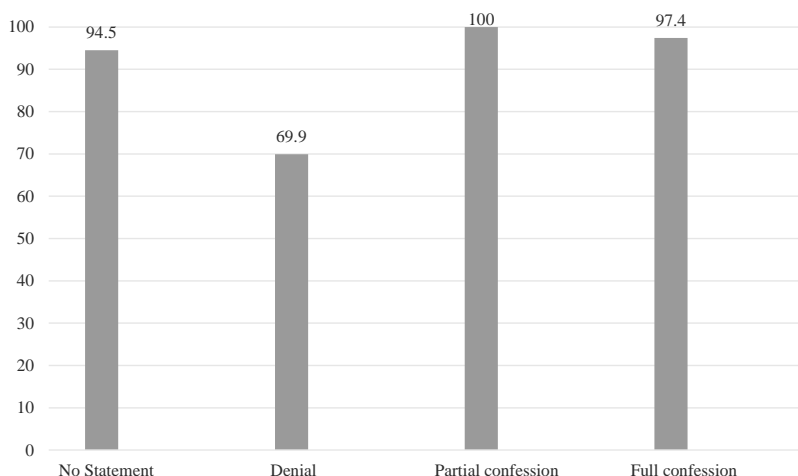


Figure 1. Proportion who pled by defendant statement outcome. See the online article for the color version of this figure.

Table 2
Correlations Between Key Variables

	No statement	Denial	Partial confession	Full confession	Plea	Plea discount
County	.20***	-.02	-.21***	-.05*	.02	-.06**
Age	.10***	-.08***	.14***	-.18***	-.05*	.05*
Gender	.15***	-.13***	.06**	-.15***	.14***	.11***
Minority	.26***	-.05*	-.17***	-.13***	.02	.00
Arrest charge severity	-.21***	-.04	.22***	.09***	.09***	.06**
Number of initial charges	-.10***	-.02	.27***	-.10***	.01	.12***
Incident to arrest (days)	.05*	.14***	-.23***	.04	-.17***	-.12**
Arrest to disposition (days)	-.20***	.16***	.10***	.04	-.09***	-.05*
Perceived strength of evidence	-.23***	-.27***	.28***	.22***	.25***	.23***

Note. County: 1 = County A; 2 = County B; Gender: 0 = female; 1 = male; Minority: 0 = no; 1 = yes; higher scores = less severe charges; perceived strength of evidence: 1 = weakest; 7 = strongest.
* $p < .05$. ** $p < .01$. *** $p < .0001$.

significant ($p \leq .001$), though the effect sizes are considered small to medium.

Again, to account for the significant relations between plea discount and defendant and case characteristics (see Table 2), we conducted a multivariate regression analysis, using plea discount as the dependent variable. The analysis was significant, $F(12, 1675) = 40.49, p < .0001, Adjusted R^2 = .22$. As shown in Table 4, in comparison to those not interviewed by the police (the reference category), both partial and full confessors received significantly lower plea discounts. In addition, defendants with more and less severe charges at the onset of their case received worse plea deals than their counterparts. Interestingly, cases rated higher in perceived evidence strength had larger discounts. Defendant age and time from arrest to disposition were negatively related to plea discounts, such that younger defendants and those whose cases took longer to process received larger discounts than their counterparts.

Discussion

The present study was aimed at exploring relations between confession evidence and guilty pleas. To our knowledge, few, if

any, studies have examined how admissions to the police, whether partial or full, influence the plea decision and the value of the plea. In contrast, the construct of remorse in criminal justice decision-making has been discussed extensively, and the general consensus is that defendants' remorse mitigates punishment (Bibas, 2012; O'Hear, 1996). Indeed, reductions for accepting responsibility have been institutionalized in sentencing guidelines. Although authors often lament that remorse is an ill-defined concept (Ward, 2006; Zhong et al., 2014), a confession, particularly when complete, can be construed as an expression of remorse. As discussed in more detail below, our findings contribute to the increasing knowledge base on relations between remorse, confessions, and sentencing outcomes.

