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Sometimes Ignorance is Bliss: Investigating Citizen Perceptions of the Certainty and Severity of Punishment

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Abstract Deterrence lies at the heart of the criminal justice system and policy. There is a lack of information on citizen's perceptions regarding a critical element of the deterrence process as it manifests through the communication of sanction threats. This study uses data from over 400 adults to examine their knowledge regarding the probability of detection and the average punishments for DUI, and also assesses the contribution of demographic and theoretical variables in predicting perceptions of detection probabilities and punishment estimates. Results show that persons overestimate the likelihood of detection and provide higher estimates for average sentence lengths, but very few variables predict deterrence perceptions. An investigation of the resetting effect shows that persons tend to lower the estimated likelihood of punishment after experiencing a punishment. Deterrence may work better if researchers and policy officials understand what influences these perceptions and how they may be modified.

Keywords Deterrence · Punishment · Attitudes · Policy

Introduction

Perhaps no single theoretical framework has been as central to criminology and criminal justice as deterrence (Beccaria, 1764; Bentham, 1789; Zimring & Hawkins, 1973;

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Andenaes, 1974). Deterrence theory holds that the threat of certain, swift, and severe sanctions will serve to inhibit individuals (specific deterrence) from committing crime and will also prevent the commission of crime by other potential offenders (general deterrence). To the extent that the law and actors of the criminal justice system are effective communicators of the threat of detection and punishment and to the extent that prospective offenders are attuned to this threat and consider it credible, then deterrence assumes that a careful weighing of the risks and rewards associated with offending will produce a cost/benefit calculation favoring the costs of crime and thereby inhibit criminal activity (Waldo & Chiricos, 1972; Saltzman, Paternoster, Waldo, & Chiricos, 1983).

To date, there has been much theoretical and empirical commentary with respect to deterrence and that knowledge base has produced a myriad of findings (Pratt, Cullen, Blevins, Daigle, & Madensen, 2006). Most notably, the extant research suggests that the certainty of punishment is the most important (and relevant) of all facets of the deterrence framework (Nagin, 1998), that individuals consider their own experiences and consequences as well as those of others' when estimating the costs of crime (Stafford & Warr, 1993), that individuals consider both the costs and benefits in the decision to offend (Nagin & Paternoster, 1993), that individual differences influence the risk/reward decision calculus (Piquero & Tibbetts, 1996), and that active offenders continue to consider sanction threats in decisions to offend and continue offending (Decker, Wright, & Logie, 1993; Piquero & Rengert, 1999; Loughran, Piquero, Fagan, & Mulvey, in press).

A very limited amount of research has been undertaken with respect to the extent of public knowledge of the existence and terms of legal threats or the extent to which the public perceives the accuracy with which the justice system detects criminal activity and subsequently punishes it. This lack of empirical inquiry has, in turn, precluded the development of any information about the public's knowledge on sanction threats or about the sources from which people obtain what information they do have and how they may call on it at the point of their decision-making. Zimring and Hawkins (1973, p. 142) made these observations over 40 years ago and they largely hold true today.

At first glance, some readers may ask whether information on the public's knowledge regarding the administration of justice is useful. Our view is that such an investigation is important for both theory and policy. Theoretically, the core of the deterrence framework is that certain, swift, and severe sanctions stand as the barrier between the individual and their decision to offend. As a foundation of the law and legal system, deterrence assumes that individuals consider the costs of crime when deciding to offend. More generally, if individuals do not hold such pro-deterrence perceptions, consider them at the point of the offending decision, and choose to refrain from offending because of the threat of sanctions, then doubt would be cast on the viability of deterrence to help criminologists understand what predicts the decision to offend and not to offend. Also, in his review of the deterrence literature, Nagin (1998) observes that it is not clear how or if risk perceptions are grounded in any reality, and that current perceptual research dealing with the link toward 'thin-air' perceptions converging toward something more objective has focused on active offenders. Our study informs this perceptual question by assessing generalizability a) to the general population, and b) across different crime types.

With respect to policy, if sanction threats are to be effective as a means of controlling crime, then the public must know that people who commit the prohibited behavior may

be caught and punished—for if they are not, the threat of punishment will not affect the rate of that behavior. Toward this end, Zimring and Hawkins (1973, p. 143) reference a 1968 study that indicated that people were not informed about the specific penalties provided. More specifically, surveys in California and Nebraska showed that the public knew little about the legislatively proscribed minimum and maximum penalties for a variety of crimes. The California data showed that Adult Authority prisoners (the highest-risk group of all) displayed a high level of knowledge about maximum and minimum penalties for most serious crimes, were sensitive to changes in penalties, and with a few exceptions had the greatest knowledge about penalties, while college students were able to reply correctly more often than any other group that the legally prescribed penalties for marijuana possession had not changed (Zimring & Hawkins, 1973, p. 145). On the other hand, inmates of Youth Authority facilities were not better informed than the general public, even though the former group was much more likely to commit crime in the future. Students from high schools in high-delinquency areas knew just as little about minimum and maximum adult penalties as students from high schools in low-delinquency areas. Only 8% of public citizens from California gave correct answers for 1st degree robbery, 35% for robbery, 16% for rape with injury, and 17% for forgery (Zimring & Hawkins, 1973, p. 145).

