Motivated Cognition on the Bench: Does Criminal Egregiousness Influence Judges' Beliefs About Police Wrongdoing?

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On a normative level, judges are supposed to balance the scales of justice without regard for the individuals involved, much like Lady Justice,. However, no matter the rigor of the training or strength of the legal culture judges will not be transformed into a Roman deity. Judges will forever be human and susceptible to the same subconscious and uncontrollable biases of other humans. This acknowledgement of judges as human has crept into the legal literature in multiple ways. Under the rational choice model traditionally used in the law and economics approach, judges have multiple conflicting goals and make decisions that maximizes their utility. These goals can include the desire to follow precedent, avoid conflict with Congress, institute some legal philosophy, and reach a desired ideological policy or achieve more everyday concerns such as a desire for leisure (Epstein, Landes and Posner 2013; Maltzman, Spriggs II and Wahlbeck 2000; Epstein and Knight 1998; Hammond, Bonneau, and Sheehen 2005). This approach acknowledges the humanity of judges by noting that neutrally interpreting the law is not their sole goal.

The emerging field of law and behavioral economics takes into account another factor of judge's humanity that traditional law and economics leaves out. Humans are susceptible to motivated reasoning, subconscious biases and cognitive quirks over which they have little control and awareness. A vast literature has demonstrated that ordinary humans are susceptible to these biases (see Gilovich, Griffin and Kahneman 2002 or Kahneman 2003 for a review), and studies have begun to show that judges are also susceptible to them (Guthrie, Rachlinski and Wistrich 2007). These studies ask judges about hypothetical cases in surveys distributed at judicial education conferences and use experimental manipulations to show that in these hypothetical situations they fall prey to same cognitive biases as ordinary citizens. This interesting research leaves open the possibility that while judges exhibit these biases in a

hypothetical case, judges may overcome these biases in real cases. In this study, we examine legal decisions from actual cases to determine whether a bias shown to occur experimentally when ordinary citizens are asked to evaluate a legal case is also revealed in the pattern of decisions made by judges. Specifically, we follow the findings from Sood (2012) who shows that ordinary citizens are more likely to apply exceptions to the exclusionary rule and admit challenged evidence when the crime is more egregious, and that the subjects were unaware the egregiousness of the crime affected their decision-making. We show a similar pattern using a sample of Federal Court of Appeals cases. For highly intrusive searches, judges are much more likely to admit challenged evidence when the crime is against a person than when it involves other less egregiousness types of crime.

Behavioral Economics and Judicial Behavior

The purpose of behavioral economics is to examine how real people behave and how this behavior may differ from the predictions of rational choice theory. This approach has identified a large variety of cognitive biases and quirks to which humans appear almost universally susceptible. Perhaps, the most famous is Prospect Theory which shows that people treat losses differently than gains and judge situations based on the status quo rather than overall wealth (Tverksy and Kahneman 1992). Other prominent examples include the availability heuristic, which causes people to assess probability based on the ease at which some event can be recalled (Tversky and Kahneman 1973), and hindsight bias, which causes people overestimate the predictability of past events (Fischhoff 1975). Since the concern here is not with how ordinary humans behave but how judges behave, we do not need to go into an in-depth examination of the existing behavioral economics literature. Instead, we should concentrate on those studies that directly examine the behavior of judges. Most would agree that behavioral economics as a field

has contributed a great deal to our understanding of everyday human behavior. The question we want to answer is: What can it contribute to our understanding of judicial behavior?

Existing Experimental Evidence

One group of legal scholars – Chris Guthrie, Jeffrey Rachlinski and Andrew Wistrich – has published a series of studies that have begun to answer that question (see Guthrie et al. 2007 for a review of their studies). They have distributed multiple surveys to judges at judicial education conferences that include experimental manipulations involving hypothetical legal cases designed to test previously identified cognitive biases or heuristics. They found that judges are susceptible to biases such as the anchoring bias, hindsight bias and Prospect Theory. In the anchoring bias people have a tendency to anchor their numerical estimates based on the starting value. This can affect civil litigation because an initial settlement offer by either side provides an anchor that affects all subsequent judgments of an appropriate award. In their studies, the judges read about a case that involved no initial offer or an initial offer that was either clearly too low or clearly too high. Virtually all the judges dismissed the clearly improper initial offer, but the offer still affects the amount that judges awarded to the plaintiff. The amount in the condition where the initial offer acts as an anchor was significantly different from the no anchor condition without an initial offer. If the initial offer was clearly too high, the anchor increases the award amount, and if the initial offer was clearly too low the anchor decrease the award amount (Guthrie, Rachlinski and Wistrich 2001; Wistrich, Guthrie and Rachlinski 2005; Rachlinski, Guthrie and Wistrich 2006).

In another study, they showed that judges are susceptible to the biases predicted by Prospect Theory. Prospect Theory's basic prediction is that people base risky decisions on the status quo, and if a decision involves choosing between two gains they are risk averse and if it

involves choosing between two losses they are risk accepting (Tversky et al. 1992). Their study presented judges with a situation concerning settlement talks for a copyright case, and the judge was supposed to recommend whether the plaintiffs go to trial or settle the case (Guthrie et al. 2001). The settlement option represented a guaranteed $60,000, and the trial represented a gamble with an expected value of $50,000. The experimental manipulation involved whether the situation was portrayed from the viewpoint of the plaintiff where it is a choice between two gains or from the viewpoint of the defendant where it is a choice between two losses. As Prospect Theory predicts the judges were more likely to recommend the less risky settlement offer in the plaintiff condition than in the defendant condition (see Rachlinski et al. 2006 for a replication of this effect using a different situation and a different sample of judges).

Another set of their studies concentrated on the hindsight bias in which people overestimate the predictability of past events. This bias can affect judgments concerning liability and whether people should be awarded damages based past actions. The study described a legal case and experimentally manipulated whether a court of appeals vacated, affirmed or imposed a lesser sanction (Guthrie et al. 2001). The judges were then asked to rate the probability that each of these three situations would have occurred. Their results showed that the decision presented to them affected their judgment of the probability – i.e. in the affirm condition judges thought that a decision to affirm was more probable than in the other conditions. The authors argued that if judges were not susceptible to the hindsight bias, their knowledge of the outcome should not have affected their probability judgments. All of these studies show that judges are susceptible in at least some instances to cognitive biases like all other humans, even when those decisions involve legal judgments.

