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The Application Of Federal And Texas State Sentence Ranges In A

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THE APPLICATION OF FEDERAL AND TEXAS STATE SENTENCE RANGES IN A CONSIDER-THE-OPPOSITE PARADIGM: CAN THE MAGNITUDE OF BIAS IN SENTENCING DECISIONS BE REDUCED?

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ABSTRACT

Sentencing decisions are usually made in situations of judgmental uncertainty because they are typically complex and make use of inherently ambiguous information (Saks & Kidd, 1980). Research on underlying judgment processes has demonstrated that anchors provide a basis for simplifying judgments that involve uncertainty (Higgins, 1996; Tversky & Kahneman, 1974). To investigate sentencing disparities that occur for identical crimes, it is also essential to understand the psychological mechanisms that underlie decision making. The Selective Accessibility Model (Tversky & Kahneman, 1974) states that, "people construct a mental mode that selectively increases the accessibility of anchor-consistent information" (p.1125). In turn, because this information is now more accessible, it is used when making a subsequent judgment such as a sentencing decision for an offender. It has also been demonstrated that "considering the opposite" (Lord, Lepper, & Preston, 1984), that is, taking into account evidence that is inconsistent with one's initial beliefs, is an effective strategy to improve human judgment by reducing overconfidence in the correctness of a chosen answer. The proposed research tested the Selective Accessibility Model and extended it by exploring sentencing decisions made when defendants are convicted of the same crime, while varying the extremity of the anchor and the ability to generate anchor consistent or inconsistent knowledge. Because of the greater variability in the Texas sentence range, it was hypothesized that individuals asked to sentence within this range would give more punitive sentences than participants asked to sentence within a Federal range. It was also hypothesized that anchoring effects would be reduced or eliminated by having participants generate information that argued against the recommended sentence. As predicted, participants who sentenced within the Texas State range gave more punitive sentences than

participants who sentenced within the Federal range. Results also indicated that the Selective Accessibility Model and the Consider-the-Opposite strategy were partially supported in that generating any information in support or refutation of the sentence anchor reduced anchoring effects.

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INTRODUCTION OF PROBLEM

We all want to be treated fairly. This is especially the case when being sentenced in the courtroom. However, arriving at a definition of what fair treatment is a complicated task. According to the U.S. Congress, sentencing disparity exists when "defendants with similar criminal records found guilty of similar criminal conduct receive dissimilar sentences" (Marvell, 1997; p.14). In other words, the treatment of offenders should be similar if not identical to the degree that the criminal justice system is dealing with similarly situated offenders who have engaged in similar criminal behavior. In practice this naïve conception of justice may be misleading (Kohlberg, 1984). Consider, for example, the large amount of research on judicial decision making that has repeatedly demonstrated that sentencing disparities do occur for identical crimes, even when judges receive the same information (Devine, Clayton, Dunford, Seying, & Pryce, 2001; Diamond, 1981; Ebbesen & Konecni, 1981; Hogarth, 1971; Kerr, MacCoun, & Kramer, 1996; Robbennolt & Studebaker, 1999). Elaborate legal procedures have been established and designed to counteract such disparities, to ensure that the doubt and uncertainty that characterize legal decisions (Saks & Kidd, 1980) do not work against the defendant, and to secure the greatest amount of procedural justice as possible in court (Leventhal, 1980).

Sentencing is a vital part of the criminal justice process. Those involved in sentencing decisions include the investigators, prosecutors, offenders, probation officers, the community, crime victims, and family members (Konecni & Ebbeson, 1992). There has been a large amount of literature written about sentencing. The majority of the non-empirical literature discusses the purpose of sentencing and formalized theories, mostly focusing on the five major goals of punishment (i.e., incapacitation, retribution, deterrence, rehabilitation, and restoration; Carroll,

Perkowitz, Lurgio & Weaver, 1987). The issue of sentencing disparity has received much theoretical and empirical attention (Devine et al., 2001; Ebbeson & Konecni, 1981; Hogarth, 1971). Many explanations have been proposed to help explain sentencing disparities. These explanations have revolved around differences among judges and probation officers in personality, values, various types of attitudes (Schwartz, 1994), and case load factors (e.g., that different judges get different types of cases assigned to them; Ebbeson & Konecni, 1981). This literature has also addressed attempts to reduce sentencing disparity by providing guidelines for sentencing decisions made by judges and jurors (Martin & Alonso, 1997; Robbennolt & Studebaker, 1999).

It is important to note that relatively few criminal cases in which the defendant is found guilty actually proceed to a sentencing hearing (Haney, 2002). That is because approximately 90% of all criminal cases in the U.S. are determined by plea arrangements. For the other 10% of cases that do go to a sentencing hearing, a probation officer will investigate the case and present the judge with a pre-sentencing report (aka. a pre-sentencing investigation). The information included in this report varies from a description of the crime, arrest, charges, prior convictions, and post-arrest events (e.g., bail, plea-bargaining activity, etc.), to a description of the defendant's interview, and even information obtained from family members, employers, neighbors, and psychologists. Finally, the probation officer completes an evaluation based on the facts of the case as presented and a sentence recommendation.

To investigate sentencing disparities that occur for identical crimes, it is essential to understand the psychological mechanisms that may underlie decision making. One model that has been useful in understanding decision making is called the Selective Accessibility Model (Tversky & Kahneman, 1974). The Selective Accessibility Model states that, "people construct a

mental model that selectively increases the accessibility of anchor-consistent information" (p.1125). As a result, this information is now more accessible and will be used when making a subsequent judgment such as a sentencing decision for an offender. One can imagine when a judge is presented with a sentencing report in which the probation officer has focused on aggravating factors to a greater extent than mitigating factors, that judge would construct a mental model in such a way that is consistent with a more punitive sentence. This leads to the question; How might aggravating and mitigating evidence be used to argue for a particular sentence increase or reduction of these effects?

This research tested the Selective Accessibility Model and extended it by exploring sentencing decisions made when an offender was convicted of the same crime, while varying the extremity of the anchor (i.e., the sentence recommended within a Texas State or Federal range), and the ability to generate anchor consistent or inconsistent knowledge (a.k.a., the thought listing/ consider-the-opposite strategy). The purpose of this study was to determine whether anchoring effects can be reduced or eliminated by having participants generate information that argues against the recommended sentence (i.e., target anchor).

Sentencing Guidelines/Ranges

Texas State Courts

Currently in the State of Texas, procedures are in place for jury sentencing in felony cases (West's Texas Statutes and Codes, 2000). However, little information is given to jurors and even when it is given; there is variability in the type of information (e.g., whether the convicted person has the possibility of parole or whether jurors' sentence recommendation is binding on the judge). Furthermore, juries are asked to determine a sentence from within the Texas statutory range, and not any calculated guideline range. In Texas, the statutory range is extremely wide and choosing an appropriate sentence out of such a wide range may be extremely arbitrary. For example, in the State of Texas if an offender is convicted of aggravated robbery, a first degree felony, jurors are asked to choose an appropriate sentence between 5 to 99 years. Very little research has been done investigating how juries might sentence differently if they were given a structured guideline system or a reduced sentence range based on aggravating and mitigating circumstances in the case.

In a previous study (Wildermuth & Hosch, 2006), participants were asked to sentence offenders who were tried and convicted of aggravated robbery (a first degree felony) and aggravated assault (a second degree felony). Participants were asked to sentence these offenders under (1) the Texas State sentence range, (2) the Federal sentence range, or (3) the Texas State sentence range with knowledge of the federal range, but they were instructed to use only the Texas State range to sentence. Results indicated that participants gave more punitive sentences when they sentenced offenders within the Texas State range, followed by offenders sentenced within the Texas State range with knowledge of the Federal range, and then offenders sentenced within the Federal range. Based on these results, it was evident that participants' sentences were

influenced by the variability of the sentence range that was provided regardless of the type of crime that was committed. In addition, those offenders who were sentenced within the Texas State range received approximately twice the sentence length of those offenders who were sentenced within the Federal range, indicating a need for further research investigating anchoring effects in conjunction with sentence ranges and other legal and extra-legal factors. More interestingly, even when participants were instructed to sentence within the Texas State range, the mere mention of what the Federal sentence range was for a particular crime reduced sentences. This supports past research that indicates even (legally) irrelevant information can and will be used as anchors in situations of judgmental uncertainty (Tversky & Kahneman, 1974).

Federal Courts

Federal sentencing guidelines are a set of rules that govern every federal criminal case (United States Sentencing Commission, 2006). The guidelines give judges a range of possible punishments for a given crime, and make it difficult for judges to go outside of the set boundaries. The system was authorized by Congress and set up more than two decades ago as a way to reduce disparities among punishments handed out by different judges. Before the guidelines, federal judges wielded incredible power at sentencing. They could give a defendant any sentence the relevant statute allowed with the average range being as a wide as 10 to 15 years. The result was perceived to be tremendous inequalities across jurisdictions. Two defendants with similar criminal records could commit two indistinguishable crimes and receive two very different sentences from different judges. A lenient judge might give a first time offender probation, whereas, a harsher judge in the same courthouse might make an example by sentencing the same kind of defendant to many years in jail.

Under the guidelines, federal judges no longer chose a sentence from a 10 to 15 year range; instead they chose a sentence that was within a range of roughly six months (United States Sentencing Commission, 2006). As a result, the range within which the judge's discretion was exercised was drastically compressed. The difference between a harsh and lenient judge was more likely to be five months than five years, thus defendants ought to have received more equitable treatment.

During a previous Supreme Court term, in the case of *Blakely v. Washington* (2004), the court stuck down Washington State-sentencing guidelines, which, like the federal guidelines, permit judges to boost sentences based on their own post-conviction fact finding, rather than relying on facts admitted by the defendant or found by a jury. Blakely appealed the decision of the judge, arguing *Apprendi.* In *Apprendi,* the defendant was indicted on a number of charges stemming from an incident in which he fired a gun into his neighbor's house. At his plea hearing the prosecutors filed for, and the judge granted, a sentence enhancement that had not been presented to the grand jury and which increased the maximum sentence he could receive from twenty years to thirty. Justice Stevens' opinion invalidated this enhancement and held that "any fact other than a prior conviction that raises the penalty beyond the prescribed statutory maximum must be submitted to the jury and found to be beyond a reasonable doubt". During the Blakely appeal, the Supreme Court in a 5-4 majority decision upheld *Apprendi*'s requirement.

Therefore, in February of 2006, the Supreme Court ruled that the proper remedy for the conflict between the Guidelines and the Sixth Amendment was to hold unconstitutional two Federal Sentencing Act provisions, § 3553 (b)(1), which made the Guidelines mandatory, and § 3742 (e), which depended on the guidelines mandatory nature. So modified, the Act makes the Guidelines effectively advisory. However, judges are still required to properly calculate and

consider the guidelines when making their sentencing decisions (*Gall v. U.S.* , 2007; *Kimbrough v. U.S.*, 2007).

Underlying Psychological Mechanisms of Anchoring in the Courtroom

Judicial decisions are often judgments made under uncertainty due to the fact that judges and juries must decide the length of a defendant's prison term based on uncertain and partially contradictory evidence (Ebbesen & Konecni, 1981; Englich & Mussweiler, 2001; Diamond, 1981; Hogarth, 1975; Mussweiler & Strack, 2000b). Is it possible that such important judgments with far-ranging implications could be influenced by random numbers? Specifically, would a judge impose a longer prison term after being exposed to a high number? Would this be the case even if the number is clearly irrelevant for the sentencing decision because it is randomly determined?

There is reason to believe that the laboratory findings that demonstrate influences of irrelevant and random anchors do not extend to the realm of judicial decision making. Legal decisions are distinct in a number of important ways and rules have been established to reduce the effect of extralegal influences on decision making. State and federal penal code define criminal acts through specific criteria which must be met in order for an individual to be charged with a particular crime. Killing a person, for example, is only defined as murder if the individual being charged knowingly and intentionally killed the victim. Furthermore, mandatory minimums, maximums and sentence ranges are set by the penal code and the sentencing guidelines so that defendants convicted of the same crime should be subject to the same penalty structure. Procedural rules indicating how evidence must be gathered, presented, and processed are also in place. Therefore, legal decision makers are typically trained and have considerable experience in their area of judgment. Yet, could it be the case that the sentence ranges themselves are also used to anchor decisions? If so, could it be that identical crimes committed

by similar offenders result in sentencing disparities based on anchoring that occurs within the Texas State sentence range versus the Federal sentence range?

Anchoring Effects

The anchoring phenomenon

Human judgment is often influenced by salient anchors (Biswas & Burton, 1993; Kerr, MacCoun, & Kramer, 1996). This is because when we have a judgment to make, we use a simplifying strategy to preserve cognitive resources. That is, we do not have to gather lots of information before making a judgment, saving time and energy. We do this by starting with an estimate (anchor) and then adjusting the estimate to account for the possibility that our estimate is not exact (Robbennolt & Studebaker, 1999). This process should be no different in legal settings. Judgmental anchoring is a demonstrably remarkable phenomenon, not only because of its pervasiveness and robustness, but also because the underlying mechanisms have remained unexplained.

Sentencing decisions are usually made in situations of judgmental uncertainty. In fact, uncertainty is more likely to be the case than not because sentencing decisions are typically complex and involve the use of inherently equivocal information (Saks & Kidd, 1980). Research on underlying judgment processes has shown that anchors, or salient numerical reference points, provide a foundation for reducing the complexity of judgments that involve uncertainty (Higgins, 1996; Tversky & Kahneman, 1974).