In short, threat communication is very important from a deterrence (and justice system) perspective because for deterrence to work, individuals must perceive that crime will be detected and punished, which, in turn, will serve to heighten sanction threats and thus reduce criminal activity. As Zimring and Hawkins (1973, pp. 146–147) observe:

> "If information is to play a role in deterring individuals from criminal conduct, they must have access to it and must remember it at the time that decisions about criminal conduct are made. With this task as a goal, effective communication will require that the message be delivered in ways that will make members of the threatened audience pay attention and remember the information being conveyed; and, if possible, that the information contained in the threat be associated with the threatened behavior in the minds of the audience so that their recollection of the terms of the threat will be greatest when it is most needed—at the time when criminal alternatives are considered."

Thus, because the deterrent effect of the law depends, in part, upon citizen's knowledge of the law, the penalties outlined, and the punishment prescribed, public perceptions regarding sanction threats are very important because findings relate directly to the operation of the criminal justice system (Zimring & Hawkins, 1973, p. 297). Importantly, even if the public is ignorant of the penalties for some offenses in relation to which they are at risk of offending, it does not necessarily follow that lack of knowledge results in failure of deterrence (Zimring & Hawkins, 1973, p. 300). Rather, it could indicate that they are not well-informed as ordinary citizens, that the system does not effectively communicate sanction threat probabilities, or that, for some individuals, sanction threats are inconsequential because they are either deterred via other (moral) means (Bachman, Paternoster, & Ward, 1992) or are impervious to sanction threats in the first place, i.e., they are 'undeterrable' (Andenaes, 1974; Pogarsky, 2002). Regardless of the variation among members of the general population in this regard, as Zimring and Hawkins (1973, p. 144) note: "even if only 10% of a

population knows the specific penalty for a crime, that 10% could include the overwhelming majority of those for whom the threat of punishment is necessary."

Since Zimring and Hawkins' early work, there have only been a few investigations of the link between actual and perceived punishment perceptions. Erickson and Gibbs (1978) obtained data from a random sample of Arizona residents who were asked to estimate the probability of arrest for ten offenses. Using offense type as the unit of analysis, their results indicated a modest correlation between objective and perceived certainty of arrest. Horney and Marshall (1992) analyzed punishment perceptions among a sample of incarcerated Nebraska felons to examine the relationships among perceived risk of arrest, arrest history, and offense frequency. Their results showed that risk perceptions were formed in a manner strongly consistent with a rational choice perspective. Kleck, Sever, Li, and Gertz (2005) combined aggregate objective punishment measures from 54 large urban counties along with data from a large probability sample of urban residents in those counties who reported about their perceptions of punishment risks for four serious crimes (robbery, criminal homicide, aggravated assault, burglary) over the preceding ten-year period in order to relate actual punishment risks to residents' perceptions. Their analysis produced four key findings. First, perceived estimates of average sentence lengths were slightly more severe than actual sentence lengths for three of the four offenses but the public greatly under-estimated the percent of convicted criminals who are given a jail or prison sentence. Second, there was no impact of actual punishment levels (certainty, severity, or celerity) on perceptions of punishment for the four serious crimes. Third, there were no differences in the actual/perceived punishment relationship between offenders and non-offenders. Finally, very little of the variance in individual punishment perceptions was explained in the models by the large set of predictors. Lochner (2007) used data from the National Longitudinal Survey of Youth to examine how various factors, including local official arrest rates and perceptions, influenced individual perceptions about the probability of arrest for auto theft. Results indicated that while the county arrest rate for motor vehicle theft was initially positively associated with individual perceptions of the perceived probability of arrest, this effect disappeared as other demographic and socioeconomic variables were introduced. Moreover, even in the most fully-specified model, the amount of variance explained was never greater than 0.03.

Current Focus

This study examines public knowledge regarding a critical element of the deterrence process as it manifests through the communication of sanction threats. Specifically, we ask a series of questions determined to gauge: (1) knowledge regarding the probability of detection for driving under the influence, (2) knowledge regarding the average punishments for certain crimes, and (3) the relative contribution of demographic and theoretical variables in predicting knowledge about detection probabilities and punishment estimates. Because the public may provide correct/incorrect and/or over-/under-estimates regarding both detection probabilities and punishment averages, understanding their general perceptions and the factors associated with them is of considerable theoretical and policy interest. In addition

to these basic questions, we also attempt to unpack citizen attitudes by exploring specific hypotheses regarding particular types of individuals and/or particular types of offenses and experiences. Specifically, we assess Zimring and Hawkins' (1973, p. 146) hypothesis: 'Unless he is sophisticated, a person who is more likely to commit crimes at some future time does not have much more general knowledge about penalties than the rest of the population. At the same time, the more likely a person is to commit a crime, the more likely he is to know the penalty for that particular crime as opposed to other crimes." Thus, we also examine how previous criminal activity influences perceptions of detection and penalty levels. This study advances prior research by examining threat communication with a national sample of adults and expanding the range of deterrence-related questions and issues investigated.