However, Guthrie and colleagues also identified an area where judges did not fall prey to the hindsight bias – in decisions on whether to issue a search warrant (foresight) or admit evidence obtained without a search warrant (hindsight). Across three different studies the percentage issuing the search warrant and admitting the evidence was never statistically significant (Rachlinski, Guthrie and Wistrich 2011). Guthrie et al. (2007) propose that it is the "highly intricate rules-bound nature of Fourth Amendment jurisprudence" that prevented judges from succumbing to the bias in this instance. This conclusion does not seem encouraging for our study here because we are looking for bias in the one area where they find none. However, the biases involved in the decision to exclude or admit evidence may not be as strong in a hypothetical case than in an actual case. As the authors note, "We suspect that in actual cases, judges would find it much more difficult to suppress damning evidence against a defendant who they strongly believe to be guilty than they would in our hypothetical situations" (Rachinski et al. 2011 p. 97). While some may discredit the findings from these studies because they believe judges would overcome the biases in actual cases, in some circumstances such as search and seizure decisions the bias may be even greater in actual cases than in hypothetical cases.

Existing Observational Evidence

At least one type of bias from behavioral economics is prevalent in legal doctrine and decisions. Prospect Theory states that people judge a situation by the status quo (Tversky et al. 1992), and another bias related to Prospect Theory called loss aversion states that people give more weight and importance to a loss than to a gain of similar size (Kahneman, Knetsch and Thaler 1991). If this is the case, then judges and individuals should treat losing an existing right as more important than gaining that same right. Once someone is given a right that becomes the status quo and any attempt to remove that right is treated as a loss. This bias appears in a various

areas of the law when efforts to take away rights and privileges not protected by the Constitution are declared unconstitutional. When the status quo is not having a right or privilege, the granting of the right does not rise to the level of Constitutional protection. Once the status quo has changed and the right has been granted, any attempt to remove the right has suddenly risen to the level of Constitutional protection. This is a clear example of treating the loss of right as more important than the granting of the same right.

One recent example involves the issue of gay marriage in California. In 2008, the California Supreme Court declared the state's law restricting marriage to a man and woman unconstitutional. In response, through public referendum the state's constitution was amended to include language restricting marriage to a man and a woman. While the U.S. Supreme Court avoided the main question by dismissing the case based on lack of standing to sue, the Ninth Circuit Court of Appeals explicitly stated that the loss of an already given right should be treated different than the granting of that same right. "Withdrawing from a disfavored group the right to obtain a distinction with significant societal consequences is different from declining to extend that designation in the first place, regardless of whether the right was withdrawn after a week, a year, or a decade … The equal protection clause requires the state to have a legitimate reason for withdrawing a right or benefit from one group but not others, whether or not it was required to confer that right or benefit in the first place."[1]

This differential treatment of losses and gains can also be seen in the U.S. Supreme Court decisions *Romer v Evans*[2] and *Washington v Seattle School District* #1[3] In both cases some entity attempted to provide extra protection to a specific group, and afterwards the state constitution is

[1] *Perry v Brown* No. 10-16696, p. 1616
[2] 517 U.S. 620 (1996)
[3] 458 U.S. 457 (1982)

amended through a public referendum to prevent the entity from providing the extra protection. In all three the U.S. Supreme Court said that while the entity is not required by the Constitution to provide this extra protection, the actions designed to prevent them from doing so is unconstitutional. In yet another circumstance, the loss of right is treated as more important than the granting of that same right.

In *Romer,* Colorado instituted a ban on the passage of anti-discrimination statutes that included sexual orientation as a protected group. The U.S. Supreme Court said the ban is unconstitutional even though the Constitution does not require local governments to have this type of anti-discrimination statute. The loss of the right for homosexuals not be discriminated against was treated differently than the granting of that right. The former is protected by the Constitution. The latter is not. In *Washington* a school board passed a voluntary desegregation plan and afterwards a state referendum banned this type of plan. According to the U.S. Supreme Court, in both cases the bans are unconstitutional even though universities are not required to have affirmative action programs and schools are not required to have desegregation plans.

The *Schuette* case that reached the Supreme Court this term has a similar pattern. Universities in Michigan had practiced affirmative action until the voters approved a state constitutional amendment banning the practice. The Court of Appeals for the Sixth Circuit declared that taking that previously granted right away, a right that the university was not obligated to grant, violated the equal protection clause.[4]

This pattern of treating the removal of a privilege as more important than providing the same privilege emerges in other areas of the law. In *Board of Education v Pico*[5] the Court decided that public schools cannot *remove* books from a library based on political viewpoints,

[4] *BAMN v. Schuette* 701 F.3d 466 (2012).
[5] 457 U.S. 853 (1982)

but they are free to choose which books to *add* to the library based on political viewpoints. The pattern also emerges in multiple cases where some minimal level of due process is required to remove a privilege that the entity is not required to provide. In these cases, more effort and deliberation is required when taking away privileges than when granting those privileges. *Danbridge v Williams*[6] holds that people do not have a right to receive welfare benefits, but *Goldberg v Kelly*[7] says that once those benefits are awarded a quasi-judicial administrative hearing is required to withdraw them. *Wolff v McDonald*[8] makes the same argument about good-time credits for those in prison. Prisons are not required to award these credits, but once given, they cannot be taken away without a minimal level of due process.

All of these cases implicitly acknowledge a fundamental truth of human psychology that losing something already acquired has more psychological impact than gaining the same thing. The justification in these previous cases always used some form of legal reasoning, but in all of them the influence of a cognitive bias is evident. However, in at least one case a judge explicitly cites human psychology as a justification for treating losses as more important than gains. The 10th Circuit Court of Appeals in *O' Centro Espirita Beneficente Uniao Do Vegetal v Ashcroft* held that any preliminary injunction changing the status quo deserved a heightened form of scrutiny. Michael McConnell in his concurrence justified this in the following way:

> "Disrupting the status quo may provide a benefit to one party, but only by depriving the other party of some right he previously enjoyed. Although the harm and the benefit may be of equivalent magnitude on paper, in reality, deprivation of a thing already possessed is felt more acutely than lack of a benefit only hoped for."[9]

[6] 397 U.S. 471 (1970)
[7] 397 U.S. 254 (1970)
[8] 418 U.S. 539 (1974)
[9] 389 F.3d 973 at 1015-1016

Across all these different cases we have cited, judges consistently treat losses as more important than gains and evaluate situations based on the status quo. One reason could be that like Judge McConnell they realize that the individuals affected will feel a greater psychological impact from the loss than from the gain, and write their opinions based on this. However, this does not seem to be what is occurring because most judges do not cite psychological and behavioral economics research as McConnell does. Instead, they base their decisions for treating a loss differently from a gain in legal reasoning. Thus, it seems that this cognitive bias's subconscious effect on judges very human brains leaves an imprint upon the law. Just as ideology affects the decision-making of judges without being explicitly referenced in legal decisions (Segal and Spaeth 2002), the biases identified by behavioral economics can also emerge without judges' awareness or acknowledgment.