For example, Tversky and Kahneman (1974) asked subjects whether the percentage of African Nations in the United Nations was higher or lower than an arbitrary number (i.e., the anchor). Participants were then asked to give their best estimate of this percentage (i.e., either 65% in the high anchor condition or 10% in the low anchor condition). They found that estimates

were assimilated to the anchors so that the mean estimate of those who received the high anchor was 45%, and the mean estimate of those who received the low anchor was 25%.

In addition, a particular sentence that is suggested by a prosecutor or a probation officer is likely to be a powerful anchor. For example, analyses of a sentencing hearing and court files demonstrated that participant's final sentence was assimilated to the sentence that was demanded by the prosecutor (Martin & Alonso, 1997), or recommended by the probation officer (Ebbesen & Konecni, 1981). Thus, manipulation of sentencing ranges may result in sentencing disparities for crimes with similar legal factors. More specifically, offenders who are sentenced for similar crimes in the state courts versus the federal courts may receive very different sentences due to the vast differences in the sentence ranges provided in each of the courts.

Pervasiveness and robustness

Anchoring effects have been demonstrated in many different types of judgments, such as general knowledge questions (Strack & Mussweiler, 1997), price estimates (Mussweiler, Strack, & Pfeiffer, 2000; Northcraft & Neale, 1987), estimates of self-efficacy (Cervone & Peake, 1986), probability assessments (Plous, 1989), evaluations of lotteries and gambling (Chapman & Johnson, 1999), legal judgments (Chapman & Bornstein, 1996; Enlich & Musweiler, 2001), and negotiation (Galinsky & Musweiler, 2001).

In addition to the demonstration of anchoring effects in a variety of laboratory and real world settings, the effects of anchoring are also remarkably robust. Anchoring is independent of many potentially moderating variables. For example, even when anchor values are clearly uninformative for the critical estimate, (e.g., because they were randomly selected; Mussweiler & Strack, 2000; Tversky & Kahneman, 1974), anchoring occurs. Also, anchors that are implausibly extreme continue to have an effect (e.g., Chapman & Johnson, 1994; Strack &

Musweiler, 1997). For example, estimates for Mahatma Gandhi's age were assimilated to an unreasonably high anchor value of 140 years (Strack & Musweiler, 1997). Other research indicates that motivation (Wilson, Houston, Etling, & Brekke, 1996), and expertise (Englich & Musweiler, 2001; Northcraft & Neale, 1987), do not diminish or eliminate anchoring effects. In addition, attempting to improve accuracy by awarding a prize for the best estimate was unsuccessful. For example, Englich and Musweiler (2001) found that experienced judges and inexperienced law students were influenced similarly by the anchor sentencing demand given by a computer science student.

Furthermore, anchoring effects have remarkable temporal durability and persist over fairly long periods of time. In one study, for example, anchoring effects were still apparent one week after the anchor value had been introduced (Musweiler, 2001). Even more impressive was a study by Wilson, Houston, Etling, and Brekke (1996), who demonstrated the robustness of the phenomenon by showing that explicit instructions to correct for a potential influence of an anchor do not mitigate the effect. Even explicitly informing judges about the potential distortion and its direction did not diminish the effect. This suggests that anchoring is an extremely strong phenomenon that is difficult to avoid.

Relevance

Judgmental anchoring is a basic concept that has been used to explain a variety of judgmental phenomena. For example, anchoring has been used to explain attitudes and the egocentricity of social judgment (Gilovich, Medvec, & Savitsky, 2000). In particular, it has been demonstrated that people may overestimate the extent to which their appearances are noticed by others, because they anchor on their own experiences. Hindsight bias (Davies, 1992), the

assimilation of a recalled estimate towards a provided solution, has also relied on anchoring explanations.

Most often, anchoring has been applied to probabilistic inferences when referring to judgment and decision making. Preference-reversal effects (Kerr et al., 1996; Lichtenstein & Slovic, 1971), the distortion of estimates for the probability of disjunctive and conjunctive events (Bodenhausen, Gabriel, & Lineberger, 2000; Tversky & Kahneman, 1974), and the assessment of subjective probability distributions (Tversky & Kahneman, 1974), have all been attributed to the judgmental anchoring phenomenon.

Anchoring also occurs in applied contexts such as negotiations (Neale & Bazerman, 1991). For example, Galinsky and Musweiler (2001) posited that initial offers influence final negotiation outcomes because they are used as judgmental anchors to which the final outcome is assimilated. Biswas and Burton (1993) suggest that anchoring affects consumer behavior such that price claims in advertisements influence consumer behavior because they serve as anchors in product evaluation.

All of this research suggests that judgmental anchoring has a great deal of explanatory power. However, many of these accounts can not be sufficiently explained by relying on the notion of anchoring alone. That is, anchoring by itself does not explain what underlying mechanisms are at work. Anchoring only describes the direction of the observed influence, and thus gives us a descriptive rather than explanatory concept which does not go beyond the terms assimilation and contrast (Epley & Gilovich, 2001). Understanding the psychological mechanisms that underlie anchoring can provide us with a more useful concept.

Paradigms

Typically, anchoring effects are examined in Tversky and Kahneman's (1974) classic paradigm where anchors are explicitly provided by having people compare a target to an anchor value. This paradigm is most commonly achieved by presenting a comparative anchoring question and asking participants to indicate whether the application of the target is larger or smaller than the anchor value. The targets are, in an attempt to reduce the perceived informativeness of the anchor values, ostensibly selected at random. Random selection processes have involved everything from spinning a wheel of fortune (Tversky & Kahneman, 1974), emphasizing the random selection in the instructions (Strack & Musweiler, 1997), and throwing dice (Musweiler & Strack, 2000). As described previously, Tversky and Kahneman (1974) asked their research participants to give their best estimate of the percentage of African Nations in the United Nations. Participants' absolute judgments were assimilated to the anchor such that the mean estimate provided by participants who received the high anchor was 45%, compared to 25% for participants who received the low anchor.

In cases in where the anchor is clearly informative for the judgment to be made, the anchor may be implicitly provided to the participants. For example, Northcraft and Neale (1987) had real-estate agents estimate the value of a property after being given a 10 page pamphlet including all the information important for real-estate pricing. The pamphlet also contained the listing price of the house, which was the independent variable. The price provided was either above or below the actual appraisal value of the property (e.g., $83,900 vs $65,900). Results indicated that participants' estimates for the value of the property were assimilated towards the provided anchors, replicating the typical anchoring effect.

Anchors can also be self-generated rather than explicitly or implicitly provided by the experimenter (Tversky & Kahneman, 1974). In one such study, participants were given five seconds to estimate the result of a product that was either presented in ascending sequence (1 x 2 x …. x 8) or in descending sequence (8 x 7 x …. x 1). Participants' estimates for the ascending sequence were lower than for the descending sequence. It was reasoned that because participants used the result of calculating the product of the first few numbers (i.e., which is lower for the ascending sequence than for the descending sequence) as a self-generated anchor, final estimates were then assimilated to this anchor. Similarly, judges may assimilate their estimates to self generated anchors that are closely associated with the target quantity. In another example, participants who were asked to give their best estimate for the freezing point of vodka generated zero degrees Celsius as the freezing point of water as an anchor. Then they adjusted downwards because they knew that the freezing point of alcohol is lower (Epley & Gilovich, 2001).

Finally, anchoring effects may occur by increasing the accessibility of the anchor value in a preceding unrelated task (Wilson et al., 1996). In one experiment, participants were first induced to copy either five pages of numbers ranging from 4421 to 4579 or five pages of words (Wilson et al., 1996). Subsequently, they were asked to estimate the number of students at the University of Virginia who would contract cancer within the next 40 years. Participants who had copied five pages of high numbers estimated this number to be higher than those who had copied five pages of words. Thus, the arbitrary high anchor presented in the preceding task influenced the judgment.

In sum, four different experimental paradigms in which the anchor values are either explicitly or implicitly provided by the experimenter, self-generated, or provided in an unrelated task, have demonstrated anchoring effects. However, the standard paradigm used in most

anchoring research, was demonstrated by Tversky and Kahneman (1974) where they first asked participants a comparative anchoring question and then an absolute anchoring question.

Theoretical Accounts

Four theoretical accounts of anchoring have been proposed in the past. These theoretical accounts have suggested that anchoring effects result from (1) insufficient adjustment from a starting point, (2) conversational influences, (3) numerical priming, and (4) mechanisms of selective accessibility.

Insufficient Adjustment. In their initial description of the phenomenon, Tversky and Kahneman (1974) describe anchoring in terms of insufficient adjustment from a starting point. They argue that "[…] people make estimates by starting from an initial value that is adjusted to yield the final answer […]. Adjustments are typically insufficient. That is, different starting points yield different estimates, which are biased toward the initial value" (Tversky & Kahneman, 1974, p.1129). Basically, adjustment may be insufficient because it begins and ends within a range of acceptable values for the estimate (Epley & Gilovich, 2001). For example, participants who are asked whether the percentage of African Nations in the UN is higher or lower than 65% may use this anchor value as a starting point, determine whether it is too high or too low, and then adjust in the appropriate direction until the first acceptable value is found. However, such inefficient adjustment within a range of acceptable values is only possible if the anchor value falls outside this range in that the value itself is unacceptable. This may be the case because the anchor value is absurdly extreme or because it is known to be wrong. For example, participants who self-generate the freezing point of water as an anchor in order to estimate the freezing point of vodka, are likely to know that 0 degrees Celsius constitutes an unacceptable value because the freezing point of alcohol is below that of water (Epley & Gilovich, 2001). As a

consequence, they may adjust from this unacceptable value until the first acceptable value is reached.

However, anchoring effects also occur when anchor values are acceptable (e.g., Strack & Musweiler, 1997). It is difficult to explain effects of plausible and acceptable anchors by an "insufficient adjustment" explanation because there is no reason to adjust from these anchors from the start. Thus, the insufficient adjustment account appears to be limited to implausible anchors that are clearly unacceptable (Musweiler & Strack, 2001). In addition, it has been demonstrated that insufficient adjustment only explains anchoring effects when the critical anchors are unacceptable and self-generated, but not when the values are acceptable and provided (Epley & Gilovich, 2001).

Conversational Inferences. Anchoring has also been attributed to conversational inferences. According to this account, applying implicit rules of natural conversations to standardized situations (Schwartz, 1994), allows participants to use the anchor value to infer the actual range of possible answers. Participants, who expect the experimenter to provide full disclosure (Schwartz, 1994) in asking his or her questions, may assume that the anchor value provided is close to the actual value and thus position their estimate around this value. Conversational inferences may underlie the effects of considering anchor values that are clearly relevant for the estimate to be made (e.g., Northcraft & Neale, 1987). However, it is important to note that this account assumes that the anchor value is actually viewed as being important for the judgment. Anchoring effects, however, also occur when anchor values are clearly uninformative because they are implausibly extreme (Strack & Musweiler, 1997), were randomly selected (Tversky & Kahneman, 1974), or are simply not related to the question (Wilson et al., 1996).

Thus, although conversational inferences are potential determinants of anchoring in natural situations, they are not a necessary prerequisite.

Numeric Priming. A third theoretical account assumes that anchoring effects are superficial and completely numeric in nature (Jacowitz & Kahneman, 1995; Wilson et al., 1996; Wong & Kwong, 2000). In particular, solving a comparative anchoring task may make the anchor value itself more accessible, and in turn, this value is likely to influence the subsequent absolute judgment. From the numeric-priming perspective, the anchor value itself is the sole determinant of anchoring effects, regardless of its context, the target with which it is compared, or the judgmental operations in which it is involved. One recent account even goes so far as to claim that anchoring effects may be so superficial that only the absolute value of the anchor (e.g., "50" for an anchor of "-50 degrees Celsius") is represented in memory and results in the primary anchoring influence (Wong & Kwong, 2000).

As persuasive as this numeric account may seem, further analysis of anchoring research indicates that focusing exclusively on the numeric anchoring value does not give us a complete understanding of judgmental anchoring. In particular, research demonstrates that in the standard paradigm, the semantic content associated with the anchor must be taken into account for a complete understanding of the findings. For example, a purely numeric account cannot account for the fact that anchoring effects depend on changes in the judgmental dimension (Strack & Musweiler, 1997). If anchoring effects were brought about by the anchor value itself, then identical effects should result regardless of the semantic content associated with the anchor. For example, comparing the height of the Brandenburg Gate to a given anchor value should have identical effects on subsequent judgment of the height and the width of the Gate, because the numeric properties of the anchor value are not changed when the judgmental dimension is

adjusted. However, this is not the case. Strack and Musweiler (1997), report that the magnitude of the anchoring effect is reduced if the comparative anchoring question pertains to another dimension than the absolute anchoring question.

Furthermore, a purely numeric account of the temporal robustness of anchoring effects does not account for the fact that anchoring effects are transitive and short-lived. Mussweiler (2001) has suggested that we are constantly exposed to arbitrary numbers, our daily routines (e.g., calling a friend, paying a bill) and therefore, this exposure should immediately wipe out the effects of solving a comparative anchoring task. However, the fact that anchoring effects can prevail for a week (Mussweiler, 2001) is in conflict with this implication and makes a purely numeric conceptualization of the standard anchoring paradigm unconvincing.

Selective Accesibility. The Selective Accessibility (SA) model of anchoring is a fourth theoretical account proposed by Mussweiler and Strack (1999). This model takes into account that anchoring happens in situations where the consequences of comparing a given target to a numeric standard are assessed with a succeeding absolute judgment of this target (Mussweiler, 2003). Absolute target judgments, as in any judgment, reflect the implications of accessible target knowledge. Analyzing the informational consequences of the comparison is necessary to understand the mechanisms that lead to the adjustment of absolute estimates towards the anchor. Absolute judgments are likely to be based on the knowledge that is accessible at the time the judgment is made, so that examining the accessibility of target knowledge may provide a more complete understanding of the anchoring conundrum.