Data & Methods

Data for the current study were collected as part of a nationwide survey beginning on September 19th, 2009 and ending on December 28th, 2009. A list-assisted sampling method was used to develop the random-digit dial sample (Tourangeau, 2004, pp. 778–779), and subsequently trained interviewing staff conducted 420 household interviews. Random household respondents were selected by interviewing the person in the household over 18 with the "most recent birthday" (Kish, 1965). The average length of the interview was 22.9 min.[1]

The overall response rate for this research was 32.8%.[2] Cases of unknown eligibility, such as answering machines, busy signals, no answer, and known ineligibility, such as disconnected numbers, businesses, and fax numbers, were excluded from this calculation as recommended by the American Association for Public Opinion Research (2008). Additionally, a five-callback rule before substitution was implemented for records of unknown eligibility.[3]

Several measures were taken to increase response and completion rates. Those who initially refused were contacted again later and asked to complete the survey. Household respondents that continued to refuse were later contacted by a supervisor and encouraged to participate. Of those beginning the survey, 91.1% completed the interview. Only 8.9% of those beginning the survey finished less than 100% of the questions, resulting in 41 partial completes.

Trained supervisors monitored the interviews on-site. In order to minimize interviewer error, 10% of completed interviews were reviewed by supervisors for accuracy by comparing selected responses to digitally recorded excerpts of interviews or during live monitoring. An additional 5% were called back to verify

[1] The sampling frame for this research is all US households with working land-line phones. Also, households with land-line numbers ported to cellular phones would be included in the sampling frame. Only one member of each household was interviewed. If a juvenile answered the phone, the interviewers asked for a parent to continue the interview.

[2] AAPOR response rate calculation RR6.

[3] Of increasing concern to survey research is the use of call-screening devices (Tuckell & O'Neill, 2002). The Data-Tel predictive dialer used in this research anticipates call screening devices used to indicate that a household is ineligible, commercially known as a "Tele-Zapper." This software also passes calls that it deems as screened through the use of privacy blockers and screening services to an operator to determine the appropriate disposition code or action. This operator then continues the call normally.

selected answers with the respondent. Interviewers were monitored on a daily basis and provided feedback to ensure consistent administration across interviews.[4]

Variables

Dependent Variables

This study uses several deterrence-based outcome variables. The first set of questions asked respondents to indicate what they perceived the likelihood of detection to be for a specific behavior that they are likely to have personal/vicarious knowledge of. Specifically, they were asked: what is the probability of arrest while driving under the influence of alcohol (DUI)? Responses were open-ended, ranging from 0% (no chance) to 100% (guaranteed chance). Descriptive statistics indicated an average likelihood of detection of 35.22% (sd=29.211, median=25%).

Next, respondents were asked to provide an open-ended estimate regarding the average number of months they thought a convicted felon would serve for several crimes: (a) murder, (b) robbery, (c) arson, (d) burglary/b&e, (e) drug-trafficking, (f) drug-simple possession, (g) fraud, (h) embezzlement, and (i) antitrust.[5] Response options originally were designed to be provided by respondents in months, but a very small number of respondents reported alternative sanctions to include probation, fine, life imprisonment, rehabilitation, or the death penalty.[6] To deal with these responses, the following coding decisions were adopted in line with coding decisions by the United States Sentencing Commission (USSC): Probation, rehabilitation, and fine were coded as 0 months,[7] life imprisonment[8] was coded as 470 months, and death penalty[9] responses were excluded.[10]

[4] Although the data are collected on a population sample, less than one-third of the proposed sample actually participated. This may challenge the assumption of randomness, which is a problem when trying to provide estimates rather than testing hypotheses (Maxfield & Babbie, 2010).

[5] These crimes were chosen because, as will be seen, we were interested in comparing a range of high-profile/common crimes that the public is likely to be exposed to and for which we had comparable and *actual* data from the United States Sentencing Commission. Collecting and analyzing comparable state-level data would be incredibly difficult not only because such data is not uniformly available, but also because of the distribution of respondents across each state.