Confessions and the Guilty Plea

Our first prediction was that defendants who confessed, either partially or fully, would be more likely to plead guilty than those who did not confess (or those not questioned by police). Overall, we found some support for this hypothesis. Specifically, 97% to 100% of partial and full confessors pled guilty. In contrast, only 70% of defendants who were questioned by police but denied the

Table 3
Logistic Regression Predicting Guilty Pleas (0 = Not Pled Guilty; 1 = Pled guilty)

	B	Wald (1)	Exp(B)	95% CI
No statement ^a	-.16	.07	.85	.26-2.82
Denial ^a	-2.40	16.94***	.09	.03-.29
Partial confession ^a	15.85	.00	—	—
County	.62	1.60	1.86	.71-4.87
Defendant age	-.01	.71	1.00	.96-1.00
Defendant gender	1.30	18.36***	3.67	2.02-6.64
Defendant race	.61	3.21 ^t	1.85	.94-3.62
Arrest charge severity	.48	6.76**	1.61	1.12-2.31
Number of initial charges	.14	1.60	1.16	.92-1.45
Time from incident to arrest	-.002	18.06***	1.00	.997-.999
Time from arrest to disposition	-.002	4.79*	1.00	.997-1.00
Perceived strength of the evidence	.52	33.16***	1.68	1.41-2.00

Note. County: 1 = County A; 2 = County B; Gender: 0 = female; 1 = male; Minority: 0 = no; 1 = yes; arrest severity: higher scores = less severe charges. Perceived strength of evidence: 1 = weakest; 7 = strongest.

^a Reference category = full confession. ^t = .07.

* $p < .05$. ** $p < .01$. *** $p < .0001$.

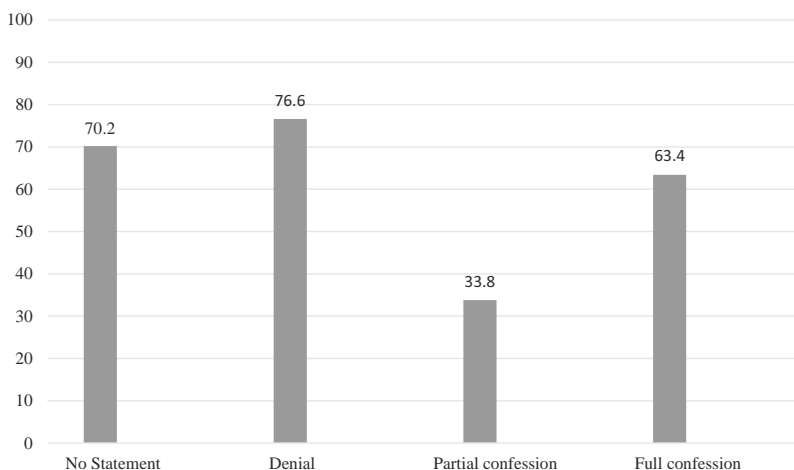


Figure 2. Plea discount by defendant statement outcome. See the online article for the color version of this figure.

crime pled guilty. Even after considering many other factors known to influence guilty pleas, such as the perceived case strength and defendant characteristics, these differences between deniers and confessors held. However, in contrast to our prediction, defendants who were not questioned by the police also pled guilty at a high rate of 94.5%, a rate slightly lower but not significantly different from confessors. It is possible that the reasons why this group was not questioned by the police also explain the high rates of pleading guilty. For example, as shown in Table 2, being in the “no statement” group was negatively correlated with arrest severity and time from arrest to disposition. Thus, it is possible that this group, having less severe initial charges, pled guilty in order to have their cases disposed of more quickly. This pattern is consistent with Feeley’s (1979/1992) argument that “the process is the punishment.” He argued that the processing of the case, particularly the low-level ones that he studied, itself imposes costs on defendants (e.g., time costs of court appearances, mone-

tary costs of legal counsel), and defendants are motivated to plead guilty in order to avoid these costs.

Our prediction that confessors would be more likely to plead guilty stems from two related notions. First, confession evidence, a form of direct evidence (Heller, 2006), is highly valued by jurors, judges, and prosecutors. For example, in the laboratory, Kassin and Neumann (1997) found that when a confession was in evidence, mock jurors voted to convict significantly more often than when presented with an eyewitness identification, character witness, or control conditions. And because triers of fact tend to believe statements against one’s self-interest (see Kassin et al., 2010), confessions that are partial or full would be expected to increase trial convictions. Simply put, confessions equal strong evidence at trial, and therefore can be strong inducers to avoid the risk of trial by pleading guilty.