Judges and Motivated Reasoning

In this study, we concentrate on one type of bias: whether when making decisions on the exclusionary rule, judges are influenced by their knowledge of the seriousness of the crime that the defendant has allegedly committed. The law says that judges must disregard this information, but research suggests that even if judges want to disregard their knowledge and appropriately apply 4th Amendment jurisprudence, the biases of human reasoning may not allow them to do so. Motivated reasoning studies shows that people have a tendency to come to conclusions that reinforce their prior preferences (Lodge and Taber 2013). Kunda (1990) proposed that human reasoning is guided by accuracy goals but also by directional goals or goals that motivate someone to come to a specific conclusion. Importantly, people do not do this intentionally but instead construct arguments that support the decision they wanted to come to in the first place. As Kunda (1990, p. 482) explained it

> "People do not seem to be at liberty to conclude whatever they want to conclude merely because they want to. Rather I propose that people attempt to be rational and to construct a justification of their desired conclusion that would persuade a dispassionate observer. They draw the desired conclusion only if they can muster up the evidence necessary to support it."

When judges are making decisions on whether to exclude or admit evidence, they know a large amount of information about the individual, and according to the motivated reasoning literature, even if judges want to ignore this information it will almost assuredly cause them to form a directional goal to not release a person known to have committed a serious crime. This directional goal formed by this knowledge can subconsciously guide judges to make arguments leading them to admit evidence they might exclude from cases with less serious crimes. The judge will construct a full legal argument justifying this decision, but this legal argument was constructed though motivated reasoning and guided by directional goals.

Sood (2012) ran an experiment showing that ordinary citizens do let this directional goal affect their reasoning and are more likely to admit evidence for serious crimes than for less serious crimes.[10] Her study also suggests a route through which motivated reasoning can leak into the decision making of judges, while still appearing to be completely based on the law. Her subjects were presented with a situation in which the police searched someone's car without a search warrant and found illegal drugs. The subjects were informed of the exclusionary rule and told that the search was clearly illegal. They were also informed of the inevitable-discovery exception for the exclusionary rule, and were offered a potential but tenuous route through which the police may have inevitably discovered the evidence. If motivated reasoning is the explanation for why judges admit evidence that objectively should be excluded, the influence of motivated

[10] Sood garnered her subjects via Mechanical Turk.

reasoning will be seen at the boundaries. Judges must be able to create, perhaps subconsciously, an argument to justify admitting the evidence. Exceptions like the inevitable discovery rule offer this route. In cases with serious crimes subconscious directional goals may cause judges to search harder for arguments supporting an inevitable-discovery finding. For less serious crimes, these directional goals are much weaker and thus the search for arguments supporting an inevitable-discovery finding will garner much less effort. Across two different studies Sood (2012) shows these directional goals influence the decision-making of ordinary individuals. When the criminal is presented as heroin dealer who sells to high-school students the subjects were much more likely to apply the inevitable-discovery exception and admit the evidence than when the criminal is presented as a marijuana dealer who sells to terminally ill cancer patients. Using mediation analysis, she shows that reason for this difference is that people perceive the crime involving heroin as more serious and more deserving of punishment. Also, she shows that people are not aware that the seriousness of the crime affects their decision to apply the inevitable discovery rule. Instead, people in the heroin condition were much more likely to create arguments justifying why the police would inevitably discover the evidence.

Braman (2009) applies motivated reasoning to a different type of legal reasoning and similarly concludes that it can affect decisions in legal cases, but only on the boundaries. If the facts of a case clearly support one side or the other, a person will decide accordingly, but if the case provides some support for both sides, motivated reasoning influences judgments. For example, she showed that a person's decision concerning standing to sue over a dispute involving abortion was affected by their abortion attitude, but only when the guiding precedent was ambiguous. Braman's studies offer at least one advantage to Sood's in that she shows these motivated reasoning processes also occur with law school students who have had at least some

legal training. Just like Sood's sample, the law school students were not aware that their abortion attitudes affected their judgments and were also able to construct plausible legal reasoning justifying their decisions. Law school students of course have much less legal training and experience than judges, but results from Wistrich et al. (2005) suggests that judges succumb to these same motivated reasoning processes in many instances. Across multiple studies and issues areas, their results show that judges in hypothetical cases are unable to disregard inadmissible information. This information, which is not supposed to have any effect on their decisions, leaks into their decision-making process without their awareness.

Like all other humans, judges appear to be susceptible to motivated reasoning processes and other biases predicted by behavioral economics. Sood (2012) provides evidence for a bias that, if found in judicial decision-making in actual cases, would have vast and important implications for the protection of civil liberties and the rights of the criminally accused in America. According to existing Supreme Court doctrine, the impartial application of the exclusionary rule is essential to upholding fourth-amendment protections. The Supreme Court has made many exceptions to the exclusionary rule, and if it desired could make an exception for especially egregious crimes. Indeed some legal scholars (Kaplan 1974; Bellin 2011; Dripps 2001) have argued in favor of this. If Sood's findings are applicable to judges when making decision on real cases, this exception would already be evident in the law, but it would be created not through legal reasoning but through the subconscious and uncontrollable biases of the human mind.

Observational Evidence: The Exclusionary Rule

Legal scholars have previously noted that the exclusionary rule creates an incentive for judges to admit challenged evidence in serious cases. In many cases, these scholars were arguing

that courts should take the seriousness of a crime into account when making exclusionary rule decisions, and make explicit rules to avoid excluding evidence in serious cases whenever possible. However, as Kaplan (1974) states "one can, of course, argue against such as rule as unnecessary since the courts are following it anyway, albeit covertly" (p. 1046). Kaplan is not alone in his assertions that judges avoid excluding evidence in serious cases. Amar (1994) states that "judges do not like excluding bloody knives, so they distort doctrine, claiming the Fourth Amendment was not really violated" (p.799). Dripps (2001) claims that the exclusionary rule has a "serious psychological problem. Judges are reluctant to free obviously guilty criminals. Trial judges, therefore, tilt fact-finding against exclusion, while appellate judges give constitutional rights crabbed and grudging interpretations" (p.2). These scholars suggest as we do that judges are less likely to exclude evidence in serious cases, but they do not offer any rigorous empirical data to support their assertions. We provide that data to confirm what it appears many legal scholars already believe. We also differ from these legal scholars in the mechanism through which this happens. These legal scholars suggest that judges intentionally treat serious and minor cases differently. We propose that this is not required because the same result can occur through subconscious biases.