[6] Specifically, (a) antitrust had one probation, eight fine, and three life imprisonment; (b) embezzlement had one fine and four life imprisonment; (c) fraud had one fine and six life imprisonment; (d) drug possession had three probation, one rehabilitation, and two life imprisonment; (e) drug trafficking had nineteen life imprisonment and two death penalty; (f) burglary had three life imprisonment; (g) arson had ten life imprisonment and one death penalty; (h) robbery had five life imprisonment, and (i) murder had 78 life imprisonment and 12 death penalty.

[7] We recognize that probation, rehabilitation, and fines may still be regarded as some form of punishment, but nevertheless follow the USSC coding criteria.

[8] The decision to code life imprisonment responses as 470 months is consistent with how the United States Sentencing Commission deals with similar cases.

[9] Death penalty responses were negligible, and included two cases for drug-trafficking, one case for arson, and 12 cases for murder.

[10] There is no perfect method for comparing average sentence lengths obtained from our sample to average sentence lengths in the population. This is so because the respondents come from a variety of jurisdictions. The only comparison available is the nationally-based USSC data. As will be seen, the USSC data are driven by certain crimes (drug-trafficking, firearms, fraud, immigration) but still represent an adequate and acceptable comparison given the nature of our (general population) sample.

Our third and final deterrence-related perception is a recently conceptualized and investigated notion, the 'resetting effect', which is concerned with changes in individual perceptions—or a reset to some previous level—after some event (in our case, offending and its consequences) (Pogarsky & Piquero, 2003; Pogarsky, Piquero, & Paternoster, 2004; Matsueda, Kreager, & Huizinga, 2006). In earlier research, Pogarsky and his colleagues found that, especially after the rare event of being caught/punished for a low-detection crime, individuals reset their estimate of detection likelihood to an earlier—likely lower—level. Although there is some evidence of the resetting phenomenon, no research has assessed its correlates.

Respondents were asked a question designed to assess this resetting effect for a behavior that many respondents have been involved in (speeding) but yet face a low likelihood of detection (being stopped and ticketed)—especially in very short intervals of time. Specifically, respondents were given the following question: "If you got stopped and ticketed for speeding today, what do you think the probability is that you would be stopped and ticketed tomorrow?" Respondents provided an open-ended percentage ranging from 0% (no chance at all) to 100% (absolutely stopped).[11]

Independent Variables

Our study considers a number of independent variables that have been linked to criminal justice attitudes in prior research (Cullen, Fisher, & Appelegate, 2000). Demographic characteristics are considered first, and the majority (age, sex, and race) have been linked to involvement in criminal offending, criminal justice perceptions, as well as perceptions of sanction threats (Carmichael, Langton, Leuking, Reitzel, & Piquero, 2005; Pratt et al., 2006; Roberts & Hough, 2005). Respondents were asked what race they considered themselves to be, with corresponding response options including: White, Black, Hispanic, Latino, Mexican-American, etc., Asian, Pacific Islander, American Indian, Eskimo, Aleut, and Other. Because about 85% of the sample was White, this variable was recoded as: Non-White (0)/White (1). We also control for age (mean=52.329, sd=14.613, range=18–94), whether the respondent was married (= 70.36%), male (= 47.61%), how the respondent described themselves politically (Very liberal, Liberal, Middle of the road, Conservative, Very conservative—recoded as liberal=21.03%), whether the respondent was working outside the home on a full-time basis (yes=39.52%), and educational attainment (1st through 7th grade, 8th grade, 9th through 11th grade, 12th grade (finished high school), some college, no degree, AA Degree, Bachelor's degree, Master's degree, law, or similar graduate degree, Ph.D., M.D., other degree beyond Master's, Other), recoded as Bachelor's Degree or higher (=39.52%).

Two additional independent variables are theoretically expected to be related to our deterrence-based outcomes. First, recognizing the strong inter-relationships between support/respect for the police and legitimacy of the law/legal system (Tyler, 1990), respondents were asked about their level of agreement to the following statement: "I have a great deal of respect for the police". Response options included:

[11] This is but one way to measure resetting. One could also ask respondents to indicate what the new likelihood of detection would be compared to an earlier time point, i.e., 'yesterday'.

"Strongly Agree" (1), "Agree" (2), "Neither Agree or Disagree" (3), "Disagree" (4), and "Strongly Disagree" (5) (mean=1.957, sd=0.921).[12] Second, because previous criminal activity is strongly linked to deterrence perceptions via either deterrence/experiential processes (Nagin, 1998), respondents were asked to indicate whether they had "driven while you have had too much to drink" in the past 5 years (mean=0.126, sd=0.333). Response options were 'No' or 'Yes'. There were no problems with multicollinearity among the independent variables as no correlation was greater than r=.283.