The basic assumption of the SA model is that anchoring is in essence a knowledge accessibility effect, and therefore is semantic in nature (Mussweiler & Strack, 1999). Two fundamental principles of social cognition research are used to explain anchoring in this model:

(1) *hypothesis-consistent testing* and (2) *semantic priming*. The model predicts that comparing the judgmental target to the anchor value changes the accessibility of knowledge about the target. Specifically, the accessibility of anchor-consistent target knowledge is selectively increased. It is assumed that judges compare the target with the anchor by testing the possibility that the target's value is equal to the anchor value. For example, judges who are asked whether the percentage of African Nations in the UN is higher or lower than a high anchor of 65% are assumed to test the possibility that this value equals 65%. As they test this possibility, they selectively retrieve knowledge from memory that is consistent with this assumption (e.g., "Africa is a huge continent", "There are more African nations than I can keep in mind", etc.).

This type of hypothesis-consistent testing is a general tendency that contributes to many different judgmental processes (Klayman & Ha, 1987). Consequently, the accessibility of anchor-consistent knowledge is increased. In order to determine the final numeric estimate, previously generated anchor-consistent knowledge is primarily retrieved (Higgins, 1996), so that an individual's estimate is greatly influenced by that information. In the UN example, absolute estimates about the percentage of African Nations in the UN would thus be based on target information that was deliberately retrieved in an attempt to be consistent with the notion that this percentage is fairly high. Using this knowledge results in high estimates, so that the final estimate is similar to the anchor value.

Similarities between anchoring and knowledge accessibility effects

In general, a large body of evidence demonstrates that anchoring effects share many of the qualities that are characteristic of knowledge accessibility effects, which is consistent with the conceptualization of anchoring as a knowledge accessibility effect (Higgins, 1996). Anchoring effects are dependent upon the accessibility of knowledge made salient during the

comparative task. It has been demonstrated that the amount by which the accessibility of a concept is increased in a priming task is determined by how relevant the concept is to the judgment (Higgins, Rholes, & Jones, 1977). Similarly, the magnitude of anchoring depends on how relevant the knowledge made accessible during the comparative task is critical to the absolute judgment. As described before, when comparing the height of the Brandenburg Gate to an anchor value, stronger effects are found when comparing absolute estimates of the height of the Gate than on estimates of its width (Chapman & Johnson, 1999; Strack & Mussweiler, 1997). This difference may exist because the knowledge generated during the comparative task is more relevant for absolute estimates of height than for absolute estimates of width (i.e., it is more applicable to judgments of height). Therefore, the stronger influence is on estimates of height. In general, anchoring effects are similar to knowledge accessibility effects in that they both appear dependent upon the applicability criterion (Higgins et al., 1977).

Direct Support for Selective Accessibility

The most direct support for this notion suggests that this accessibility increase is specific to the judgmental target itself (Mussweiler & Strack, 2000a). That is, the knowledge that is rendered accessible has to do specifically with the judgmental target. For example, comparing the self as a judgmental target to a high anchor of general knowledge only increases the accessibility of knowledge indicating that the self is knowledgeable, whereas the accessibility of knowledge about a close other remains unchanged (Mussweiler & Strack, 2000a). These studies provide support for the basic assumption of the SA model. Comparing the target to the anchor value does appear to increase the accessibility of anchor-consistent semantic knowledge about the target. Using this knowledge as a base for the absolute estimate produces the assimilation effect that is known as the typical consequence of anchoring.

Integration: Anchoring as a two stage process

As previously discussed, anchoring effects are in essence knowledge accessibility effects. The comparison of the judgmental target with the anchor value seems to involve a selective search for anchor consistent target knowledge. Although this target-anchor comparison appears to be a base stage in all of the anchoring paradigms described, at least some of the paradigms involve a preceding stage. In paradigms in which the anchor value is not explicitly provided to judges, there is a selection process by which judges have to select a potential anchor which is then compared to the target. To complete this comparison, judges must first engage in a selection process before they can draw comparisons that involve mechanisms of selective accessibility. Therefore, to completely understand the anchoring phenomenon, there must be a differentiation between the two stages: the selection of a judgmental anchor, and its subsequent comparison with the target (Wilson et al., 1996), which are clearly identifiable with respect to the processes they involve.

In the standard anchoring paradigm (Tversky & Kahneman, 1974), selection processes do not play much of a role because the standard is explicitly provided to the judges. However, in everyday life, selection processes are an important aspect of many judgments. As concluded in various areas of psychology, human judgment is essentially relative or comparative in nature, even if a comparison is not explicitly asked for (Mussweiler, 2003). This disposition towards comparative evaluation is most evident in situations in which judges have little target knowledge available, as is typically the case in anchoring studies. Judges, who desperately search for information that may help them to estimate a quantity they have never thought about, are likely to consider the target quantity in comparison to a standard it appears to be bringing to mind. Participants who estimate the percentage of African Nations in the UN, for example, may

compare this target quantity to a number that comes to their mind, because they have previously compared it to the unrelated quantity of the number of physicians listed in the local phone book (Wilson et al., 1996). Therefore, an unrelated anchor value may be selected as a comparison standard for the generation of the target estimate, so that this stage of standard selection is open to numeric influences.

Three different mechanisms may influence the initial stage of standard selection (Chapman & Johnson, 1999; Griffin, Dunning, & Ross, 1990; Higgins et al., 1977). First, a particular value may be selected as an anchor because conversational inferences suggest it to be relevant. For example, if a particular anchor is explicitly mentioned by the experimenter, then judges may use it to compare it to the target. Second, a value may be selected as an anchor because it is easily accessible and comes to mind during the evaluation of the target. Finally, an anchor may be self-generated through an insufficient adjustment process. Judges who are provided with an implausible anchor may use this value as a starting point to generate a more plausible value, which is then compared to the target. These alternative mechanisms of conversational inference, numerical priming, and insufficient adjustment may contribute to the selection of an anchor value.

The outcome of this process of standard selection may influence the subsequent evaluation processes of the target. Yet, selecting a standard by itself is not enough to influence how the target is judged. Instead, these effects result from the selected standard – judgmental target comparison process. Importantly, for a selected standard to be helpful for target evaluation, it has to be related to the characteristics of the judgmental target. It is this process that requires the activation of semantic target knowledge and is, in light of the accrued evidence (Mussweiler & Strack, 1999), likely to involve the process of selective accessibility.

Considering this information, there are at least two distinguishable types of anchoring effects: a relatively shallow anchoring influence that operates at the stage of standard selection, and a deeper anchoring effect that has its roots in the comparison stage (Mussweiler & Strack, 1999). Notably, it is the latter effect that is typically seen as the classic case of anchoring. The actual comparison appears to involve a relatively elaborate process of testing the hypothesis that the target quantity may be similar to the comparison standard by selectively generating target knowledge that supports this assumption. This hypothesis-testing process increases the accessibility of standard-consistent knowledge about the target, which influences subsequent target judgments.

Thought Listing/ Consider-the-Opposite Strategy

Inducing judges to consider reasons why the implications of the anchor value may be wrong may be a strategy that can reduce the magnitude of anchoring effects. In line with this assumption, it has been demonstrated that "considering the opposite" (Lord, Lepper, & Preston, 1984), that is, taking into account evidence that is inconsistent with one's initial beliefs, is an effective strategy to improve human judgment in a variety of domains. For example, Koriat, Lichtenstein, and Fischhoff (1980) found that applying a consider-the-opposite strategy reduces overconfidence in the correctness of a chosen answer. Inducing participants to list arguments that speak against the validity of their responses reduces their confidence in its correctness (see also Griffin et al., 1990). This may be the case because overconfidence results from a neglect of evidence that contradicts the chosen alternative so that making this evidence more salient reduces the effect (Koriat et al., 1980). Similar strategies were found to mitigate other judgmental biases, such as the hindsight bias (Davies, 1992), and biased processing of new information (Lord et al., 1984).

The psychological processes that mediate these phenomena (Koehler, 1991) appear to be similar to those that underlie judgmental anchoring. Hence, a consider-the-opposite strategy also may reduce the anchoring effect. In fact, some relevant data (Chapman & Johnson, 1999) support this assumption. In one study, participants were asked to estimate the likelihood that a Republican would win the next presidential elections after indicating whether this probability is higher or lower than the last two digits of their social security number. Before giving their final estimate, some of the participants were instructed to list one reason why a Republican would win, some why a Republican would not win, and some were not instructed to list any reasons. A significant anchoring effect was obtained for those participants who listed reasons that were

consistent with the implications of the anchor value (e.g., pro arguments for a probability of more than 50%) or no reasons at all. Considering the reasons that were inconsistent with the anchor (e.g., con arguments for a probability of more than 50%), however, eliminated the bias. From the current perspective, this may have been the case because listing reasons that oppose the implications of the anchor value increased the accessibility of anchor-inconsistent semantic knowledge. Thus, anchor-consistent and anchor inconsistent knowledge was similarly accessible so that the knowledge base used to make the final estimate was unbiased. Consequently, judgments were unbiased as well.

Previous Knowledge/ Experts vs. Laypeople

There is reason to believe that anchoring not only influences inexperienced laypeople but also may be a potential bias in judgments of experts. Previous research (Mussweiler, Strack, & Pfeiffer, 2000; Northcraft & Neale, 1987) has demonstrated that even experienced experts are influenced by a salient anchor. For instance, the estimates of experienced real-estate agents (Northcraft & Neale, 1987) and car mechanics (Musweiller et al., 2000) were assimilated to the provided anchors.

In sum, these findings indicate that anchoring is a pervasive and robust effect in human judgment that reliably influences numeric estimates in a variety of natural settings. Because criminal sentencing decisions typically pertain to numeric quantities (i.e., a prison term or fine), these findings suggest that anchoring also may be influential in this domain. Furthermore, this bias is likely to influence even experienced judges. From this perspective, judgmental anchoring constitutes one possible explanation for sentencing disparities. To the extent that judges use different judgmental anchors to make their sentencing decisions, the resulting sentences are likely to differ.

Hypotheses

The present study investigated the impact of Federal and Texas State sentencing ranges on jury sentencing decisions by using a selective accessibility account for anchoring. Because the guidelines continue to be relevant to sentencing decisions, and because the Federal and Texas state ranges differ in their prescribed sentences for identical criminal acts and offenders, further investigation was needed to determine how these ranges may be used as anchors contributing to differences in the amount of time an offender is sentenced to spend in a correctional facility. Specifically, it was beneficial to know if there were differences in sentence for an offender convicted of the same crime, but who was tried in a federal court versus a state court. Because the federal ranges are much narrower than Texas State ranges, the use of these ranges was predicted to result in sentencing disparities.

Sentence Range

It was hypothesized that there would be a main effect for sentence range such that participants asked to sentence within the Texas State range would be most punitive in their sentencing and participants asked to sentence within the Federal Range would be least punitive. This is because the prescribed sentence range for a burglary of habitation in Texas State courts is more varied than the prescribed sentence range in Federal court.

Sentence Anchor

Under both Federal and Texas State ranges, it was predicted that there would be a main effect for anchor such that participants given a high sentence anchor would be more punitive in their sentencing than participants given a low sentence anchor.

Consider-the-Opposite Strategy

It was also predicted, under both Federal and Texas State ranges, that there would be a main effect of consider-the-opposite strategy such that participants asked to list reasons why their sentence is inconsistent with the sentence anchor or participants not asked to list reasons (i.e., control), would be less punitive in their sentencing in comparison to participants asked to list reasons why their sentence is consistent with the sentence anchor.

Anchor and Consider-the-Opposite Strategy Interaction

It was hypothesized that there would be a two-way interaction between the anchor and the consider-the-opposite strategy such that participants who were given the high sentence anchor and asked to list reasons why the anchor may be correct (i.e., consistent) would be most punitive in their sentencing. Participants who were given the low sentence anchor and asked to list reasons why the anchor may be incorrect (i.e., inconsistent) would be least punitive in their sentencing. This interaction was expected under both Federal and Texas State sentence ranges.

Debiasing Effects of Reasons Generated

Based on previous research (Chapman & Johnson, 1999), it was predicted that anchoring effects would be obtained for those participants who listed reasons that were consistent with the implications of the anchor value and for participants who listed no reasons at all. When participants were asked to list reasons that were inconsistent with the anchor, it was expected that the bias would be eliminated. This is because listing arguments that oppose the implications of the anchor value should increase the accessibility of anchor-inconsistent semantic knowledge. Thus, anchor-consistent and anchor-inconsistent knowledge should be similarly accessible so that the knowledge base used to make the final estimate is unbiased, and consequently judgments should be unbiased as well.

Debiasing Effects and Number of Reasons Generated

Based on previous research (Mussweiler et al., 2000), it was predicted that for the low anchor condition, the number of generated reasons and sentence would be unrelated. However, for the high anchor condition, number of generated reasons and sentence would be negatively correlated. That is, the more anchor inconsistent reasons that were generated the lower the sentence would be.

Method

Participants

Two hundred sixty-two participants (164 women, 98 men) were recruited on a voluntary basis from the Human Subject Pool in the Psychology Department at the University of Texas at El Paso and received course credit for their participation in the study. Sample size was determined by running a power analysis at .80 power for the three-way interaction predicted between sentence range, sentence anchor, and consider-the-opposite strategy. Participants ranged in age from 17 to 55 years ($M = 21.74$, $SE = .35$). A majority of the participants were freshman (40 %), 19 % were sophomores, 9 % were juniors, and 26 % were seniors. Eighty-one percent of the participants were Hispanic/ Latino, 9 % were non-Hispanic white/ Caucasian, 2 % were African American, 1 % was Asian, and 7 % classified themselves as "other". A moderate effect size was expected. The estimated effect size was based on the sentencing literature in which small effect sizes were found and the anchoring literature with large effect sizes. Participants were treated in accordance with the American Psychological Association standards of ethical principles in recruiting and using human participants in research and all responses were anonymous and confidential (APA Guidelines, 2001). Research assistants were fully trained and educated in using human participants and were monitored by the primary investigator.