At least one existing empirical study provides some evidence that suggests judges are affected by the seriousness of the crime. Nardulli (1983) attempted to determine the societal cost of the exclusionary rule by seeing how often motions to exclude evidence were granted and whether that led to the alleged criminal being released. As part of that examination, he gathered data on 7767 state trial court cases and broke down by the type of crime the percentage of motions to dismiss granted. The lowest percentage was in the offenses against person category, which is perceived as the most serious type of crime (Stylianou 2003). Additionally he notes that

none of the motions to dismiss were granted in the most serious cases like murder, rape or armed robbery. Nardulli also finds that the defendant's criminal record affects whether judges grant a motion to dismiss. For first time offenders, 22.7 percent of the motions are granted while it is only 9.2 percent for defendants with serious criminal records. While the author does not conduct any statistical tests and does not control for other factors like search intrusiveness that could cause a difference between the categories, the study provides suggestive evidence in favor of our theory.

Methodology

In this section, we describe our methodology for testing whether the egregiousness of a crime affects the likelihood of judges admitting challenged evidence. To accomplish this we must devise a method for ranking the egregiousness of various crimes. Additionally, we must control for the intrusiveness of the search because a long line of studies shows this strongly influences search and seizure decisions (Segal 1984, 1985, 1986; Songer, Davis, and Haire 1994; Van Winkle 1997). In our model, we also include a measure of judicial ideology to control for that potential influence. Once all these measures are included, we can increase the confidence with which we can conclude that any effect of crime egregiousness results from a judge of similar ideology treating two searches of similar intrusiveness differently because the crime involved in one was more egregious than the crime involved in another.

Search Intrusiveness

We measure the intrusiveness of the search from Segal's (1984) fact pattern analysis of Supreme Court search and seizure decisions from 1962-1981. Segal's specification examined factors such as where the search took place (house, person, business, car, or place over which the accused did not have a property interest, such as the home of a third party), and the extent of the

search (dichotomizing a full search as opposed to a *Terry*-style limited intrusion)[11] against the prior justification for the search (a valid warrant and probable cause) and a series of Court-identified exceptions (e.g., searches incident to lawful arrests, as well as border, plain view, and consent searches). The model predicted the Supreme Court's search and seizure decisions very well and has been successfully replicated with minor variations across time and space.

For example, Segal (1985) examined more nuanced approaches to how the Supreme Court's search and seizure decisions changed over time, exploring whether the Supreme Court generally became more conservative over time (changes in the constant), or alternatively, whether it changed its weighting of certain variables (changes in the slopes), finding that the changing constant, as in the 1984 article, offered the best fit. Segal (1986) switched the dependent variable to the decisions of the individual justices to uphold the searches in questions, finding that the original model works well with the individual justices.

Since then, Segal and Spaeth have twice expanded the model to include subsequent Terms of the Court, obtaining similar results through the 1989 term (Segal and Spaeth 1993) as well as through the 1998 Term (Segal and Spaeth 2002), finding that the basic model held through a 75% increase in cases (123→219). Other works applying the basic model to the Supreme Court include Hagle (1991), as well as Kritzer and Richards (2005).

A variety of different scholars have successfully applied Segal's model to decisions of judges on the U.S. Courts of Appeals, including Songer, Davis, and Haire (1994) (1981-1990) and Van Winkle (1997). Songer, Segal, and Cameron (1994) tied Court of Appeals responsiveness to changing Supreme Court preferences through the search and seizure model. Finally, Cameron, Segal and Songer (2000) use the summary search intrusiveness score from the

[11] *Terry v. Ohio*, 392 U.S. 1 (1968).

model to examine strategic auditing by the Supreme Court of Court of Appeals search and seizure decisions, noting that the conservative Burger Court would deny petitions for writs of certiorari to conservative lower courts that made conservative decisions regardless of the intrusiveness of the search, but would frequently grant such petitions when the lower court made liberal decisions, unless the lower court was very conservative and the search appeared to be highly intrusive.

In sum, we have many reasons to be confident that we can measure the intrusiveness of searches using Segal's fact-pattern analysis: it has stood the test of time on the Supreme Court, it has stood the test of space (Supreme Court and Court of Appeals), as well as the test of purpose (decision making, certiorari, and lower court responsiveness). The measure we use in this paper is taken directly from Cameron et al. (2000):

> "Using the case facts, we constructed the measure of the publically observable intrusiveness of the search in the following way. Segal (1984) estimates the likelihood the Supreme Court will uphold a search, based on the fact pattern in cases and a proxy for the ideology of the Court. In particular, Segal estimates weight on each variable using a logit regression. Since the Court's decision to uphold or strike down search-and-seizure cases depends partly on the intrusiveness involved, the logit weights on case facts provide a convenient way to measure intrusiveness."

The search intrusiveness variable is calculated using the following formula:

$$\begin{aligned} Search\ Intrusiveness \\ &= -3.256 * Incident - 1.049 * Afterlaw + .06 * Unlawful - 1.928 \\ &* Warrant + 3.25 * Home + 2.054 * Person + 2.733 * Business + 2.243 \\ &* Car - 1.411 * Extent \end{aligned}$$

Ideology

Our measure of ideology is constructed in a similar manner to the search intrusiveness measure and comes from Songer, Segal and Cameron (1994). They used five characteristics of judges such as the political party of the appointing President and whether they were a prosecutor to predict their voting behavior.[12] The regression weights are used to create a measure of ideology for each individual judge. In our models, following Songer et al., we use the ideology of the opinion-writer.

Crime Egregiousness

The literature on the perceived egregiousness of crimes has reached broad agreement on two issues that allow us to reliably categorize some crimes as more egregious than others. First, people exhibit relative if not absolute consensus on which crimes are perceived as the most egregious (Robinson and Kurzban 2007). Relative consensus means that the rank-ordering of crime egregiousness is similar for everyone – i.e. murder is more serious than theft. Absolute consensus requires that everyone rank every crime as equally serious – i.e. all people rank murder as a 95 out of 100 on an egregiousness scale and theft as a 59 out of 100 on the same scale. In a review article on crime seriousness research Stylianou (2003) called relative consensus "one of the most persistent findings" (p. 43). Second, studies consistently show that people rank crimes against people as more serious than crimes against property. The same review article says this "conclusion has been confirmed by virtually all studies and acknowledged by all summaries of findings of seriousness perceptions research" (p. 42). Perhaps, the most comprehensive analysis of crime serious perceptions comes from the National

[12] As we note below, we intend to replace this measure with the more widely used Giles, Hettinger and Peppers (2001) score.

Survey of Crime Perceptions – a 60,000 person survey that asked people to rate the seriousness of a large variety of crimes (Wolfgang et al. 1985). The goal of the survey was to create a formula that could be used to rate the seriousness of a crime based on identifiable case facts. Rape and murder were the most serious crimes at 778 and 565 respectively with property crimes like theft of $10 rated at 38.[13] The results also show that robbery was rated as more serious than a non-confrontational theft. Compared to a 38 for the theft of $10, a robbery involving a weapon was rated as a 160. Other scholars have used slightly different categories but in all of them crimes against person are always rated as more serious than crimes against property. Rossi, Waite, Bose and Berk (1974) found that crimes against person – those involving actual and threatened injury – were more serious than property crimes which were in turn more serious than white-collar and victimless crimes.