Results

Perceptions of Detection Likelihood and Average Sentence Length

We begin by summarizing respondent's estimated likelihood of detection for driving under the influence (Fig. 1). Respondents indicated an average likelihood of detection of 35.22% (sd=29.21; median=25%; mode=10% (n=62) and mode=50% (n=65)). Further, 1% of the respondents said that there was a 0% chance of detection while 6.25% said that there was a 100% chance. Most relevant, respondents tended to provide large *over*-estimates for detection likelihood. Beitel, Sharp, and Glauz (2000) documented the probability of arrest while driving under the influence of alcohol (over 0.10) to be 0.0058, or about 1 in 200.

In addition to showing *over*-estimation of actual detection probabilities, the histogram in Fig. 1 reveals two other interesting points. First, the support of the distribution for DUI is spread out over the entire 0–100 range, suggesting that the responses are much more likely to occur uniformly across the entire range. A second interesting feature of Fig. 1 is the large jump in support at 50%. This tendency for individuals to respond in a '50–50' manner may be indicative of some inherent uncertainty in an individual's own belief about their own perception. Such uncertainty is perhaps itself an important deterrent mechanism.[13]

Next, we turn to our comparison of average sentence length for nine different offenses. Table 1 presents the respondents' estimated average sentence lengths (along with the median, standard deviation, and range)[14] as well as the average

[12] Research shows that persons who support/respect the police are more likely to perceive the law and the criminal justice system/authorities as legitimate, to perceive sanction certainty in a credible manner, and to engage in relatively little (if any) criminal offending (Tyler, 1990; Piquero, Paternoster, Pogarsky, & Loughran, 2011).

[13] The'50–50' response may also be due some bias associated with permitting respondents to generate their own probability responses (Fischhoff & Bruine de Bruin, 1999). Future research should consider providing respondents with an explicit response option scale to compare across methods.

[14] It is important to note that our question does not ask respondents to indicate what convicted felons 'should serve', but instead they are asked their knowledge associated with how many months, on average, they think a convicted felon "would serve" for a variety of crimes. Our primary interest is to investigate respondent's *knowledge* about what sentence lengths were *perceived* to be. Asking persons about the sentence length that criminals should serve may be more reflective of one's punishment preferences in real life. For example, if an individual perceives that a punishment for a particular crime is unlikely but believes that it should be punished more harshly, then this may be more indicative of their retributive philosophy than their deterrence-oriented knowledge—which is the focus of our investigation. Future research should consider addressing this question as well.

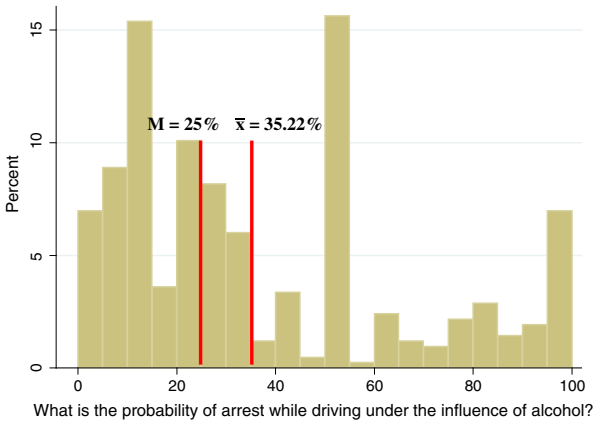

Fig. 1 Distributions of perceived likelihood of detection—DUI

sentence length (and median) for these offenses from the USSC 2007 data.[15] Two findings are worth highlighting. First, for all nine crime types, respondents provide higher average sentence lengths compared to the actual USSC average sentence lengths. Second, a comparison of the median values for the crime types however, yields a somewhat different picture. Although respondents provide higher median values for five crime types (burglary, drugs-simple possession, fraud, embezzlement, and antitrust offenses), the medians for the other—more serious/visible—crime types are much more in line with the medians from the USSC data.

What Predicts Detection Likelihood?

Table 2 presents an OLS regression model predicting respondent's estimated detection likelihood for DUI. This model is also estimated in a step-wise fashion, with demographic variables first, followed by theoretical variables, and then a full model combining the two.

The results from the first model indicate that three variables, white, male, and higher educated respondents, provide a lower likelihood of detection for DUI. With respect to the theoretical variables, police legitimacy exhibits a marginally significant positive effect indicating that persons who do not have much respect for the police are more likely to perceive the likelihood of DUI detection to be high. When all the variables are considered together in the third model, once again white, male, and education are significant predictors but police legitimacy is not. In short, these results indicate that much more goes into determining respondent's estimated

[15] According to the USSC (2007:Appendix A), "Using sentencing information obtained from the Judgment of Conviction order, *Average Sentence Length* is reported as the mean and median terms of imprisonment (including any months of alternative confinement as defined in§5C1.1) ordered for cases committed to the Bureau of Prisons. Cases that receive no term of imprisonment (i.e., probation) are included in the average. Cases for which a term of imprisonment is ordered, but the length is indeterminable, are excluded. In most cases for which the exact term is unknown, the Judgment of Conviction order merely specifies a sentence of time served. Prior to fiscal year 1993, the Commission defined life sentences as 360 months. However, to reflect life expectancy of federal criminal offenders more precisely and to provide more accurate length of imprisonment information, life sentences and all sentences above 470 months are now capped at 470 months." http://www.ussc.gov/ANNRPT/2007/Table13.pdf (accessed April 12, 2010).