Registered Voters and Jury Service

Participants were asked if they were registered voters or if they had ever served on a jury before. This was done to obtain an indication of their potential as future jury members and their real-world experience with the process (See Appendix A). To be jury eligible in the state of Texas, an individual must: (1) be at least 18 years old, and (2) have a valid Texas driver's license, or be a registered voter. A frequency count revealed that 229 participants (i.e., 82.1%)

out of 262 total participants (i.e., 100%) indicated that they were jury eligible. To keep the sample similar to the jury eligible population that would be making sentencing decisions, all further analysis were performed with jury eligible participants only.

Participants' Perceptions of Case Realisticness

As a manipulation check participants were asked to indicate how realistic they perceived the criminal case to be. Their responses were measured on a 7-point Likert-type scale ranging from 1 (completely unrealistic) to 7 (completely realistic). Participants who indicated a 5 or more on the scale (i.e., 87.4%, $n = 216$) were scored as viewing the criminal case realistic. Those scoring 4 or below on the scale (i.e., 12.6 %, $n = 13$) were scored as viewing the case as unrealistic. In order to get a more accurate picture of participants' sentencing decisions, those 13 participants who rated the criminal case as unrealistic were not included in any further analyses.

Materials

Criminal Case

A trial transcript of a burglary of habitation was taken from Hosch, Daudistel, Shaw, and Ponder (1999), and was used as the task. The transcript consisted of a description of the events that occurred on the evening of burglary of habitation as told through the defendants', victims', and arresting police officers' testimony (See Appendix B). Participants were told that the defendant was convicted of the burglary of habitation charge. Participants were then asked to make a sentencing decision based on the charge.

Sentence Ranges

Both the Texas State and Federal sentence ranges for a burglary of habitation were employed in the study. The Texas State range for burglary of habitation was determined by using the Texas Penal Code (2005), and was 24 to 240 months. The Federal sentence range for

burglary of habitation was determined in collaboration with a former federal judge by using the Federal Sentencing Guidelines worksheets and sentencing table, and was 22 months to 34 months (United States Sentencing Commission, 2006). The use of the Federal Sentencing guidelines involved completing appropriate worksheets and using the Federal sentencing grid to arrive at a sentence range.

Anchors

High and low anchors were be determined by taking the 15th and 85th percentiles of the Texas State sentence range (24 – 240 month range), and the Federal sentence range (22 - 34 month range). The 15th and 85th percentiles for the Texas State were 55 months (i.e., low anchor) and 204 months (i.e., high anchor), respectively. For the Federal sentence range, the 15th and 85th percentiles were 25 months (i.e., low anchor) and 29 months (i.e., high anchor), respectively.

Consider- the- Opposite Strategy

The consider-the-opposite strategy took place after the initial comparison to the sentence anchor provided. It consisted of asking participants to list reasons why they believed that the suggested anchor is too high or too low. Participants in the consistent and inconsistent conditions were asked to list reasons to support, or asked to list reasons to refute, the suggested sentence anchor. Participants in the control condition were not asked to list any reasons.

Procedure

Pilot Testing

A pilot test was run to ensure that the anchors selected had enough variability to detect an effect if one was present. The pilot test was conducted by presenting participants with the crime transcript and sentence anchors and asking them to provide a final sentence. Results indicated that the anchors were varied enough to detect an effect.

Experiment

Participants were tested in groups of 10 or fewer. When all participants arrived, they were seated at a table in a large room and asked to review the informed consent document and sign it if they agreed to participate in the study. Oral instructions regarding what participants would be doing during the course of the study were given by the experimenter. Following instructions, participants began the experiment by answering questions regarding basic demographic information. Once all participants had filled out the demographic information, their response sheets were collected. Participants were then told that some of the questions they would answer would require a comparison with a given numerical standard and that these standards were randomly selected by a computer program. It was pointed out that this comparison was necessary to identify the impact of different question formats. In actuality, this was done to reduce the anchor values ascribed informativeness (Mussweiler et al., 2000) and thus ensure that the obtained effects were not mediated by conversational inferences (Jacowitz & Kahneman, 1995).

Next, participants were given a binder that contained the burglary of habitation crime transcript. They were told to read through the entire transcript and close their binders when finished. Once all participants were finished reading about the burglary of habitation, they were given a packet and asked to indicate whether an ostensibly randomly chosen sentence (i.e., the sentence anchor) was too high, too low, or just right. In two of the conditions (i.e., consistent and inconsistent argument; see Appendix C), participants were asked to list as many reasons as possible (at least 1), to support the sentence anchor given or to refute the sentence anchor given (e.g.," What would you say argues for/ against this sentence?"). They were also instructed that they were not allowed to continue until they listed at least one reason for or against the sentence.

In the third condition (i.e., no argument control; see Appendix D), the consider-the-opposite question was not presented, thus participants were not asked to generate any such reasons.

Next, all participants were asked to indicate what sentence they thought the offender should receive for the crime (e.g., "Could you tell me what you think is the appropriate sentence for this offender?"), followed by an indication of their certainty about their decision. Then participants were asked if their recommended sentence fell within a particular range of ostensibly randomly selected numbers (i.e., the particular sentence range for aggravated robbery in Texas State courts is 24 to 204 months; in Federal court is 25 to 29 months). If it did not, they were asked to revise their sentence to fit within the range (e.g., "If you had to change your sentence to fit within this range, what would it be?"), followed by an indication of the certainty of their revised sentence on a scale of 1 (very uncertain) to 7(very certain; Englich & Mussweiler, 2001). Finally, participants were asked to answer general questions about the realism of the case materials on a scale from 1(very unrealistic) to 7 (very realistic; see Appendix E).

When all participants completed their packet, they were debriefed, thanked for their time, and given an opportunity to ask questions about the experiment.

Design

A 3 (Consider-the-Opposite Strategy: consistent, inconsistent, no argument) by 2 (Sentence Anchor: high or low) by 2 (Sentence Range: Texas State vs. Federal) between subjects design was implemented to investigate the main effect of sentence range. The dependent variable was sentence. To further investigate the differences within the Texas State and Federal ranges, a 3 (Consider-the-Opposite Strategy: consistent, inconsistent, no argument) by 2 (Sentence Anchor: high or low) between subjects design was implemented for the Texas State sentence range and for the Federal sentence range. The dependent measure for both was sentence, which

was measured by providing participants with a blank space to write in a number. All data and analyses are reported at the group level.

Results

Main Effect of Sentence Range

It was predicted that there would be a main effect for sentence range, such that participants asked to sentence under Texas State ranges would give more punitive sentences than participants asked to sentence under the Federal range. To test this hypothesis, a 2 (Sentence Range: state vs. federal) by 2 (Sentence Anchor: high vs. low) by 3 (Consider the Opposite Strategy: consistent vs. inconsistent vs. control) between subjects ANOVA was performed on sentence. Consistent with hypotheses and replicating previous findings, there was a main effect for sentence range, F (1, 204) = 30.38, $p < .001$, $\eta^2 = .130$. Participants were more punitive when sentencing the offender under the Texas State range ($M = 44.62$, $SE = 2.43$) than when sentencing the offender under the Federal range ($M = 26.14$, $SE = 2.31$, see Figure 4). In order to understand the differences within the Federal and Texas State range, planned comparisons were performed.

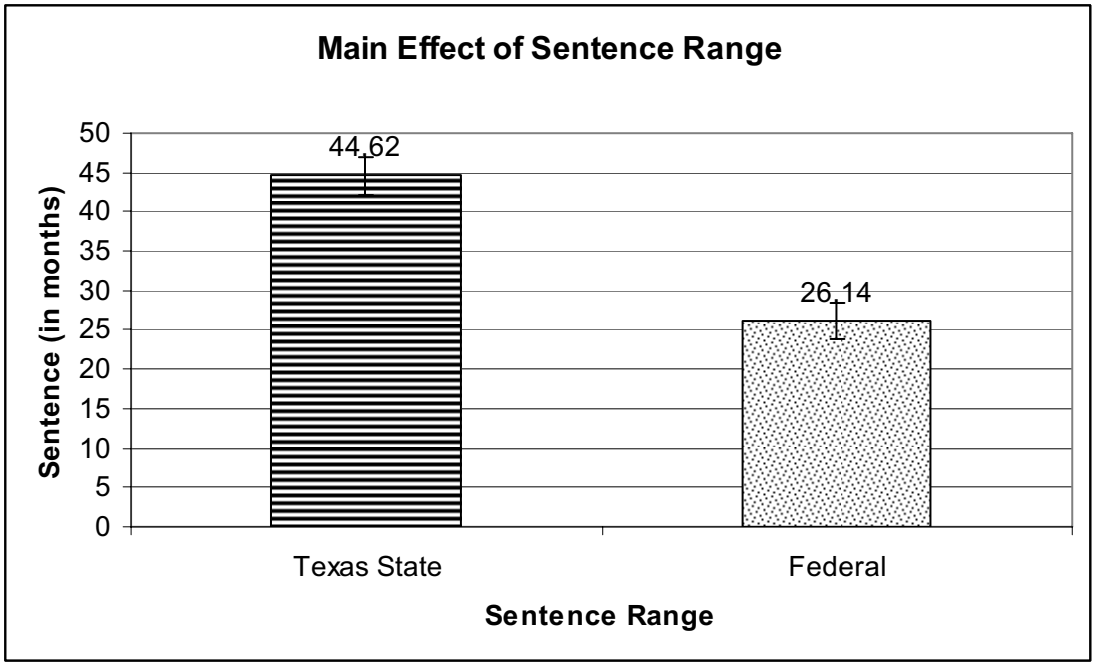

Figure 1. Main effect of sentence range on sentence length.

Effects of Sentence Anchor and Consider-the-Opposite Strategy on Sentence

Federal Sentence Range

Within the federal sentence range, a 2 (Sentence Anchor: high vs. low) by 3 (Consider-the-Opposite Strategy: consistent vs. inconsistent vs. control) between subjects ANOVA was performed on sentence to determine whether there were main effects or interactions of sentence anchor and consider-the-opposite strategy. Contrary to hypotheses, no significant main effects or interactions were found (all *F*-values non-significant).

Texas State Sentence Range

Within the Texas State sentence range, a 2 (Sentence Anchor: high vs. low) by 3 (Consider-the-Opposite Strategy: consistent vs. inconsistent vs. control) between subjects ANOVA was performed on sentence to determine whether there were main effects or interactions of sentence anchor and consider-the-opposite strategy. There was a main effect for sentence anchor, F (1, 96) = 5.29, p = .024, η^2 = .052. As predicted, participants who received a high sentence anchor (M = 51.51, SE = 4.31) gave more punitive sentences than those who received a low sentence anchor (M = 37.38, SE = 4.38, p = .024; see Figure 1).

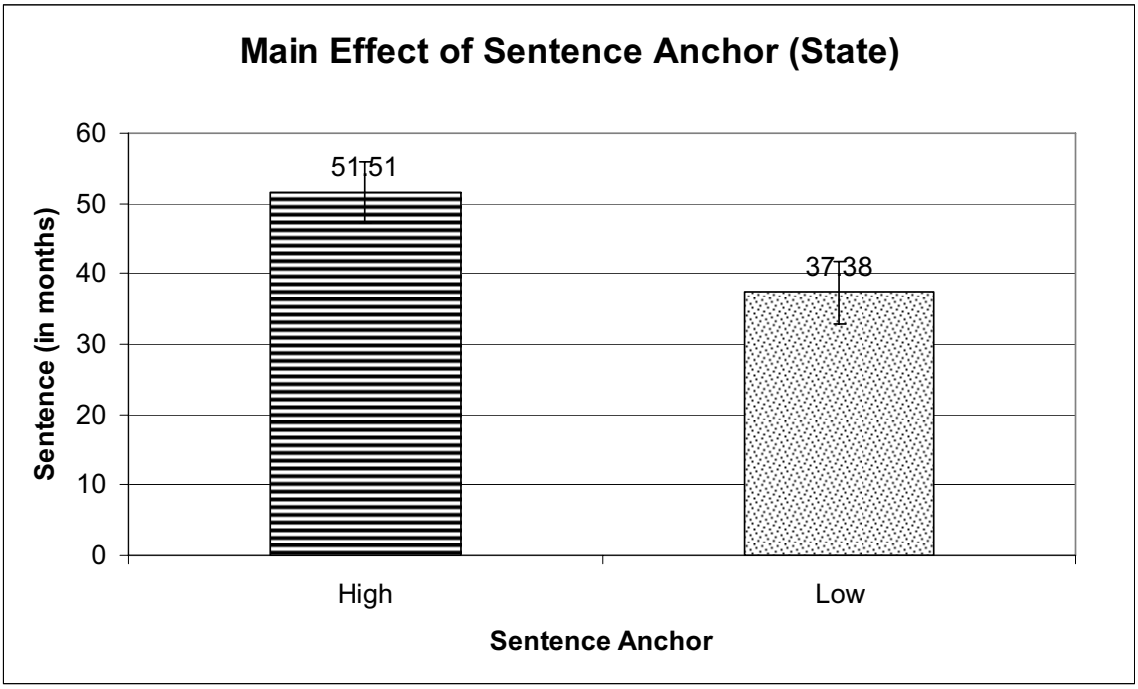

Figure 2. Main effect of sentence anchor on sentence length under a Texas State range.