Because the existing literature has reached agreement on these two issues, we can place our sample of cases into different categories and be confident that the crimes in one category will be perceived as more serious than the others across different individuals and groups. The most serious category will include all crimes against a person that involve actual or threatened injury. This category includes murder and rape cases, but also robberies because they involve the threat of injury to a person. Because the sample includes only federal cases, this category includes many bank robberies. The crime against property category includes any crime in which someone took or destroyed the property of someone else without injuring or threatening a person. This involves a wide variety of crimes like burglary and writing bad checks. Because the cases come from federal court, the most represented crimes in the sample involve selling drugs or unlawful

[13] The survey asked people to compare each crime to a person stealing a bicycle parked on the street. This crime was given a score of 10 and if people thought a crime was twice as serious they should rate it as a 20. Thus, a rating of 38 means that theft of $10 is rated as approximately 4 times more serious than theft of a bicycle.

possession of guns. Each of these crimes is given its own category. Virtually all of the drug cases involve more than simple possession and most of them involve the transportation or sale of large quantities of illegal drugs. The final category involves crimes that do not fit neatly into the property or person category. The most prevalent crimes in this category are counterfeiting currency, running an illegal gambling operation, immigration violations and not paying income taxes. Many of these crimes could be called victimless crimes in the sense that no individual or property owned by an individual is harmed in these crimes. The only damage is to society as a whole. Generally, such crimes are perceived as less serious than property crimes (Warr 1989; Stylianou 2003).

Using this coding scheme, 12.6 percent of our sample of cases is included in the crimes against person category, 13.8 percent in crimes against property, 46.5 percent in drug crimes, 10.9 percent in gun crimes and 16.3 percent in other. With these categories, crimes against person is the category with the most serious crimes. The three categories of crimes against property, drug crimes and gun crimes fall somewhere below crimes against person in seriousness but the existing research on seriousness does not allow us to determine which type of these three crimes is more serious than the others. The other category contains crimes that are generally perceived as the least serious, but because it includes a large variety of crimes not all of which would be considered victimless crimes we cannot guarantee this category of crimes will be perceived as less serious than drug, gun and property crimes.

Hypothesis

Using this scheme to categorize the crimes, our main hypothesis is: Controlling for the intrusiveness of a search and the judge's ideology, judges will be more likely to admit challenged evidence in the crimes against person category than in the other less serious categories of crime.

Data

Our data were initially gathered for use in Cameron et al. (2000). They collected the universe of search and seizure cases from the Federal Court of Appeals for the years 1961 to 1990. From this a random sample of 40 cases stratified by year was selected. The sample was then constricted to the last three natural courts of the Burger Court to control for the doctrinal preferences of the Supreme Court. Following this process, the sample includes 626 search and seizure decisions. We used this existing data set and coded each of the cases into one of the five crime categories: crimes against person, crimes against property, drug crimes, gun possession crimes and other. We must exclude 30 of the cases either because the court decision did not include a clear description of the crime or because they were *Bivens* cases where someone filed a lawsuit to recover damages because of an unlawful search.[14] The same directional goals should not apply to these latter cases because it does not involve any threat of releasing a criminal. Other observations are also dropped because we have missing data on either the search intrusiveness or ideology variables. For models that include search intrusiveness, the effective sample is 586. For models that include both search intrusiveness and ideology, the effective sample is 558.

Results

We begin the analysis by replicating the findings from Segal (1984, 1986) showing that the intrusiveness of the search as measured by his fact-pattern analysis affects the probability that a Court of Appeals panel will exclude or admit the evidence. Column 1 of Table 1 includes a model with the intrusiveness of the search as the only independent variable. The dependent

[14] The U.S. Supreme Court ruled that these types of cases could be filed against federal agents in *Bivens v Six Unknown Named Agents*, 403 U.S. 388 (1971)

variable is the panel's decision to either exclude the evidence (coded as 0) or admit the evidence (coded as 1). Since the dependent variable is dichotomous a logit model is used. The coefficient on the intrusiveness of the search is negative and highly significant, indicating that as the search becomes more intrusive the predicated probability of the evidence being admitted decreases. Calculating the predicted probability at high and low levels of intrusiveness illustrates its large effect. At the 5th percentile of search intrusiveness (-1.49), the predicted probability of the evidence being admitted is .97. At the 95th percentile of search intrusiveness (4.5), the predicted probability decreases to .58.

Crime Egregiousness

We now add crime egregiousness to the model to gauge its effect on judicial decision-making. We include indicator variables for each type of crime category: crimes against person, crimes against property, drug crimes and gun crimes with the excluded category being other crimes. We also include the ideology measure as an additional control. Column 2 of Table 1 contains this model. We first note that search intrusiveness is still significant and negative, and the size of the effect barely changed. Also, the coefficient on ideology is insignificant and has a negligible effect, consistent with the lesser effect of ideology on the decisions of Court of Appeals judges as compared to Supreme Court justices (Segal 2008). The best way to examine the effect of the different crime categories is to compare the predicted probability of a judge admitting the evidence within each the category. The predicted probabilities are calculated holding search intrusiveness and ideology at their means (1.574, .200 respectively).[15] The crimes against person category has the highest predicted probability at .90. The crimes against property,

[15] Any predicted probabilities, confidence intervals around the predicted probabilities or statistical inferences based on predicted probabilities were calculated using the CLARIFY program (King, Tomz and Wittenberg 2000).

drug crimes and gun crimes categories all have a predicated probability of .87. The other category is the lowest at .84. While the pattern meets expectation with the crimes against person - the category with the most egregious crimes - higher than all the others none of the differences between the categories reach statistical significance.

The lack of an average effect of crime category on search and seizure decisions is not surprising because as the analysis above revealed that for low intrusive searches the admission of the evidence is already virtually guaranteed. The probability in an egregious crime cannot be higher than in a minor crime for these types of searches because the probability for a minor crime is already almost at 1. To test whether the effect of crime category varies by search intrusiveness we interact each of the crime category indicators with search intrusiveness. Column 3 of Table 1 contains the results, and Figure 1 plots the predicted probability of the evidence being admitted for each of the categories from the 5^{th} to 95^{th} percentile of search intrusiveness. The differences between the categories are never significant across the range of crime intrusiveness, but the figure reveals that the crimes against person category is an outlier. For all the other crimes, the probability of the evidence being admitted is high for low intrusive searches, and the probability greatly decreases as the intrusiveness of the search increases. This does not occur for crimes against person. The probability of the evidence being admitted is high for both low and high intrusive searches.