Table 1 Comparison of average sentence length: our sample versus USSC data

Our sample					USSC	
Crime	Mean months	Median months	SD	Range	Mean months	Median months
Murder	326.471	240	265.545	24–2280	258.5	235.0
Robbery	109.329	60	132.156	1–1200	85.1	66.5
Arson	134.010	60	169.870	1–1200	80.9	60.0
Burglary/B&E	98.474	60	150.562	0–1200	19.0	18.0
Drug-Trafficking	156.784	72	241.194	0–3000	83.2	60.0
Drug-Simple possession	58.124	12	100.152	0–900	5.2	0.0
Fraud	93.187	48	147.432	0–1200	19.0	10.0
Embezzlement	99.960	60	158.033	0–1200	8.3	4.0
Antitrust	66.109	24	144.702	0–1800	15.9	9.0

The USSC data (2007, Table 13) was based on the following number of cases: murder (n=81), robbery (n=1,120), arson (n=78), burglary/b&e (n=41), drug-trafficking (n=24,308), drug-simple possession (n=661), fraud (n=7,759), embezzlement (n=465), antitrust (n=15)

likelihood of detection than considered here (Kleck, Sever, Li, & Gertz, 2005; Lochner, 2007).

Next, we use the same independent variables to predict respondent's average sentence lengths for the nine crime types. Because most independent variables failed to significantly predict respondents' perceptions of average sentence length and in the interest of space, we forego a tabular presentation of these results and instead highlight crime-specific findings of interest.

Respondent perceptions of average sentence length failed to indicate any significant effects for murder, arson, and antitrust average sentence length. For robbery, burglary, drug trafficking, fraud, and embezzlement, only one variable had a

Table 2 Ordinary least squares regression predicting the likelihood of DUI detection

Variable	B	SE(B)	B	SE(B)	B	SE(B)
Age	−.168	.103			−.137	.106
White	−9.773	3.998*			−9.901	4.056*
Male	−11.029	2.829*			−10.883	2.874*
Liberal	−4.767	3.480			−5.159	3.505
Education	−16.400	2.881*			−16.186	2.927*
Married	−.003	3.141			.460	3.190
Employed	−.517	3.009			−.470	3.036
Police-Legit			2.615	1.571*	2.523	1.610
Prior DUI			−.979	4.314	.690	4.360
Constant	67.221	7.030	30.236	3.415	60.282	8.325
R-Square	.158		.006		.163	

*p<.05

significant effect, police legitimacy, indicating that respondents who reported having little respect for the police were more likely to report a higher average sentence length for robbery. At first glance, this may seem counterintuitive, yet two considerations are in order. First, there were a very small number of individuals who disagreed (8.83%) or strongly disagreed (1.43%) with the statement "I have a great deal of respect for the police", yet they also tended to report the highest average values (along with very high standard deviations). Second, it may be that there is something unique about the small subset of individuals who do not respect the police but at the same time believe that average sentence lengths are high—perhaps viewing the system as discriminatory both in terms of its personnel and how it metes out justice.[16] Only a few other variables were significant in these models. For drug trafficking, males perceived a lower average sentence length, while respondents who were employed outside the home on a full-time basis perceived a higher average sentence length for drugs-simple possession. In short, other than the police legitimacy effect, there was no clear or consistent pattern of relationships among the independent variables and respondent's perception of average sentence length indicating that other unmeasured variables are influencing sentence length perceptions (Kleck et al., 2005; Lochner, 2007).

Next, we return to the DUI detection likelihood perception question and recode the respondent's answers such that it reflects whether they correctly estimate the likelihood of detection risk. We match the respondent's estimates about the detection probability with 'real-world' estimates for the detection of DUI. By doing so, we effectively parcel the sample into correct and incorrect estimators, and then re-examine how the demographic and theoretical correlates relate to this newly formed variable. The proportion of the respondents who correctly estimated the likelihood of detection was 4.09% (n=17 reported 1% or less).

Table 3 presents the results of a logistic regression predicting correct detection estimation for DUI. Only one variable, male, was significantly associated with correct detection likelihood. Males were more likely than females to correctly estimate the probability of being stopped by the police for driving under the influence of alcohol and may be due to males' more extensive involvement in DUI in general and in this sample in particular as males were significantly more likely than females to report having driven while they have had too much to drink in the past 5 years (i.e., an experiential effect).[17] A model that includes the two theoretical variables failed to indicate any significant effect, and the final full model retained one significant effect for males. In sum, the results indicate that (a) most individuals incorrectly estimate the likelihood of being stopped for a DUI, (b) very few demographic and theoretical variables are implicated in individual perceptions, and

[16] We note that police legitimacy is correlated with other variables as expected. For example, individuals who report more disrespect for the police also tend to have participated in previous criminal activity.