There was also a main effect for consider-the-opposite strategy, F (2, 96) = 3.00, p = .050, η^2 = .059.Contrary to expectations, participants not asked to list reasons to support or refute their sentence anchor (M = 54.83, SE = 5.22) gave more punitive sentences than participants asked to list reasons consistent with their sentence anchor (M = 37.10, SE = 5.67, p = .023; see Figure 2). There were no other significant differences between these groups (p's > .05).

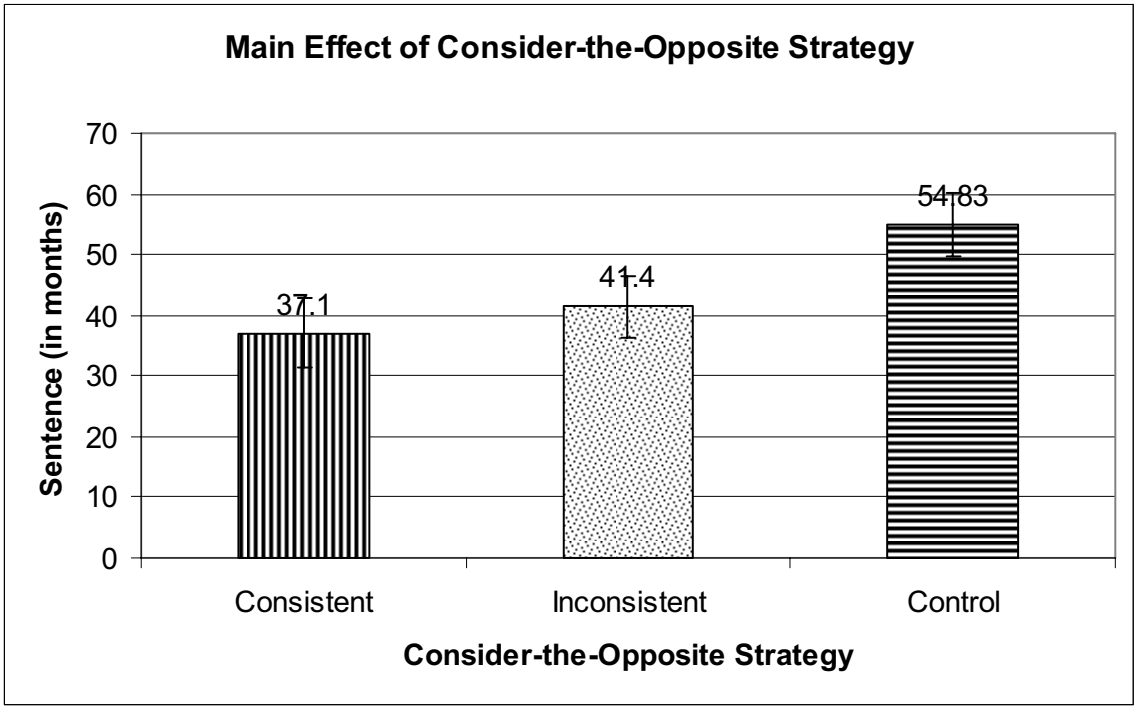

Figure 3. Main effect of consider-the-opposite strategy on sentence length under a Texas State range.

In addition, there was a significant two-way interaction between sentence anchor and consider-the-opposite strategy, F (2, 96) = 3.92, p =.023, η^2 = .076. A posteriori analyses using the Least Significant Differences method indicated that participants who were asked to sentence the offender after being given a high sentence anchor but were not asked to give reasons to support or not support the sentence anchor gave more punitive sentences (M = 48.58, SE = 7.99) than participants in any other condition (see Figure 3).

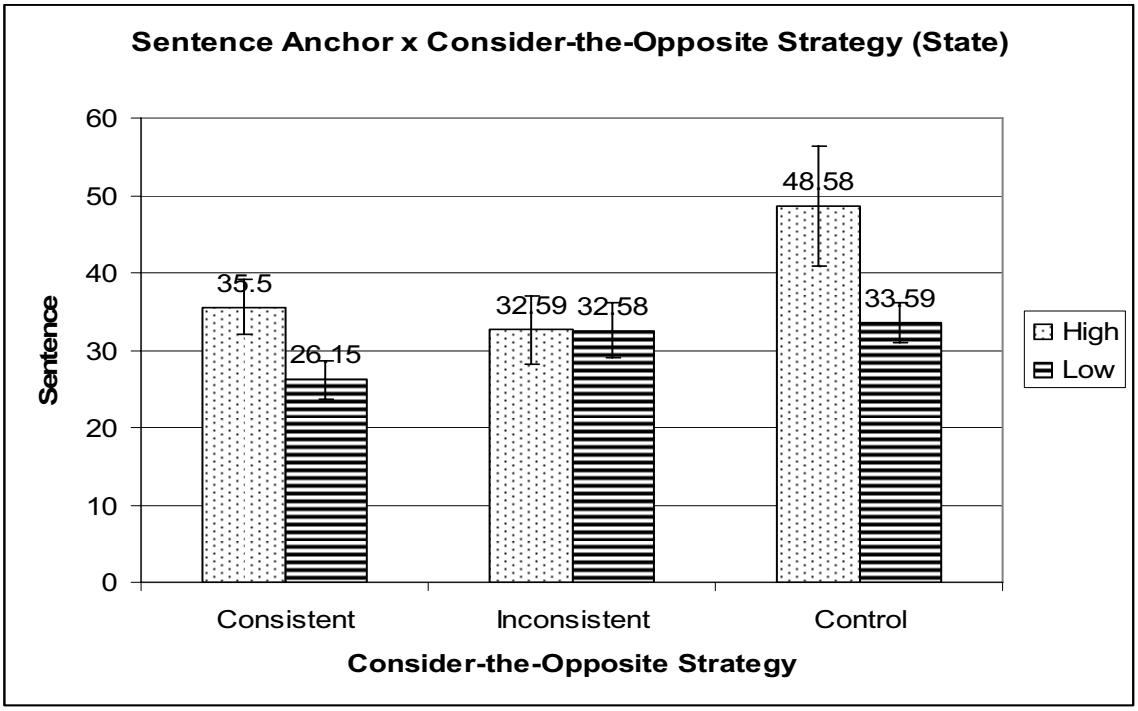

Figure 4. Interaction between sentence anchor and consider-the-opposite strategy on sentence length under a Texas State range.

Effects of Number of Reasons Provided

Based on the Selective Accessibility Model (Mussweiler & Strack, 1999), it was predicted that the number of consistent or inconsistent reasons participants listed would have an effect on their sentence. More specifically, it was predicted as participants listed an increasing amount of reasons that were consistent with their sentence anchor, their sentence would be more punitive than participants listing fewer consistent reasons. As participants listed a greater amount of reasons inconsistent with their sentence anchor, it was predicted that their sentence would be less punitive than participants listing fewer inconsistent reasons. It was expected that participants who were not asked to list reasons to support or refute their sentence anchor would fall somewhere in between those listing consistent and inconsistent reasons. To test these hypotheses,

oneway ANOVA's were performed for the number of reasons participants listed on sentence. The number of consistent reasons listed and sentence were not related ($p > .05$). In addition, the number of inconsistent reasons listed and sentence were not related ($p > .05$). However, a linear combination of the number of reasons on sentence was significant, F (1, 207) = 5.66, p = .018. As participants listed more reasons in support or in refute of their sentence anchor, they gave less punitive sentences, r (213) = -.163, p = .009. Thus, the Selective Accessibility model was only partially supported in this study.

Debiasing Effects of Consider-the-Opposite Strategy

Based on the Consider-the-Opposite strategy (Lord et al., 1984), it was predicted that participants who were asked to list reasons that were inconsistent with their sentence anchor would produce unbiased sentences regardless of the sentence range or sentence anchor provided. More specifically, it was predicted that the greater the number of inconsistent reasons they listed, the less biased their sentence would be. To test this hypothesis, a bivariate correlation was performed between the number of inconsistent reasons the participants listed and their sentence. Results indicated that the correlation was non-significant, r (70) = -.042, p = .366. However, another bivariate correlation was performed between the number of consistent and inconsistent reasons the participants listed and their sentence. Results indicated that the correlation was significant, r (213) = -.163, p = .009. Participants asked to generate reasons, whether anchor-consistent or anchor-inconsistent, gave less punitive sentences than participants who were not asked to generate reasons F (1, 207) = 5.66, p = .018. Thus, the Consider-the-Opposite strategy was partially supported in this study.

Discussion

Summary of Primary Findings

Sentencing Disparities

As predicted, participants who sentenced under the Texas State sentence range gave more punitive sentences than participants who sentenced under the Federal sentence range. This result replicates previous research findings (Wildermuth & Hosch, 2006), which indicated that participants sentencing offenders for aggravated robbery and aggravated assault under the Texas State range gave more punitive sentences than participants sentencing offenders under a Federal range. Thus, the vast range provided when sentencing under a Texas State range does influence sentence when compared with the smaller range provided under a Federal range.

Anchoring Effects. As predicted, when participants viewed the high end of the Texas State range (i.e., the 85th percentile/ high anchor) they gave more punitive sentences than participants who viewed the low end of the Texas State range (i.e., the 15th percentile/ low anchor). However, there were no differences in sentences given between participants who were exposed to the high and low ends of the Federal sentence range. The most likely explanation for this was due to the small difference in the distribution of sentences in the Federal range for a burglary of habitation.

Recall previously that there were four theoretical accounts of anchoring of why anchoring occurs: (1) insufficient adjustment from a starting point, (2) conversational influences, (3) numerical priming, and (4) mechanisms of selective accessibility.

Tversky and Kahneman (1974) describe anchoring in terms of insufficient adjustment from a starting point. They argue that "[…] different starting points yield different estimates, which are biased toward the initial value" (Tversky & Kahneman, 1974, p.1129). This adjustment may be

insufficient because it terminates at the boundary of a region of acceptable values for the estimate (Epley & Gilovich, 2001). However, insufficient adjustment to the boundary of a distribution of acceptable values is only possible if the anchor value falls outside this distribution in that it constitutes an unacceptable value itself. This may be the case because the anchor value is absurdly extreme or because it is known to be wrong. Therefore, insufficient adjustment does not explain the anchoring effects found in this study because sentence anchors were taken from the particular Texas State or Federal range for a burglary of habitation.

A second account attributes anchoring to conversational inferences. According to this reasoning, participants, who expect the experimenter to be maximally informative (Schwartz, 1994) in asking his or her questions, may assume that the provided anchor value is close to the actual value and consequently position their estimate in its vicinity. Such conversational inferences may well underlie the effects of considering anchor values that are of clear relevance for the estimate to be made (e.g., Northcraft & Neale, 1987). However, in this study participants were told that the sentence anchors were randomly generated by a computer program. Therefore, conversational inferences do not explain the anchoring effects found in this study.

A third theoretical account assumes that anchoring effects are rather superficial and purely numeric in nature (Jacowitz & Kahneman, 1995; Wilson et al., 1996; Wong & Kwong, 2000). From the numeric-priming perspective, the sole determinant of anchoring effects is the anchor value itself, regardless of its context, the target with which it is compared, or the judgmental operations in which it is involved. However, in this study results indicated that there were different effects of the anchors depending upon if individuals were asked to generate information or not. If anchoring effects were evoked by the anchor value itself, then identical

effects should result irrespective of the semantic content with which the anchor is associated. Therefore, numeric priming did not account for the anchoring effects in this study.

This leaves only the Selective Accessibility Model as an explanation of the anchoring effects that occurred in this study. As indicated in the next section, the Selective Accessibility Model was partially supported in the study.

Selective Accessibility Model. The Selective Accessibility Model was partially supported in that generating information did reduce reducing sentence punitiveness, compared to those who were not asked to generate any information. This was indicated by the significant linear effect of number of reasons on sentences. In addition, it was not just when information inconsistent with the sentence anchor was generated, but when any information (i.e., consistent and inconsistent with the sentence anchor) was generated. Merely thinking about the offender and the criminal act was enough to reduce sentences, compared with participants who were not asked to generate any reasons in support or refute of their sentence anchor.

Recall that the Selective Accessibility Model takes into account that anchoring happens in situations where the consequences of comparing a given target to a numeric standard are assessed with a subsequent absolute judgment of this target (Mussweiler, 2003). As in any judgment, absolute target judgments reflect the implications of accessible target knowledge. The basic assumption of the SA model is that anchoring is in essence a knowledge accessibility effect, and therefore is semantic in nature (Mussweiler & Strack, 1999). The model predicts that comparing the judgmental target to the anchor value changes the accessibility of knowledge about the target. Specifically, the accessibility of an anchor-consistent subset of target knowledge is selectively increased. It is assumed that judges compare the target with the anchor by testing the possibility that the target's value is equal to the anchor value. However, it is possible to

manipulate this subset of target knowledge, not only by manipulating the sentence anchor, but also by asking individuals to Consider-the-Opposite, that is, to generate information that is inconsistent with the sentence anchor.

Consider-the-Opposite Strategy. Previous research has been demonstrated that "considering the opposite" (Lord et al., 1984), or taking evidence that is inconsistent with one's initial beliefs into account, is an effective strategy to improve human judgment in a variety of domains because overconfidence results from a neglect of evidence that contradicts the chosen alternative so that making this evidence more salient reduces the effect (Koriat et al., 1980). The Consider-the-Opposite strategy was partially supported in that the more reasons participants listed in support or refute of their sentence anchor, the less punitive sentences they gave. This suggests that generating any type of information about the offender and the criminal act is sufficient to anchoring effects (thereby reducing sentences).