Since every crime category besides crimes against person are treated in the same manner we run another model in which we combine all of these categories into one. This improves the statistical power of the test because rather than comparing the crimes against person category to four small groups individually we are comparing it to one larger group. The model in column 4 includes only the crimes against person indicator and interacts it with search intrusiveness. The

interaction is significant at p<.05 and negative, indicating that search intrusiveness has less of an effect in the crimes against person category than in all the other crimes. Figure 2 displays the predicted probability of the evidence being admitted across search intrusiveness for both categories of crime, along with 95 percent confidence intervals around the crimes against person category. As can be seen, at low levels of search intrusiveness the probability of the evidence being admitted is slightly lower in the crimes against person category when compared to all other crimes, but the difference never reaches statistical significance. The probability in the crimes against person category only becomes higher than all the other crimes once the searches become highly intrusive. Above 3.65 on the search intrusiveness scale, the predicted probability is significantly higher in the crimes against person category than in the all other crimes category. This includes 12 percent of the sample.

Another way of examining these results is by comparing the effect of intrusiveness within each category. In the all-other-crimes category the search intrusiveness scale has a highly significant (p<.0001) and negative effect. At the 5th percentile of crime intrusiveness the predicted probability of the evidence being admitted is .98. At the 95th percentile, this decreases to .54. In the crimes against person category, crime intrusiveness has no detectable effect (p>.4). At the 5th percentile of crimes intrusiveness, the predicted probability is .91 and this only decreases to .82 at the 95th percentile.

These results reveal that judges take into account the egregiousness of an alleged crime when making search and seizure exclusionary rule decisions, but only for the most intrusive searches. For these intrusive searches, judges are much more likely to admit the evidence for crimes against a person than for other less egregious categories of crimes. For less intrusive

searches, judges have a high probability of admitting the evidence regardless of the type of crime.

Discussion of Next Steps

These results support our hypothesis that the seriousness of a crime involved in a search and seizure case affects how judges make decisions. In future work, we will improve upon this promising initial step in multiple ways. First, we will use a different and possibly better measure of ideology that was developed by Giles, Hettinger and Peppers (2001). Our current measure of ideology had no detectable effect, but this could be a result of the measure of ideology rather than ideology itself having no effect.

Second, we will use a more fine-grained and direct method to measure crime seriousness. Rather than placing the crimes into five broad categories, we will directly measure the perceived seriousness of the crime in each case. We have written short descriptions of the crime in each case and will ask a sample drawn from Mechanical Turk to rate the seriousness of the crime.[16] This will allow us to take into account more of the variation in crime seriousness than we do now. Each category contains large variance in crime seriousness. For example, the property crime category includes using a bomb to destroy part of a building and stealing a checkbook. The other category includes counterfeiting currency and unlawfully manufacturing liquor. In both examples, the former is almost assuredly perceived as more serious than the latter, but using our current method we must ignore this variation. Another advantage of directly measuring crime

[16] Since crime seriousness perceptions exhibit relative consensus, a representative sample is not required to rank the crimes by seriousness. Any sample of an adequate size will give the same rankings because everyone agrees that murder is more serious than robbery which is more serious than theft which is more serious than possession of obscene material.

seriousness is that we can confirm that crime seriousness is driving our results and not some other difference between the crime categories.

Third, we would like to test our hypothesis on decisions in other types of courts besides the Federal Court of Appeals. Using a sample of state court cases would provide multiple advantages. First, it would include many more types of crime than in the federal courts. Our sample includes an abundance of bank robberies and possession of a firearm charges but no extremely common crimes such as shoplifting because shoplifting is not prosecuted at the federal level. It also includes a large number of drug crimes just as at the state level, but these drug crimes are different than what would be encountered in state courts. They are virtually all people selling or transporting large quantities of illegal drugs. None of the drug crimes are simple possession charges and only a few seem to be prosecutions of low-level street dealers. The second advantage of using state courts is we could determine whether the effect of crime seriousness changes based upon judicial selection method. Elected judges would have a much greater incentive than appointed judges to take into account the public's reaction when deciding whether to exclude evidence in serious crimes.

Another possibility is the U.S. Supreme Court, but using the Court's decision on the merits of a case presents a few problems. We expect that the effect of crime seriousness decreases the higher up one is in the judicial hierarchy. This is not because the justices on the U.S. Supreme Court are better judges than court of appeals judges, but because they are creating precedent that binds all lower court judges. Once a case gets to the merits stage, it behooves the justices not to let the facts of an individual case influence what will become binding precedent. If the police misbehave in an egregious case it makes more sense for the justices to vote to deny cert. It should result because the justices on the U.S. Supreme Court are more separated from

the facts of a case than a trial judge. Trial judges hear all the testimony, examine all the evidence in cases and see both the victim and the alleged criminal sitting in the courtroom. The direct consequences of excluding evidence are extremely salient to trial judges. A judge on the U.S. Supreme Court will only know the most basic facts of a case and probably not even see a picture of either party. Another important difference between the two is that trial judges know any decision only affects that case and do not have to worry about setting precedent. For the U.S. Supreme Court, their decisions create national precedent, and because of that their approach to cases will be much different. Cases are really just vehicles for the creation of precedent, and thus, Supreme Court justices are much better situated to concentrate solely on the legal factors in a case and ignore the emotional factors like the seriousness of the crime.

One area where crime seriousness may affect the U.S. Supreme Court is when voting to grant cert. Justices might vote to deny cert on a particularly egregious crime that involves challenged evidence because that action does not set precedent and also does not free an alleged criminal. As Justice Thurgood Marshall told Life magazine in 1987, "If it's a dope case, I won't even read the petition. I ain't giving no break to no dope dealer."[17] Another possible strategy may be to grant cert on particularly egregious crimes when justices want to put limits on the exclusionary rule or grant cert on very minor crimes when justices want to expand the exclusionary rule. The egregious crime would provide an illustration of the benefits of limiting the exclusionary rule while the minor crime would put the focus on the illegal search. Some suggestion of this strategy can be seen in the Courts exclusionary rule decisions. The case that applied the exclusionary rule to the states involved possession of obscene material, among the least serious crimes possible,[18] and the case the created the "fruit of the poisonous tree" rule

[17] Cited in http://prospect.org/article/thurgood-marshalls-biggest-mistake, visited March 17, 2014.
[18] *Mapp v Ohio*, 367 US 643

involved not paying taxes.[19] The decision that created the inevitable-discovery exception involved the murder of a child [20] and the case that created the good-faith exception[21] involved a drug dealer. The court probably had a large number of cases it could have used to incorporate the exclusionary rule. It chose to do so in a case where the police barged into someone's house without a warrant, and the person was charged with an extremely minor crime.