Second, the predominant theory of defendant plea decision-making, “bargaining in the shadow of trial” (Bibas, 2004), sug-

Table 4
Multiple Regression Predicting Plea Discount

	B	β	t	95% CI
Denial ^a	-1.38	-.01	-.46	-7.31-4.54
Partial confession ^a	33.72	.37	14.36***	29.11-38.33
Full confession ^a	4.31	.05	2.15*	.38-8.24
County	243	.02	.33	-2.48-7.34
Defendant age	-.22	-.08	-3.31**	-.35--.09
Defendant gender	.05	.00	.02	-4.13-4.23
Defendant race	1.80	.03	1.03	-1.62-5.23
Arrest charge severity	1.69	.06	2.31*	.26-3.13
Number of initial charges	1.86	.08	3.69***	.87-2.85
Time from incident to arrest	-.01	-.03	-1.45	-.02-.003
Time from arrest to disposition	-.01	-.06	-2.48*	-.02--.003
Perceived strength of evidence	3.40	.18	7.10***	2.46-4.34

Note. Plea discount: higher scores = larger discounts; County: 1 = County A; 2 = County B; Gender: 0 = female; 1 = male; Minority: 0 = no; 1 = yes; arrest severity: higher scores = less severe charges. Perceived strength of evidence: 1 = weakest; 7 = strongest.

^a Reference category = no statement.

* $p < .05$. ** $p < .01$. *** $p < .0001$.

gests that defendants, acting as rational actors, base their plea decisions on forecasted outcomes at trial. Thus, those with stronger evidentiary cases—such as those who confessed—should be more likely to think their chances of a trial acquittal are slim, and be more likely to accept plea offers. In the present study, we found some support for this theory in that confessors (partial and full) were more apt to plead guilty, as well as those with cases perceived to be stronger in evidence. Other studies have also found support for the shadow model. For example, Bushway and colleagues (2014) found that prosecuting and defense attorneys in either offering advice to their (hypothetical) clients or making plea offers bargained in the shadow of trial (see also Kramer, Wolbransky, & Heilbrun, 2007; Pezdek & O'Brien, 2014). Thus, although there are many reasons to suspect that defendants and attorneys are not rational actors in the context of plea decisions (see Bibas, 2004; Redlich et al., in press), there is amassing evidence that at least some bargaining occurs in the shadow of trials à la the strength of the evidence.

Confessions and Sentencing

We also examined how defendants' statement to the police influenced their sentencing outcomes. Because our focus was on the plea value (or discount), we were limited to those who pled guilty, which made up 90% of our sample. We hypothesized that full confessors would receive the largest discounts; because of the strong relationship between remorse and leniency, full confessors would be perceived as the most remorseful and thus receive less punishment (Gold & Weiner, 2000). Our hypothesis was only partly supported. In support, partial confessors, who may be seen as less remorseful, received significantly smaller discounts than the three other groups. They were also 3 to 8.5 times less likely to have received any plea discount. To the extent that partially confessing is a proxy for low (or no) remorse, this pattern of findings is consistent with the findings of Gold and Weiner (2000). Specifically, they found that only confessions that expressed remorse resulted in less punishment. Thus, an important next step for researchers will be to further disentangle remorse and confessions, and examine whether partial confessors are viewed as significantly less remorseful than full confessors.

However, in contrast to our prediction, deniers received the largest discount, a discount that was significantly larger (by 13.2 percentage points; Figure 2) than that received by full confessors (but not than those not questioned by police). Deniers could be expected to be viewed as the least remorseful. They were questioned by the police (in contrast to the no-statement group) but chose to deny. Of course, the possibility remains that the deniers, as a group, included more wrongly charged (innocent) individuals and/or had weaker evidence against them. Indeed, deniers were the least likely in our sample to have pled guilty, and being in the denial group was negatively correlated with perceived evidence strength. Innocence (whether merely perceived by the defendant or actual) and weak evidence can potentially explain both the lack of admission to the police and a more lenient sentence. In questioning the degree to which not guilty verdicts reflect innocence, Givelber and Farrell (2012) speculated that about one in five defendants who proceed to trial and are acquitted are factually innocent; this ~20% rate is based on their discovery that 42% of defendants refuse to plea because of their proclaimed innocence, and within

this group, half are acquitted at trial. However, without ground truth information in the present study, we cannot know if these deniers were innocent or guilty.