However, the Consider-the-Opposite strategy was not supported in that there were no differences in sentences between participants asked to list reasons in refutation of their sentence anchor and participants not asked to list reasons. As indicated by posteriori analyses, the difference was between participants asked to list reasons in support of their sentence anchor and participants not asked to list reasons. That is, those who listed no reasons were more punitive than those who listed reasons in support of their sentence anchor. Furthermore, the significant two-way interaction between sentence anchor and consider-the-opposite strategy revealed that it was only when the sentence anchor was high and participants were not asked to list reasons that they gave more punitive sentences than participants in any other condition. So, when participants were asked to list reasons to support the sentence anchor and the sentence anchor was high, considering this knowledge actually reduced the effect of the anchor. The most likely

explanation for this finding is that the reasons participants generated in support of the anchor were not severe enough to warrant such a high sentence, as was likely to be the case with the type of crime that was presented. Therefore, in comparison with those participants who saw the high anchor but were not asked to list reasons, their sentences were less punitive. However, high sentence anchor aside, generating knowledge in support or refute of the sentence anchor did appear to reduce sentence punitiveness overall.

Concluding Remarks

Future Directions

There are some important issues that subsequent research in this area should improve upon to obtain further information about the findings. In an attempt to keep the sample in this study as similar to the population that would be making sentencing decisions, any participants who were not jury eligible, or who did not view the case as being realistic were excluded from the analyses. Due to these exclusions, power was reduced. Furthermore, previous research found small effect sizes for sentencing and large effect sizes for anchoring. Based on this research, the sample size in this study was determined by predicting a moderate effect size for interactions. Future research should presume a small effect size when investigating anchoring effects in relation to sentencing.

Future researchers may also want to consider comparing different types of crime (e.g., 1st degree, 2nd degree, 3rd degree felonies, misdemeanors, criminal and civil cases, etc.) in conjunction with sentence anchors under the Selective Accessibility Model. Previous research (Wildermuth & McClure, 2004) has indicated that the type of crime matters. Specifically, the offenders actions during the commission of the crime and individuals' expectations about the crime violence associated with crime interact to create sentencing disparities.

Finally, future research should replicate and extend this research by using a more heterogeneous sample. The majority of participants in this study were undergraduates of Latino/ Hispanic ethnicity. By replicating this research with a broader variety of people with varying life experiences, other factors may be revealed.

Implications for the Criminal Justice System

In the criminal justice system, the impact of narrower sentences or new guidelines may be taken to state legislatures to reduce the range of sentences available to jurors and judges so that effectively equivalent offenses are treated equally. One criticism in doing this that should be addressed is that the makeup of the sentencing worksheets used by judges to arrive at a particular sentence is unduly punitive. Specifically, it appears as though more attention is paid to aggravating factors than to mitigating factors (Ruback & Wroblewski, 2001), which may lead to more punitive sentences due to increased reliance on anchoring as explained by the SA model. Before we are able to provide any information to state legislatures on juror sentencing, or have any influence on future state guideline systems, serious consideration should be given to the weight and inclusion of both aggravating and mitigating circumstances.

In the criminal justice system decision makers may believe that they are making unbiased sentencing decisions, but they may be unaware of how anchoring effects and knowledge accessibility effects impact their decisions. When decision makers are given a recommended sentence by a probation officer or a prosecutor, these sentences may be used as anchors, reinforcing this number without full consideration of the crime and the defendant's actions. In addition, in dual state-federal jurisdiction cases much of the power is given to federal prosecutors, which has created a state-federal discrepancy that is becoming an increasing problem in the Federal circuit (Sun Beale, 1995). If we can allow decision makers to consider the

facts of the case when deciding upon a sentence, without introducing sentence recommendations that may lead to anchoring effects, we may see less biased sentencing decisions and more equivalent sentences across similarly situated offenders convicted of similar crime.

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Appendix A

Demographic Information

1. Gender:

Male

Female

2. Age:_____

3. Year in School:

Freshman

Sophomore

Junior

Senior

4. Ethnicity:

African American

Asian

Caucasian\Non-Hispanic White

Hispanic\Latino

Other

5. Political Orientation

Very Conservative

Somewhat Conservative

Somewhat Liberal

Very Liberal

Unsure

6. Have you ever served on a jury before?

Yes No

7. Are you jury eligible?

Yes No

<u>Note:</u> To be considered jury eligible you must:

- **Be at least 18 years old**

<u>AND</u>

- **Have a valid driver's license <u>OR</u> Be a registered voter**

Appendix B

Burglary of Habitation Crime Scenario

IN THE DISTRICT COURT OF EL PASO, TEXAS
THREE HUNDRED THIRTY-FOURTH JUDICIAL DISTRICT

THE STATE OF TEXAS

V.

MARCO ANTONIO MEDRANO

Prosecutor: Ladies and gentlemen of the jury at this point in time the State is going to explain this case to you.

This is about a burglary of a habitation. The victim in this case is Ms. Mary Martin. Ms. Martin is going to testify to you today and the State expects to show that she was returning home the evening of January 10th about 8:45 in the evening when she observed a blue Ford Taurus leaving her home. Shortly thereafter she entered her home and discovered that the house had been broken into. She was missing a watch and a quantity in cash.

Ladies and gentlemen, the State also expects to bring Officer Bolick here to testify: to tell you about his arrest of Mark Medrano; to tell you about the evidence he collected at the scene where Mark Medrano was arrested.

Ladies and gentlemen after you hear the evidence presented by the State, the State is confident you will find the Mark Medrano guilty of burglary of a habitation. Thank you very much.

Judge: The Defense may make its opening statement at this time.

Defense Attorney: May it please the Court, Mr. Arredondo {Prosecutor}, Mr. Medrano, and ladies and gentlemen of the jury.

I anticipate that in this trial you will hear from several witnesses. I anticipate that you will hear from Mary Martin, this is the homeowner. I anticipate that you will hear from

Officer Howard Bolick, the investigating officer, and I anticipate their testimony to be totally inconclusive and full of reasonable doubt. I expect that you'll find many inconsistencies in what these State witnesses have to tell you. And based on those inconsistencies; I think some very crucial inconsistencies; I'm going to ask that you return a finding of not guilty on behalf of Mr. Medrano. Thank you.

(Judge addresses Prosecutor.)
Judge: If you would call your first witness please.

(Prosecutor addresses Judge.)
Prosecutor: Mary Martin to the stand.

(Judge addresses witness.)
Judge: You may approach the stand.

(Witness takes the stand. Judge addresses Prosecutor.)
Judge: Council you may proceed with the direct examination.

Prosecutor: Thank you, your Honor.

Ma'am would you give us your full name please?

Mary Martin: Mary Martin.

Prosecutor: Let me take you back to January 10th. Did something unusual happen that day to you?

Mary Martin: Yes, it did; that evening it did.

Prosecutor: What happened that evening?

Mary Martin: Well I came home and I noticed the door to my house was jimmied open.

Prosecutor: Ok. About what time was it that night?

Mary Martin: It was about 8:45 p.m.

Prosecutor: How do you know that was the time?

Mary Martin: Because I wanted to be home by 9 p.m., for sure inside the house, ready to watch a TV program.

Prosecutor: Ok. Where were you that evening?

Mary Martin: At a friend of mine's having Sunday supper.

Prosecutor: What is the name of your friend?

Mary Martin: Nancy Coolidge.

Prosecutor: Did you see anybody in your home?

Mary Martin: No I did not.

Prosecutor: Did you see anybody leaving your home?

Mary Martin: Yes I did. Well I saw a car speeding away from my driveway, and there was someone in the car driving away.

Prosecutor: Just one person in the car?

Mary Martin: To the best of my knowledge, yes. There was one person in the car.

Prosecutor: What kind of car?

Mary Martin: Yes; it was a blue 4-door sedan, probably a Sable, and I thought it was maybe 8-10 years old, and yes I noticed it had a little gray smudge or some kind of smudge on the right front fender.

Prosecutor: Ok. You said it was just one person in the car?

Mary Martin: Yes; I think it was a man. I am not sure.

Prosecutor: Did you get a good look at this person?

Mary Martin: No, he was leaving too fast for me to get a good look.

Prosecutor: Did you get a look at the license plate?

Mary Martin: Well I did see part of it, it was like D as in “dog”, and it was D-D-C or D-D-X

Prosecutor: Ok. When this vehicle left the area what did you do?

Mary Martin: Well I got out of my car and opened the door, and I looked at the jimmied door, and I went to the other part of the house and went in.
And what else did you want to know?

Prosecutor: Let me ask you about the jimmied door. What is it that you would describe as being jimmied?

Mary Martin: It was like pried open I think that would be it.

Prosecutor: That was your front door?

Mary Martin: Yes.

Prosecutor: Had you locked that front door that day?

Mary Martin: Yes.

Prosecutor: Who else lives in the house with you?

Mary Martin: No one.

Prosecutor: How long have you been living in that home?

Mary Martin: 15 years.

Prosecutor: Have you always lived there alone?

Mary Martin: No I have not.

Prosecutor: Who else lived with you?

Mary Martin: My husband.

Prosecutor: Where is your husband right now?

Mary Martin: He's no longer with us, he's dead.

Prosecutor: When did he pass away?

Mary Martin: Five years ago.

Prosecutor: So you have been living alone for five years?

Mary Martin: Yes, I've been a widow for five years and living alone.

Prosecutor: When you entered the house, did you see if anything was taken?

Mary Martin: Did I see anything taken? Yes. I noticed some drawers that were askew, and things were falling out of them, I looked at the skewed drawers. So I looked at drawers where I had a box… Is that what you mean?

Prosecutor: Yes ma'am.

Mary Martin: And in one box there had been 252 dollars. I knew that was the amount

because I had that earmarked to go to the bank on Monday, which was the next day. And there was another box which had some silver cufflinks, they were still there, and then there was my husband's gold watch and it was missing; a watch and the money.

Prosecutor: Ok. Did you call the police that evening?

Mary Martin: Yes.

Prosecutor: And did they respond?

Mary Martin: Yes, they did, very quickly. They came in 20 minutes; they were fairly near to me.

Prosecutor: Do you know the officer's name?

Mary Martin: No I don't. I know what he looks like, I could identify him, but I forget the name.

Prosecutor: Did you give the officer a description of the car you saw that night?

Mary Martin: Yes I did.

Prosecutor: And your description of the partial license plate that you remember?

Mary Martin: Yes I did.

Prosecutor: Did you give a description of what was missing that night?

Mary Martin: Yes, of course.

(Prosecutor addresses Judge)
Prosecutor: Your Honor may I approach the Mary Martin?

Judge: Yes you may.

(Prosecutor shows Mary Martin a gold watch.)
Prosecutor: I'm handing you a watch. Take a look at this please. Do you recognize this watch?

Mary Martin: It looks exactly like my husband's watch, I can't be sure it is that watch, but it looks exactly like it.

Prosecutor: Ok. Did you give anybody permission to enter your home that night?

Mary Martin: Oh no.

Prosecutor: Did you give anybody permission to take any money or that watch from you?

Mary Martin: No, of course not.

(Prosecutor addresses Judge)
Prosecutor: At this time your Honor, the State is going to pass the witness Mary Martin.

(Judge addresses Defense Attorney)
Judge: Cross examination please.

Defense Attorney: Thank you Judge.

Mrs. Martin I am the attorney representing Mr. Medrano, and that is the young man who is seated here and who's on trial for this matter. Do you understand that it is crucial for you to be completely candid and truthful in your responses ma'am?

Mary Martin: Yes.

Defense Attorney: About this vehicle you've described, how far were you to the vehicle when you first saw it, approximately?

Mary Martin: How far was the vehicle when I first saw it?

Defense Attorney: Yes ma'am. What distance were you from the vehicle?

Mary Martin: Well I'm not very good at estimating that, but about 20 to 25 feet, maybe from here to where the jury box is.

Defense Attorney: Could it have been about as much as maybe a half of a regular block, a neighborhood block, could it have been that distance ma'am?

Mary Martin: Well that depends on block; you mean where I live?

Defense Attorney: Yes ma'am.

Mary Martin: A little closer.

Defense Attorney: What type of lighting exists out there on the street you live on?

Mary Martin: There is a street light near the end of the block and then a couple of the neighbors have lights that light up their walkway, and the entrance to their driveways and a light that lights up one of the walkways to our house. And a light that goes on and off when people go into the drive and out.

Defense Attorney: Ok. Ma'am isn't it true that you did tell the officers and you testified

here in front of this jury that you never saw the person inside the car?

Mary Martin: Well I saw a person; I don't know what you mean by that.

Defense Attorney: You don't remember the face of the person inside the car do you?

Mary Martin: No, that's correct.

Defense Attorney: You don't know if this person was a male or a female do you?

Mary Martin: That's difficult to tell these days because some have men have long hair and some women have short hair, but no I couldn't tell.

Defense Attorney: Well isn't it true that you don't know, you never described any distinctive clothing or anything distinctive about the person that you say you saw driving that vehicle?

Mary Martin: No, I was paying more attention to the car.

Defense Attorney: Okay and from a distance you're describing, how many feet would you say you were from this vehicle?

Mary Martin: Like I said before, maybe 20 feet, maybe less, but I could see the car.

Defense Attorney: And from that distance you're saying you could see clearly the color of the vehicle?

Mary Martin: I could see the color and I could see part of the license plate because my brother and I used to play games all the time about looking at license plates and cars so I'm used to doing that still, its just a habit.

Defense Attorney: And you say you saw the letters either D-D-C or D-D-X is that right?