[17] For instance, it is likely that individuals initially may have overinflated their perceptions of the true detection rate (i.e., individuals suspect the true rate is much higher than it actually is), yet through a rational updating process whereby they gain experience with repeated offending, they realize their perception is overinflated, and hence downwardly revise it. Because this process is highly dependent upon experience (Anwar & Loughran, 2011), these males who engage in the activity more may have better 'settled in' in their perceptions.

Table 3 Logistic regression predicting correct guessers DUI detection

Variable	B	SE(B)	B	SE(B)	B	SE(B)
Age	.011	.023			.004	.022
White	.554	1.068			.714	1.087
Male	1.782	.788*			1.797	.793*
Liberal	−.364	.803			−.277	.824
Education	.659	.596			.582	.610
Married	−.049	.699			−.107	.711
Employed	−.033	.641			−.010	.650
Police-Legit			−.267	.313	−.686	.481
Prior DUI			−.853	1.042	–	–[a]
Constant	−5.883	1.838	−2.573	.610	−4.250	2.039
Pseudo R-Square	.092		.012		.116	

[a] Coefficient for Prior DUI not estimated because it predicts failure perfectly

*$p<.05$

(c) inconsistent with Zimring and Hawkins' hypothesis, prior criminal activity does not significantly relate to accurate estimation of detection likelihood.[18]

Do Individuals Reset Deterrence Probabilities?

We close our analysis by examining the determinants of resetting using the same cadre of independent variables except for prior crime. Responses to the resetting question were somewhat censored. For example, 48% of the sample said that there was no chance at all (0%) that they would be stopped again and ticketed within 24 hours after their first such experience, while about 3% said that there was a 100% chance that they would be stopped and ticketed again. Given this distribution, we dichotomized the variable as 0 (i.e., no chance) versus 1 (non-0 chance) and estimated a logistic regression. This way, we knew that there was resetting with the 0 group (since it had to be a positive probability if they got caught before). The results (Table 4) show that across all three model permutations only one variable, age, is a significant predictor of resetting. Older individuals are more likely to provide a lower estimate of being stopped and ticketed (scoring in the 0 'no chance' category) than are younger individuals; that is, older respondents are more likely to reset their likelihood detection for a speeding violation perhaps indicative of a learning or experience effect (i.e., they have driven (and likely) sped more often, know that they will get caught sooner or later, but that once caught and ticketed, the chances are very slim of it happening again—especially so soon after the initial occurrence).

[18] To be sure, Zimring and Hawkins' hypothesis may have been geared to more serious offending groups (unlike our general population sample), such as the incarcerated offenders who were part of their more specific theoretical discussion.

Table 4 Logistic regression predicting resetting

Variable	B	SE(B)	B	SE(B)	B	SE(B)
Age	−.021	.008*			−.019	.008*
White	.075	.303			.063	.304
Male	.112	.213			.115	.214
Liberal	−.155	.265			−.168	.266
Education	−.185	.217			−.177	.217
Married	.007	.239			.042	.241
Employed	−.056	.227			−.059	.228
Police-legit			.145	.107	.111	.120
Constant	1.285	.546	−.223	.232	.969	.633
Pseudo R-square	.017		.003		.018	

*$p<.05$

Discussion

Using national data from over 400 adults, this study examined perceptions of deterrence-oriented sanction threats. Three issues were investigated. First, we obtained the public's estimate of the likelihood of detection for driving under the influence of alcohol, and also whether they were able to correctly predict the average sentence length for nine different crimes. Second, we investigated the contribution of demographic and theoretical variables to the afore-mentioned perceptions of the certainty and severity of punishment. Third, we examined the extent to which persons reset the probability of being stopped and ticketed for speeding in the future to some lower probability after previously being stopped and ticketed, as well as the predictors associated with this potential resetting effect. Several findings are highlighted.

First, respondents gave *over*-estimated likelihoods of detection probabilities for DUI and they also provided higher estimates for average sentence lengths (though the median values tended to be more similar). Second, an investigation of the predictors of these certainty and severity perceptions failed to reveal a consistent pattern of significant associations. For example, higher education was linked to a lower detection likelihood for DUI, while respondents with less respect for the police tended to provide higher average sentence lengths for several crimes, but no significant predictors emerged for average sentence lengths for murder, arson, and antitrust. Third, when we examined the predictors of correctly estimating the likelihood of detection for DUI, we found that very few respondents provided accurate 'real-world' estimates (only 4% provided correct estimates for DUI). Further, only among males did we find a significant association when we predicted respondents' correct estimates, indicating that males were more likely to provide correct estimates of likelihood detection for DUI. Finally, our investigation of the resetting effect indicated that while almost half of the respondents said that there was no chance at all that they would be stopped and ticketed the next day after just having been stopped and ticketed, only one variable, age, was a significant predictor—older individuals were more likely to reset

(i.e., provide lower estimates of the likelihood of being stopped and ticketed the next day). It may be that older respondents have a larger stock of experience from which to draw their perceptions from.