Interestingly, we also found that perceived strength of the evidence was *positively* associated with plea discounts, indicating that stronger evidence resulted in larger plea discounts. This finding appears to be in opposition to the relatively large literature finding that strength of the evidence drives trial convictions (e.g., Devine, Buddenbaum, Houpp, Studebaker, & Stolle, 2009) and plea convictions (Emmelman, 1997). However, our findings deal with the size of the plea discount rather than the yes/no plea decision (or conviction). Though there has not been much research done on plea discounts (particularly studies that examine possible factors that influence the size of discounts), Redlich and colleagues (2016) found plea discounts to be smaller when certain evidence was present (i.e., confession, eyewitness identification, and DNA match). One possibility for this somewhat counterintuitive set of findings relates to the timing of plea offers and acceptances. Kutateladze, Andiloro, and Johnson (2014) reported that the New York County District Attorney's Office practices a "best first" policy, which mandates that the first plea offer is the most favorable to the defendant and any other subsequent offers will be less lenient. If defendants with stronger evidence against them are more likely to accept initial plea offers (forecasting their likelihood of being convicted at trial), such "best first" policies can explain positive relations between evidence and leniency. We do not know if the two participating DA Offices practiced such a policy more than a decade ago. However, we did find that perceived strength of the case and time from arrest to disposition were negatively correlated such that stronger evidentiary cases were processed more quickly than less strong ones.

Limitations and Conclusions

To our knowledge, the present study is one of the first to examine how confession evidence influences plea rates and plea discounts. As such, implications of our findings for practice and policy are unclear and would be premature at this time. Further, certain limitations to our methods and sample warrant our conclusions as preliminary. First, although obtaining access to DA case files appears to be unique, we were unable to discern ground truth. Like all field studies, it was not possible to separate the guilty from the innocent. However, we did code for strength of evidence, which may serve as a partial substitute for guilt-innocence. On a related note, although we had intended to code for factors relevant to the reliability of evidence, we did not find these to be part of the case files. For example, interrogation length is known to affect the reliability of confessions (Kassin et al., 2010). However, length of the interrogation was recorded in only nine of the over 500 files we reviewed. This lack of reliability-type information may be related to the fact that 90% of our sample pled guilty, and thus these types of factors were not investigated and/or noted. One possibility for future research is to conduct more qualitative research, such as convening expert panels with defenders and prosecutors, to complement the more quantitative findings (e.g., see Gould, Carrano, Leo, & Young, 2013).

Second, part of our hypotheses related to remorse. However, we were not in a position to directly code remorse, but rather used the degree to which defendants confessed (or denied) as a proxy for

remorse. Because confessions can be remorseful or not in their content (Gold & Weiner, 2000), future research should examine how remorse more directly influences guilty plea rates and the size of plea discounts. Remorse is only one of numerous factors that can affect plea decision-making, and thus it is also important to measure and examine remorse in conjunction with other factors. For example, pretrial detention is known to influence plea rates (e.g., Kellough & Wortley, 2002) but we did not have access to the length of time, if any, defendants in our sample spent in jail predisposition. The jail booking and release dates, if applicable, were often not recorded in the DA case files. Thus, future research in this area should control for this factor. Finally, because 90% of our sample pled guilty, we were not able to differentiate between trials, dismissals, and other outcomes in the nonplea group. This high prevalence of guilty pleas was somewhat unexpected; in large urban counties, of those arrested, pleas account for 65% of outcomes (in contrast to 95% of convictions; Cohen & Kyckelhahn, 2010). Thus, that 90% of cases in our sample were resolved by guilty pleas highlights the overreliance of pleas in the United States as well as the need to examine small- and midsized counties.

To conclude, it has been suggested that defendants who confessed to the police are treated at least differently, if not more harshly, than those who do not offer incriminating statements (Kassin, 2012; Leo, 1996). In the present study, we found that whereas confessors (either partial or full) had the highest guilty plea rates, partial confessors received the lowest benefits (in terms of their plea discount) from the plea deal in comparison. We also found that defendants who denied their guilt to the police were the least likely to plead guilty, and had the largest-sized plea discounts when they did plea. These findings about deniers are consistent with the idea that confession increases the probability of conviction, driving both the willingness to accept a plea and the size of the plea discount. Apparently, accepting responsibility for the crimes charged leads to harsher, rather than more lenient, outcomes: more convictions (via pleas) as well as fewer and smaller reductions in charges/sentencing. At the same time, providing only partial confessions in comparison to taking full responsibility resulted in the smallest plea benefits by far.

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