Mary Martin: Yes I did.

Defense Attorney: May I approach the witness your Honor?

Judge: Yes, you may.

(Defense Attorney shows Mary Martin a watch.)
Defense Attorney: This is the watch that you describe as looking a lot like your late husband's watch is that right?

Mary Martin: That's correct.

Defense Attorney: How long were you married?

Mary Martin: We were married for about 20 years.

Defense Attorney: Ok. But you've told the ladies and gentlemen of this jury you weren't absolutely sure that this was one and the same watch isn't this true?

Mary Martin: What I said was that it looks exactly like the watch that he had and that he wore, but I can't be absolutely certain, there are no initials on the back and the only identification is that the watch looked exactly like this.

Defense Attorney: Then you would agree with me ma'am that this watch isn't a one of a kind watch, isn't that true?

Mary Martin: I don't know, I assume it isn't, but I'm not sure of that either.

Defense Attorney: Well, when your husband purchased this watch was it engraved or was there anything distinctive about his watch that would separate it from any other watch?

Mary Martin: I don't know because I don't know where he bought it, so I don't know if it's just one of a kind.

Defense Attorney: But you can tell you're not absolutely sure that this is your husband's watch, isn't that true Mrs. Martin?

Mary Martin: I just stated that because there are no initials on the back that this could be someone else's watch, but it looks exactly like his watch.

(Judge addresses Mary Martin)
Judge: Thank you ma'am you're excused.

(Judge addresses Prosecutor.)
Judge: You may call your next witness.

Prosecutor: Howard Bolick to the stand.

(Judge addresses Officer.)
Judge: You may approach the stand.

(Officer takes the stand. Judge addresses Prosecutor.)
Judge: Council you may proceed with the direct examination.

(Prosecutor addresses Judge.)
Prosecutor: Thank you, your Honor.

Officer can you give the ladies and gentlemen of the jury your name please?

Officer: My name is Howard Bolick.

Prosecutor: Who are you employed with?

Officer: By the police department.

Prosecutor: How long have you been so employed?

Officer: Eleven years.

Prosecutor: What were your duties on January 10th of this year?

Officer: Routing patrol on the northeast part of the city.

Prosecutor: Were you alone?

Officer: Yes I was.

Prosecutor: Were you in uniform?

Officer: Yes.

Prosecutor: In a marked vehicle?

Officer: Yes.

Prosecutor: A vehicle with lights on top?

Officer: That is correct.

Prosecutor: Do you recall responding to a burglary call that evening?

Officer: Yes, at about 8:55 that evening I was dispatched to 9625 Goldwing.

Prosecutor: Did you obtain a report from Ms. Martin?

Officer: Yes, in reference to a burglary of a habitation.

Prosecutor: Did she give a description of a particular person?

Officer: She was unable to give a suspect description at that time as far as the person.

Prosecutor: Did you get any kind of description?

Officer: She did advise me that she had seen…

(Defense Attorney intercedes with an objection. Defense Attorney addresses Judge.)
Defense Attorney: I'm going to object on hearsay that this officer may have heard.

(Judge addresses Officer.)
Judge: You may state whether she gave you a description or if she did not give you a description.

Officer: Ok your Honor.

(Prosecutor continues.)
Prosecutor: Did she give any other description?

Officer: Yes, she did.

Prosecutor: Was there an indication that things had been taken from the home?

Officer: Yes.

Prosecutor: Did you get a list of those things?

Officer: Yes.

Prosecutor: Did you make a subsequent arrest for this offense?

Officer: Yes, it was about 45 minutes later.

Prosecutor: Did you pull someone over? How did that go about?

Officer: After leaving her house, I was patrolling the area. About 45 minutes later I observed a blue Ford Taurus with Texas license DDQ-384 as I drove by I observed there was a single male inside the vehicle.

Prosecutor: What first drew your attention to this vehicle?

Officer: As I went by the vehicle, I observed there was one individual seated at the driver's seat as my patrol car went by he ducked down as if trying to avoid me.

Prosecutor: Did the description of the vehicle you just gave match the description given by Ms. Martin?

Officer: Somewhat, it was a rough description.

Prosecutor: Ok. What did you do when you stopped?

Officer: When I stopped, I approached the vehicle after observing him duck down. I approached from the rear of the vehicle; as I did so, I observed him with a 16 ounce can of Budweiser, which he was drinking at the time.

Prosecutor: He was drinking, you observed him drinking?

Officer: Yes, I did.

Prosecutor: What did you do when you saw this?

Officer: At that time I shone my light on the car and ordered him out of the vehicle for my own safety.

Prosecutor: At this point in time did you arrest the defendant?

Officer: No, not at that time.

Prosecutor: Ok, but he had violated the law?

Officer: Yes sir, it was a municipal violation.

Prosecutor: What was the demeanor of the defendant?

Officer: It was my opinion that the defendant was intoxicated. I noticed that he had slurred speech, bloodshot eyes, some difficulty standing and staggered somewhat as he walked towards me.

Prosecutor: Do you see the person which you stopped that evening here today?

Officer: Yes, at the Defense Attorney table.

Prosecutor: Let the record show that he has identified Mr. Medrano. At what point in time did you connect Mr. Medrano with the burglary at Ms. Martin's home?

Officer: Shortly after he stepped out of the vehicle, I realized the car did meet the description. And also because he was intoxicated and drinking in public at that time I placed him under arrest and continued the investigation believing he was involved in the burglary.

Prosecutor: Pursuant to this arrest, did you search Mr. Medrano's vehicle?

Officer: I asked for his permission and at that time he said, 'Sure, I ain't got nothing to hide.'

Prosecutor: Did you indeed go through the car?

Officer: Yes sir I did.

Prosecutor: Did you find anything unusual in that car.?

Officer: Yes sir in the front part of the car, I located three watches, one of them being the gold Bulova watch.

(Prosecutor addresses Judge.)
Prosecutor: May I approach the witness?

Judge: Yes you may.

(Prosecutor shows Officer three watches.)
Prosecutor: Sir, I am going to show you three watches, would you please take a good look at them? Sir do you recognize these watches from any place?

Officer: Yes, these are the watches I removed from the Mark Medrano's vehicle.

Prosecutor: How do you know these are the same ones that you recovered from the vehicle?

Officer: In accordant with department policy, they are all tagged with my initials, ID number, and case number on the back.

Prosecutor: Ok, so they all have your ID number to show that they're the same ones?

Officer: Yes.

(Prosecutor addresses Judge.)
Prosecutor: At this time the State moves to enter the watches into evidence.

(Judge addresses Defense Attorney.)
Judge: Any objections?

(Defense Attorney addresses Judge.)
Defense Attorney: Judge I will object on basis that there is not a proper predicate or chain of custody on these items and for those reasons we are objecting to their admission.

Judge: Overruled, the exhibits are admitted.

(Prosecutor addresses Officer.)
Prosecutor: So those are three watches that you recovered from the vehicle?

Officer: Yes sir, they are.

Prosecutor: Did you ever show those watches to Ms. Martin?

Officer: Yes sir I did, about 30 minutes after I made the stop of the defendant.

Prosecutor: Was there identification made?

Officer: Yes, sir there was.

Prosecutor: To which one?

Officer: It would be to the gold Bulova watch.

Prosecutor: What did Ms. Martin state?

Officer: She stated that it appeared to be her husband's watch, her late husband's watch.

Prosecutor: Did you find anything else in the vehicle?

Officer: Yes sir, when I looked in the trunk I noticed several tools, including a couple of screwdrivers, crowbars, and a small garden tool.

Prosecutor: How did you get into the trunk?

Officer: With the keys that the defendant provided

Prosecutor: The defendant provided you the keys?

(Prosecutor addresses Judge.)
Prosecutor: Your Honor may I approach the witness?

Judge: Yes, you may.

(Prosecutor addresses Officer.)
Prosecutor: Officer, please take a look at these tools. Do you recognize them from anyplace?

Officer: Yes sir.

Prosecutor: Where do you recognize them from?

Officer: These are the tools I removed from the defendant's vehicle.

Prosecutor: And they were located in the trunk of the vehicle?

Officer: Yes sir.

Prosecutor: How do you know these are the same tools that you located?

Officer: Again, they're tagged in accordance to our procedures.

Prosecutor: What kind of tools do we have here?

Officer: They are general tools; however they could also be used as burglary tools.

(Defense Attorney addresses Judge.)
Defense Attorney: Excuse me Judge, I'm going to object that the witness is speculating as to how these tools may or may not be used.

Judge: Predicate has not yet been laid for any knowledge. The objection is sustained at this time.

(Prosecutor addresses Officer.)
Prosecutor: When you searched the defendant was there any money found on him?

Officer: Yes sir, he had $270 in his pockets.

(Prosecutor addresses Judge.)
Prosecutor: Your Honor, the State passes the witness.

(Judge addresses Defense Attorney.)
Judge: Cross examination.

Defense Attorney: Thank you, Judge.

(Defense Attorney addresses Officer.)
Defense Attorney: Officer Bolick, you can't tell this jury who broke into Mary Martin's house can you?

Officer: No sir, I can't tell them exactly who.

Defense Attorney: Because you weren't present, you didn't see who did that, isn't that right?

Officer: Exactly.

Defense Attorney: You described arresting my client initially because he was parked alongside a roadway?

Officer: No sir, I arrested him because he was in violation of several municipal ordinances.

Defense Attorney: And that violation had to do with him consuming an alcoholic beverage isn't that right sir?

Officer: An open container in a public place and public intoxication.

Defense Attorney: Well sir, isn't it true that when you drove your patrol unit by, my client's vehicle was legally parked on the side of the road?

Officer: Yes sir it was.

Defense Attorney: There was no portion of my client's vehicle protruding onto that roadway or obstructing traffic in anyway or form, isn't that true?

Officer: That's correct.

Defense Attorney: The only reason that you stopped was because you saw my client inside the vehicle at that hour, isn't that true?

Officer: Yes sir at that hour and because I saw your client duck down as if trying to avoid me as I drove my marked unit past him.

Defense Attorney: Sir you retrieved some items from my client's vehicle, and these are exhibits in front of you, is that correct?

Officer: Yes, that is correct.

Defense Attorney: On these three watches, didn't my client explain to you where he got them from?

Officer: No sir, he never explained.

Defense Attorney: Do you recall him telling you that he won them in a poker game?

Officer: No sir, I don't.

Defense Attorney: Are you sure of that Officer?

Officer: Yes I am.

Defense Attorney: And these tools, is there anything unusual about these tools? A hammer, some pliers, screwdrivers, anything unusual about these tools?

Officer: No, they're general carpenter's tools in most circumstances.

Defense Attorney: Well isn't it true that many people carry these types of tools in their

vehicles, in their toolbox?

Officer: Yes sir it is.

Defense Attorney: It's certainly not illegal to carry these tools around is it?

Officer: No it's not.

Defense Attorney: And this money that my client had in his possession is there anything unusual about that money?

Officer: No sir.

Defense Attorney: In fact for a person that works and gets paid, it's not unusual for him to carry that sum of money is it?

Officer: No it's not.

Defense Attorney: It was your testimony that my client was intoxicated?

Officer: Yes sir.

Defense Attorney: Isn't it true that you don't have any type of testing to determine if he was intoxicated?

Officer: I didn't conduct a test but in 11 years I have dealt with several intoxicated persons.

Defense Attorney: Okay Officer, I'm just asking you a very simple question. Did you conduct a test of intoxication?

Officer: No sir I didn't conduct a sobriety test.

Defense Attorney: And sir you testified that my client, when you asked him if you could search his car, he didn't have any problem with that did he sir?

Officer: No sir he didn't.

Defense Attorney: In fact, he said 'Go on right ahead. I've got nothing to hide.' Isn't that true?

Officer: That's correct.

Defense Attorney: Did he appear sincere when he told you that?

Officer: Yes.

Defense Attorney: In fact, Mr. Medrano was cooperative and polite with you, isn't that true?

Officer: Yes.

Defense Attorney: Again, from your personal knowledge, you don't know who broke into Ms. Martin's house, do you?

Officer: No, I don't.

Defense Attorney: You didn't see my client do it, did you?

Officer: No, I didn't see anybody do it.

Defense Attorney: Okay. Thank you Sir.

(Judge addresses Officer.)
Judge: Alright, thank you, Sir. You're excused.

(Judge addresses Defense Attorney.)
Judge: You may call your first witness Council.

Defense Attorney: Thank you, Judge. I will call Mark Medrano.

(Judge addresses Mark Medrano.)
Judge: Sir, if you would approach the witness stand.

(Defense Attorney addresses Mark Medrano.)
Defense Attorney: How are you doing Mr. Medrano?

Mark Medrano: Pretty good.

Defense Attorney: Would you please state your full name for the ladies and gentlemen of this jury?

Mark Medrano: Yes. Mark Medrano.

Defense Attorney: And where do you live?

Mark Medrano: I live on 100 Glenn Oaks.

Defense Attorney: How long have you lived at 100 Glenn Oaks?

Mark Medrano: About five years.

Defense Attorney: What do you do for a living Mr. Medrano?

Mark Medrano: I work in construction.

Defense Attorney: And you have been working in construction for how many years?

Mark Medrano: Three.

Defense Attorney: Are you married?

Mark Medrano: No.

Defense Attorney: Mark I need to take you back to January 10th. Do you remember that day?

Mark Medrano: Yes.

Defense Attorney: And why is it that this day is so memorable?

Mark Medrano: I was arrested that day.

Defense Attorney: That's a pretty memorable event isn't it sir? And going back to that day, why were you arrested?

Mark Medrano: I don't know.

Defense Attorney: Let's go back to the day of this arrest. Can you tell the ladies and gentlemen of this jury where you were at?