Although our study was one of the few to examine these issues, several limitations are worth noting. First, we were only able to solicit information from adults over the age of 18. It may be that the results observed would have differed had we been able to collect data for younger individuals who may have more (recent) experience with criminal offending and its consequences. Also, our use of a general population sample does not provide information on another policy-relevant group, i.e., active or incarcerated offenders. Given the differences highlighted earlier by Zimring and Hawkins, it would be useful to conduct a multi-sample comparison of deterrence-related perceptions. Third, we only examined certainty perceptions for one crime, DUI. While this decision was due to the common occurrence of DUI and the ability to obtain concrete estimates of its detection probability, it is unknown whether the public would provide better (or worse) estimates for other crime types. Fourth, future efforts should strive at obtaining a larger sample to further explore moderating influences and to ensure a higher response rate as well, perhaps by considering alternative means of data collection that improve upon the changing nature of phone usage. Finally, although our analysis focused on many common demographic factors, it only explored two theoretical variables (prior criminal activity and police legitimacy). There is a need to expand the range of independent variables in order to further document the determinants of sanction perceptions. Promising candidates would include vicarious experiences of punishment and punishment avoidance among one's family and peers, exposure to media information and sources, as well as morality and legal process variables.[19] It could also be that the perceived risk of DUI detection could be influenced by context-specific variables unique to the individual respondent's area in which they reside (police presence, DUI checkpoints, urban or rural, high crime neighborhood). Finally, it would be good to separate deterrence perceptions by jurisdiction to assess whether certainty and severity estimates for certain crimes are higher in jurisdictions with a higher incidence of those crimes.

Information concerning citizen perceptions associated with detection likelihood, sentence length, and resetting have not been empirically investigated, yet even the most basic data on these issues is important because of the *presumed* linkage between sanction perceptions and subsequent conventional or criminal behavior. As such, our study sought to provide some basic, descriptive information about several important deterrence-related perceptions that have been under-investigated. The collective set of findings show that (1) citizens *over*-estimate the certainty and severity of punishment, (2) they *in*correctly provide the true likelihood of detection for DUI, indicating that most people are not well-informed about the likelihood of getting caught, and (3) they are likely to *reset* their detection likelihoods to a lower level after being caught and punished. At the same time, findings also show that few variables significantly predict these perceptions and that previous criminal activity does not relate to such perceptions either.

[19] Here, null findings are important because they tell us about what does not matter and provides direction for investigating other sources of deterrence perceptions.

All of this may provide supportive fodder for the notion that deterrence does not work very well in large part because we do not know what influences these perceptions in the first place nor do we know much about how such perceptions change more generally. After all, we need to know what predicts/leads to such perceptions before we can begin to change them in any meaningful way such that they, in turn, prevent criminal activity. On the other hand, the extent to which citizens accurately perceive the true level of punishment certainty and severity may not make any substantive difference for deterrence. It may not be that what deters crime is the accuracy of one's perceptions, but instead whether one simply believes that there is a high level of punishment certainty and severity (as many of our respondents do).[20]

More work remains to be done regarding the determinants of certainty and severity perceptions. Prediction of deterrence perceptions has not been good in terms of identifying the relevant variables and then explaining much of the variance of these perceptions, yet it is a critical feature of a public policy based on deterrence and the threat of legal sanctions that expects one's sanction perceptions to prevent crime. On this front, Nagin (1998) observes that criminal justice policies designed to deter crime will only be successful if policies can actually manipulate perceptions. Although self-report surveys offer little support for the linkage between actual and perceived punishments, data from small scale interventions (Boston's Operation CeaseFire) indicate success at increasing sanction threat perceptions and altering criminal behavior (Kennedy, 2009). Studying those efforts may provide important clues into the threat communication process.

We believe that our work contributes to the deterrence literature in an important way. In his review of the deterrence research, Nagin (1998) observed that it was not clear how or if risk perceptions were grounded in any reality, and that current perceptual research dealing with the link toward 'thin-air' perceptions converging toward something more objective had focused on active offenders. Our study informs the field that this result may actually be somewhat more generalizable a) to the general population, and b) across different crime types. The findings emerging from our study provide a useful link to the theoretical issues raised by Nagin and offer a foundation for ensuing research.

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[20] This may be akin to the 'Sword of Damocles' finding from the Omaha Domestic Violence Experiment, in which the fear of detection and the threat of sanctions hangs over the offender's head (Sherman, 1992).

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