Conclusion

To our knowledge, this is the first large-N study to examine judicial behavior in actual cases from a behavioral economics perspective, and it provides the strongest observational evidence to date that a clearly demonstrated cognitive bias from the experimental world applies to the real world of judicial behavior. Previous studies have shown that judges are susceptible to the biases of behavioral economics in hypothetical cases, but this type of study cannot provide direct evidence that the biases also appear in real-world cases. In other words, these experimental studies have high internal validity but lack the external validity necessary to make firm conclusions about their real-world effect. This study provides that external validity

As our evidence is based on observational data it lacks the internal validity of the experimental studies. Because of this we cannot be certain of the mechanism that leads judges on the Courts of Appeals to restrict the exclusionary rule for egregious crimes with intrusive searches. While our data cannot prove the causal mechanism, the experimental evidence in hypothetical cases (Sood 2012) supports our causal mechanism that crime seriousness is a subconscious influence on judges' information processing that motivates them to reach a certain conclusion. This pairing of studies – our own and Sood (2012) – complement each other and

[19] *Silverthorne Lumber Co. v United States,* 251 US 385
[20] *Nix v Williams,* 467 US 431
[21] *United States v Leon,* 468 US 897 (1984)

provides a model for future research into law and behavioral economics. Experimental studies using hypothetical cases identify those areas where cognitive biases may affect legal reasoning and solidify the causal mechanism. Observational studies use the experimental studies to predict distortions in the law and determine whether they exist in actual cases. This is similar to the method used by rational choice theorists in their work. They use a mathematical model to make predictions about how judges should behave and then examine actual cases to see if that is how judges behave. In behavioral economics, experimental studies are substituted for mathematical models. In both instances, the observational data can never firmly prove a causal mechanism. For that, we must rely upon other evidence, and in this instance, the other evidence supporting a behavioral economics explanation is strong.

This study highlights at least one benefit of using a behavioral economics approach to study judicial behavior. Sometimes legal doctrine emerges from processes of legal reasoning and interpreting the law. Other times, as in this instance, legal doctrine emerges from the cognitive biases of human psychology. When judges treat serious crimes differently than minor ones because of motivated reasoning, this effectively creates legal doctrine in the same way as if the U.S. Supreme Court issued a decision limiting the application of the exclusionary rule in serious crimes. A limitation to the exclusionary rule created through an explicit decision is observationally equivalent to one created through sub-conscious biases. Under both, evidence that was illegally gathered is used against someone in a court of the law because they committed a serious rather than a minor crime. The difference is that when it is created through subconscious biases it is an unacknowledged legal doctrine that emerges from a hidden process and is never openly debated. In a democracy, all questions – even the meaning of the Constitution - are supposed to be discussed and openly debated. When cognitive biases create

unacknowledged legal doctrine this debate is bypassed, and a doctrine that has been explicitly rejected nonetheless becomes - in effect - the law of the land. Some scholars have debated the question of whether the exclusionary rule should be limited in serious crimes (Kaplan 1974; Bellin 2011; Dripps 2001), but most of the papers miss the proper debate. The important question is not whether the judiciary should create this limitation, but whether they should acknowledge and formalize the already existing one created through the biases of human psychology.

Future research should examine other instances where legal doctrine emerges not from legal reasoning but from subconscious biases. Since these subconscious biases create unacknowledged legal doctrines, the only way to fully describe the law-in-practice is to identify other unacknowledged doctrines. The existence of unacknowledged legal doctrines is worrisome because of democratic concerns, but it is perhaps even more worrisome because their existence means that people are being ruled by a law that virtually everyone including judges does not even knows exists.

Applying behavioral economics to judicial behavior provides a more realistic depiction of what influences judges' decision making, and by doing this allows scholars to better understand why certain explicit legal doctrines are created. Perhaps more importantly behavioral economics also help to provide a more realistic and true description of the law itself. A description of the law that incorporates behavioral economics includes not only explicit legal doctrines like the undue burden test but also those that are unacknowledged like limiting the application of the exclusionary rule in serious crimes.

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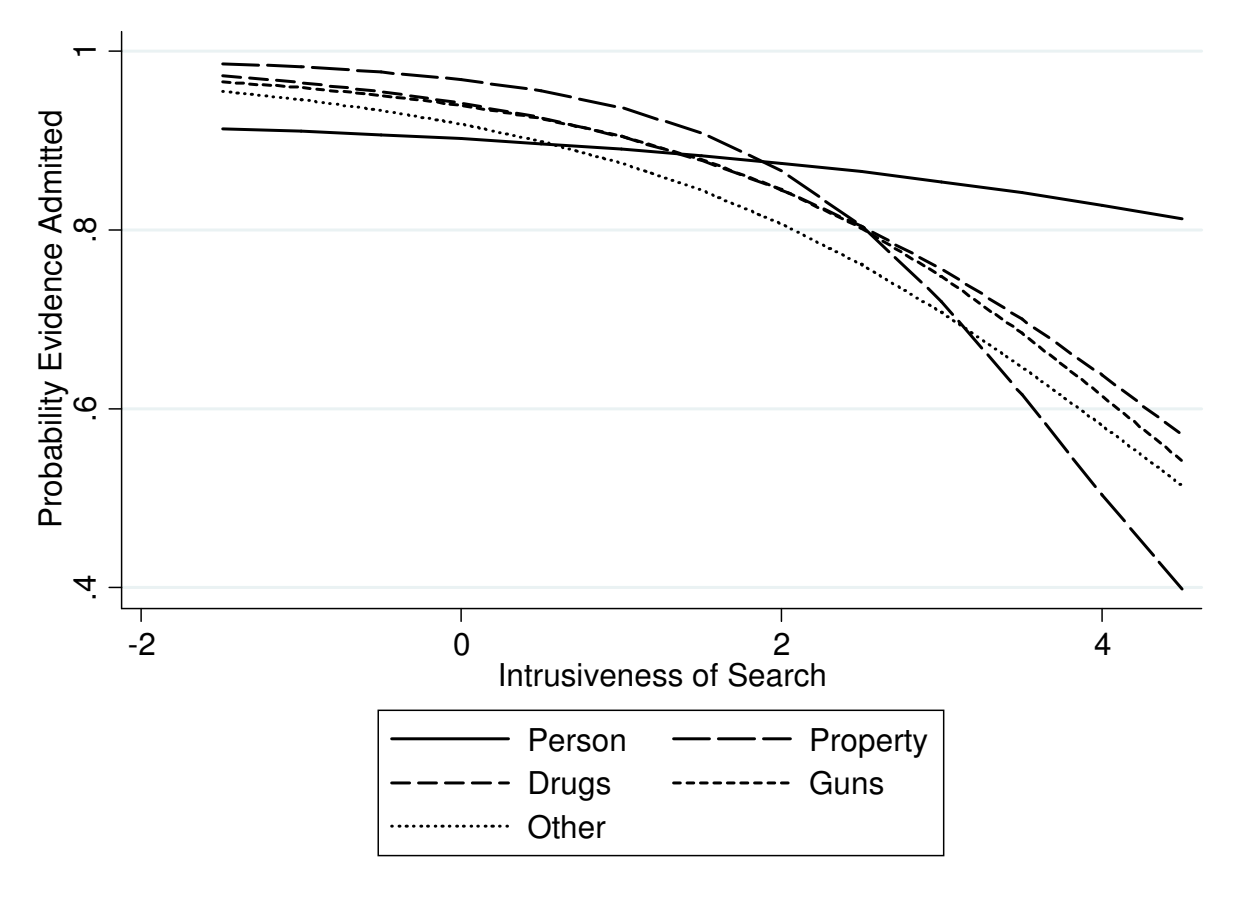
Table 1 – Search and Seizure Decisions and the Egregiousness of Crimes