Mark Medrano: I was at my girlfriend's house.

Defense Attorney: What is your girlfriend's name?

Mark Medrano: It's Rosa Garcia.

Defense Attorney: Where is her house located?

Mark Medrano: She lives on Skylark

Defense Attorney: What time did you arrive at Rosa's house?

Mark Medrano: It was around 6 o'clock.

Defense Attorney: How long did you stay there at your girlfriend's house that evening?

Mark Medrano: Until around10:00 or 10:15.

Defense Attorney: Now, Mark, if you would be kind enough to tell the ladies and gentlemen of this jury what is it you did there at your girlfriend's house that evening.

Mark Medrano: We had dinner and watched television for a while.

Defense Attorney: Do you remember what you had for dinner that night?

Mark Medrano: Yes, we had barbeque ribs, potato salad, and corn.

Defense Attorney: Pretty full dinner?

Mark Medrano: Yes.

Defense Attorney: After leaving, where did you go?

Mark Medrano: I was on my way home.

Defense Attorney: Were you driving?

Mark Medrano: Yes.

Defense Attorney: What type of vehicle do you drive?

Mark Medrano: It's an 89 Ford Taurus.

Defense Attorney: What color is it?

Mark Medrano: It's blue.

Defense Attorney: Did you drive all the way home?

Mark Medrano: No, I was feeling a little tired so I pulled over to get some rest.

Defense Attorney: Where did you pull over?

Mark Medrano: Just about halfway to my home.

Defense Attorney: What happened then, Mr. Medrano?

Mark Medrano: The police officers arrived and I was arrested.

Defense Attorney: Why did they arrest you?

Mark Medrano: They didn't tell me.

Defense Attorney: They didn't tell you why they were arresting you?

Mark Medrano: No.

Defense Attorney: After they arrested you what happened then?

Mark Medrano: They took me to jail.

Defense Attorney: Mr. Medrano, you know why you're here this day, don't you?

Mark Medrano: Yes.

Defense Attorney: You know you're accused of breaking into a lady's house, Mary Martin's house, you know that don't you?

Mark Medrano: Yes.

Defense Attorney: Did you break into that house?

Mark Medrano: No I didn't.

Defense Attorney: When they searched this vehicle, were there any items that were retrieved from your vehicle?

Mark Medrano: Yes, they pulled out some stuff.

(Defense Attorney addresses Judge.)
Defense Attorney: Judge, may I approach the witness?

Judge: Yes you may.

(Defense Attorney shows watches to Mark Medrano.)
Defense Attorney: Mr. Medrano I am now showing you items that have been previously admitted into evidence. I'm going to ask you, as to this first set of items, do you recognize those?

Mark Medrano: Yes.

Defense Attorney: What are they?

Mark Medrano: These are my watches.

Defense Attorney: Were these watches retrieved from your vehicle?

Mark Medrano: Yes.

Defense Attorney: The other items; that money?

Mark Medrano: Yes.

Defense Attorney: Is that your money sir?

Mark Medrano: Yes.

(Defense Attorney addresses Judge.)
Defense Attorney: I believe that's all that I have for Mr. Medrano at this time. Pass the witness.

(Judge addresses Prosecutor.)
Judge: Cross examination.

Prosecutor: Mr. Medrano I'm going to ask you some questions please let me know if you don't understand so I can rephrase them. Is that okay with you?

Mark Medrano: Yes.

Prosecutor: You state you're a construction worker.

Mark Medrano: Yes.

Prosecutor: Who do you work for?

Mark Medrano: Miller Construction.

Prosecutor: Let me take you back to January 10th. You said that you were visiting your girlfriend that night.

Mark Medrano: Yes.

Prosecutor: How did you get to your girlfriend's house?

Mark Medrano: I drove there.

Prosecutor: And you drove in your blue Ford Taurus?

Mark Medrano: Yes.

Prosecutor: Is this the same car with a rust spot on the right front side of the car?

Mark Medrano: Yes.

Prosecutor: What is the license plate of your car?

Mark Medrano: D-D-Q 3-8-4.

Prosecutor: You state that you had dinner with your girlfriend am I correct?

Mark Medrano: Yes.

Prosecutor: What did you have to drink during dinner?

Mark Medrano: I had a couple of beers.

Prosecutor: A couple of beers?

Mark Medrano: Yes.

Prosecutor: Could it have been more?

Mark Medrano: No, it was just two.

Prosecutor: Are you sure?

Mark Medrano: Yes.

Prosecutor: What did you all do after dinner?

Mark Medrano: We watched some TV then.

Prosecutor: Some TV?

Mark Medrano: Yes.

Prosecutor: And did you drink then?

Mark Medrano: Yes, I had about three beers then.

Prosecutor: Are you sure it was just three?

Mark Medrano: Yes.

Prosecutor: Could it have been more?

Mark Medrano: No.

Prosecutor: And then you stated that you left at 10:00-10:15 am I right?

Mark Medrano: Yes.

Prosecutor: How do you know that was the time?

Mark Medrano: It was the same time that the show ended.

Prosecutor: What show are you talking about?

Mark Medrano: Some Sylvester Stallone movie.

Prosecutor: Do you know which one?

Mark Medrano: I can't recall.

Prosecutor: Ok. You left at 10:15, got in your car and started driving home, am I correct?

Mark Medrano: Yes.

Prosecutor: And you pulled over, right?

Mark Medrano: Yes.

Prosecutor: Do you know exactly where you pulled over?

Mark Medrano: I don't remember the name of the street.

Prosecutor: You don't remember the name of the street? This is a route that you take often am I correct?

Mark Medrano: Yes.

Prosecutor: To travel between you and your girlfriend's house, am I right?

Mark Medrano: Yes, that's correct

Prosecutor: But you don't remember the name of the street.

Mark Medrano: No.

Prosecutor: And you stated that you didn't even remember how long you were there before the police showed up, am I correct?

Mark Medrano: Yeah, I was trying to get some sleep.

Prosecutor: And the next thing you know a police officer was arresting you, am I correct?

Mark Medrano: Yes, that's correct.

Prosecutor: And you remember the facts correctly, am I correct?

Mark Medrano: Yes.

Prosecutor: But you had at least five beers that night am I right?

Mark Medrano: Yes.

Prosecutor: And isn't it true that they even found an empty can in your car?

Mark Medrano: Yes, that's correct.

Prosecutor: Would you say that you were intoxicated that night?

Mark Medrano: I was feeling a little tipsy but not intoxicated.

Prosecutor: You weren't intoxicated but you had five beers and drove?

Mark Medrano: That is correct.

Prosecutor: Sir, do you recognize those three watches in front of you?

Mark Medrano: Yes, they're mine.

Prosecutor: Those are the three watches that the officer retrieved from you car?

Mark Medrano: Yes.

Prosecutor: How is it that you got to have three watches in your possession?

Mark Medrano: I won them in a poker game the day before.

Prosecutor: The day before?

Mark Medrano: Yes.

Prosecutor: Whom were you in that poker game with?

Mark Medrano: Some people from work.

Prosecutor: And you won those watches as part of a bet?

Mark Medrano: Yes.

Prosecutor: From whom specifically did you win those watches from?

Mark Medrano: It was just some people there at the game.

Prosecutor: So you don't know exactly who?

Mark Medrano: I'm not sure about their names.

Prosecutor: Ok. Do you see the money right next to you?

Mark Medrano: Yes.

Prosecutor: That is $270. Am I correct?

(Mark Medrano counts money.)
Mark Medrano: Yes.

Prosecutor: That's the money that you had on you when the police arrested you?

Mark Medrano: Yes.

Prosecutor: How is it that you were in possession of so much money that night?

Mark Medrano: That was from my paycheck from the week before.

Prosecutor: From the week before. When was it that you got paid?

Mark Medrano: It was the Friday before that.

Prosecutor: Did you get paid $270?

Mark Medrano: No, I was paid $300.

Prosecutor: What did you use $30 for?

Mark Medrano: I just bought some food and stuff like that.

Prosecutor: Did you use any of that money for the gambling?

Mark Medrano: No.

(Defense Attorney objects. Defense Attorney addresses Judge.)
Defense Attorney: I'm going to object to the council's repeated questions about gambling. My client is not on trial for any gambling here and obviously this is an attempt by the prosecutor to try to inflame the passions of this jury.

Judge: The objection is overruled. You may proceed Council.

(Prosecutor addresses Mark Medrano.)
Prosecutor: Did you or did you not use any of that money when you gambled?

Mark Medrano: No, I didn't use this money.

Prosecutor: None at all?

Mark Medrano: No.

Prosecutor: So is it that you and your friends then just use watches to gamble with?

(Defense Attorney objects. Defense Attorney addresses Judge.)
Defense Attorney: Again, this is badgering the witness. I'm going object on basis that this question has been asked and answered. It is repetitive, not relevant, and it's badgering of my client.

(Judge addresses Mark Medrano.)
Judge: Overruled. You may proceed Council.

(Mark Medrano responds.)
Mark Medrano: Yes, that's correct.

(Prosecutor addresses Judge.)
Prosecutor: Your Honor may I approach the witness?

Judge: Yes you may.

(Prosecutor addresses Mark Medrano.)
Prosecutor: These are tools that were admitted into evidence earlier today. Would you take a good look at those?

Mark Medrano: Yes, these are my tools.

Prosecutor: Were those in your car the night you were arrested?

Mark Medrano: Yes.

Prosecutor: Why do you carry so many tools around?

Mark Medrano: Just in case my car breaks down so I can work on it.

Prosecutor: So those tools are for fixing your car?

Mark Medrano: Yes.

Prosecutor: Those aren't tools from work?

Mark Medrano: No.

Prosecutor: You wouldn't take tools from work, would you?

Mark Medrano: No, I wouldn't.

Prosecutor: Take a look at that. Is that a hammer?

Mark Medrano: Yes, yes it is.

Prosecutor: Can you pick that up?

(Mark Medrano picks up hammer.)

Prosecutor: How is it that you use that to fix your car?

Mark Medrano: Sometimes I have to hit the battery to get it going.

Prosecutor: Alright. Do you see that green tool, right in front of you?

Mark Medrano: Yes.

Prosecutor: Now, that's a gardening tool, isn't that correct?

Mark Medrano: Yes, I believe so.

Prosecutor: How is it that you use that to fix your car?

Mark Medrano: Well sometimes I have to poke around in there, in the engine a little so I use this one.

Prosecutor: Thank you. No further questions by the State.

(Judge addresses Mark Medrano.)
Judge: Thank you sir. You may take your seat at the council table.

END OF COURT TRANSCRIPT

Mr. Medrano was found guilty of Burglary of Habitation on June 1st, 2007.

After Mr. Medrano was arrested, police records revealed a criminal history. Mr. Medrano was previously convicted of forgery of a check. Assume you were a member of this jury and have convicted the defendant, Mr. Medrano. We are interested in your decisions about the criminal activity and the defendant.

Appendix C

Consistent/ Inconsistent Conditions

(CRIME SCENARIO)

The sentence for Mark Medrano is (anchor) years in prison.

This sentence was randomly generated by the computer.

1. Do you believe this sentence is too high or too low?

_____Too High _____ Too Low _____ Just Right

2. What would you say argues for/against this sentence (List as many reasons as possible. Must list at least 1 reason to continue).

3. What do you think is the appropriate sentence for this crime? _____

4. How certain/confident are you of your sentencing decision?

1----------2----------3----------4----------5----------6----------7
Very Uncertain Very Certain

5. Does your recommended sentence fall between _____ sentence range?
_____ yes _____ no

6. If you had to change your sentence to fit within this range, what would it be? _____

7. How certain/confident are you of your sentencing decision?

1----------2----------3----------4----------5----------6----------7
Very Uncertain Very Certain

Appendix D

No Consider The Opposite Strategy Condition (Control)

(CRIME SCENARIO)

The sentence for Mark Medrano is (anchor) years in prison.

This sentence was randomly generated by the computer.

1. Do you believe this sentence is too high or too low?

_____Too High _____ Too Low _____ Adequate

2. What do you think is the appropriate sentence for this crime? _____

3. How certain/confident are you of your sentencing decision?

1----------2----------3----------4----------5----------6----------7
Very Uncertain Very Certain

4. Does your recommended sentence fall between _____ sentence range?
_____ yes _____ no

6. If you had to change your sentence to fit within this range, what would it be? _____

7. How certain/confident are you of your sentencing decision?

1----------2----------3----------4----------5----------6----------7
Very Uncertain Very Certain

Appendix E

Final Questions

1. In your opinion, how realistic was this criminal case?

1	2	3	4	5	6	7
Completely Unrealistic						Completely Realistic

2. In your opinion, how typical is this type of criminal case?

1	2	3	4	5	6	7
Completely Atypical (Atypical = not typical)						Completely Typical

CURRICULUM VITA

Jessica L. Wildermuth was born in Davenport, Iowa. The daughter of Clyde Wildermuth and Crystal Reimers Wildermuth, she graduated from West High School, Davenport, Iowa, in the spring of 1998. She was awarded a bachelors degree in Psychology from Saint Ambrose University in the spring of 2002. Following graduation, she entered into a masters program in Experimental Psychology at Western Illinois University where she worked on a variety of sentencing research in the Laboratory for the Investigation of Psychology and Law. After receiving her master of science in the fall of 2004, she enrolled in the Legal Psychology doctorate program at the University of Texas at El Paso. While pursuing her doctorate, she worked as a program evaluator for the El Paso County Courthouse and the El Paso Mental Health and Mental Retardation Center. During her career at UTEP, she has been invited to present her research at various national conferences and has also attended numerous professional development workshops.