VARIABLES	(1) Evidence Admitted	(2) Evidence Admitted	(3) Evidence Admitted	(4) Evidence Admitted
Search Intrusiveness	-.57*	-.55*	-.56*	-.62*
	(.08)	(.08)	(.20)	(.09)
Crime Against Person		.61	-.30	-.64
		(.45)	(.80)	(.57)
Person X Intrusiveness			.41	.47*
			(.28)	(.22)
Crime Against Property		.27	1.25	
		(.43)	(1.14)	
Property X Intrusiveness			-.39	
			(.39)	
Drug Crimes		.25	.26	
		(.32)	(.72)	
Drug X Intrusiveness			.00	
			(.23)	
Gun Crimes		.27	.43	
		(.46)	(1.00)	
Gun X Intrusiveness			-.07	
			(.34)	
Opinion Writer Ideology		.20	.20	.18
		(.37)	(.38)	(.37)
Constant	2.86*	2.51*	2.55*	2.89*
	(.24)	(.36)	(.63)	(.27)
Observations	586	558	558	558

Standard errors in parentheses
* $p<0.05$

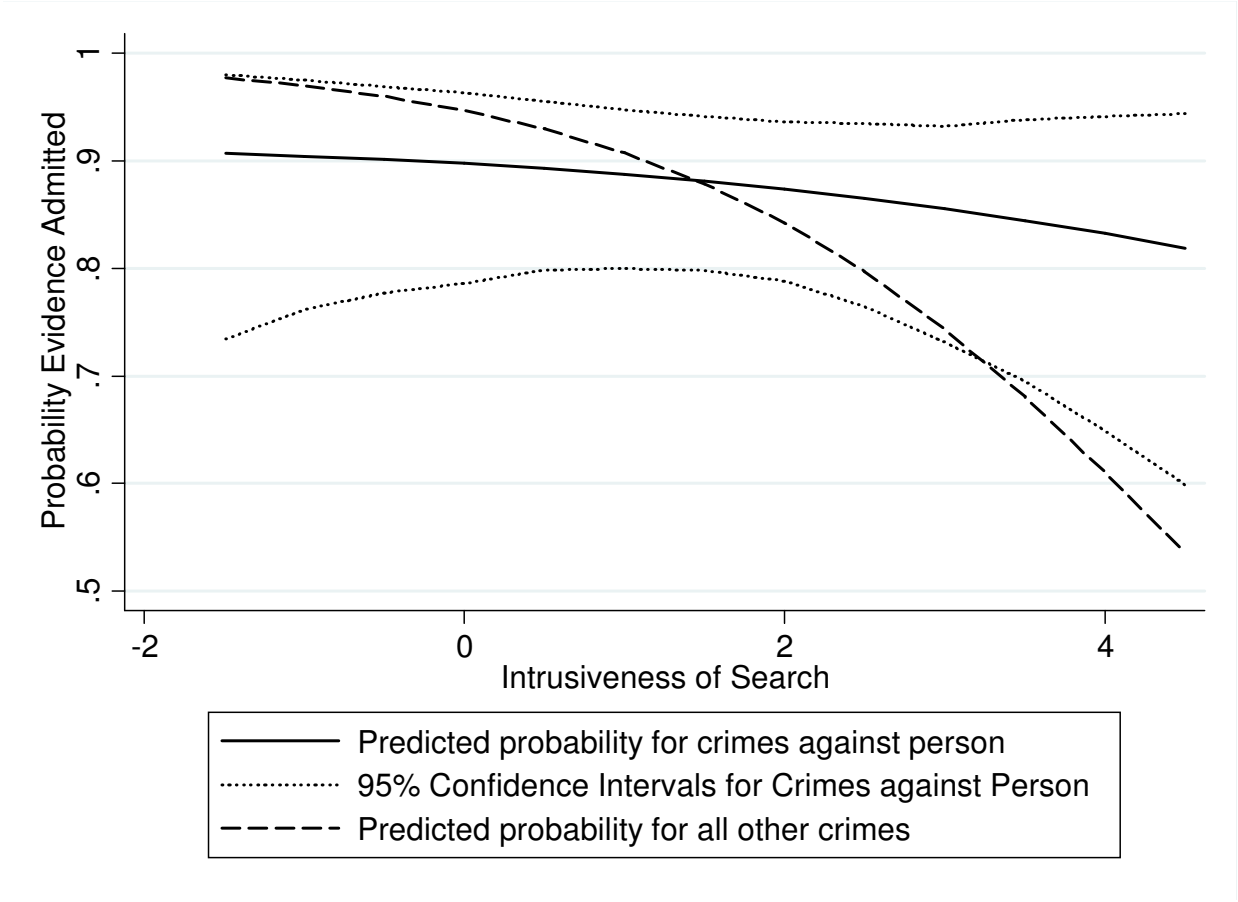
The dependent variable is coded 1 if the evidence is admitted and 0 if the evidence is excluded. All models use a logit link function.

Figure 1 – Search and Seizure Decisions and the Five Categories of Crime



The predicted probability of the evidence being admitted is displayed from the 5th to the 95th percentile of search intrusiveness for each category of crime.

Figure 2 – Search and Seizure Decisions and the Crimes Against Person Category



The predicted probability of the evidence being admitted is displayed from the 5th to the 95th percentile of search intrusiveness for each category of crime. The predicted probabilities and confidence intervals were calculated using CLARIFY (King, Tomz and Wittenberg 2000). Above 3.65 on the search intrusiveness scale, the difference between the predicted probability in the crimes against person category and the all other crimes category is significantly different from 0 at $p<.05$.