

# **Blind or Biased? Justitia's Susceptibility to Anchoring Effects in the Courtroom Based on Given Numerical Representations**

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*This article presents an integrative review of recent research on anchoring effects in the courtroom as one example for the strong impact of representation norms on sentencing decisions. Anchoring effects – the assimilation of numerical judgments to a given standard – have been demonstrated in many judgmental domains. Even sentencing decisions are subject to anchoring effects. In court proceedings this gives disproportionate weight to the prosecutor, whose sentencing demand serves as an anchor. The prosecution's sentencing demand even affects defense attorneys, who assimilate their own sentencing recommendation to it. This influence seems to remain outside of defense attorneys' awareness. Expertise does not attenuate this bias. Accordingly, defendants might be better off if defense attorneys could make their final case prior to the prosecutor's case.*

Sentencing demands that are presented in the courtroom may be seen as numerical representations of different perceptions of a given case. The prosecution expresses its view of the case via a concrete sentencing demand at the end of the trial process. Similarly, the defense summarizes its perspective by presenting a different sentencing recommendation. In the end, the judge decides on a specific sentence, which represents his final opinion about all the facts presented during the court proceedings. But to what extent do these numerical representations influence each other? In what way are the prosecutor's sentencing demand, the defense attorney's sentencing recommendation, and the judge's decision intertwined? In this article, the focus is especially on the question of whether these numerical representations influence judicial decision making in an irrational or unexpected way. Anchoring effects in the courtroom may serve as an example of such numerical sentencing biases.

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In general, judicial sentencing decisions should be guided by facts and not by chance. Disconcertingly, however, several studies have shown that sentencing decisions – even those made by experienced legal professionals – are influenced by demands that are blatantly determined at random (e.g., Englich, Mussweiler & Strack 2006). Therefore, one may wonder whether *Justitia* is indeed blind, or biased. In fact, there is ample reason to assume that *Justitia* may well be biased. The strongest hint in this direction comes from the research program on heuristics and biases by Tversky and Kahneman (see e.g., Kahneman, Slovic & Tversky 1982), who have repeatedly demonstrated that judgments under uncertainty are often made on the basis of a set of judgmental heuristics. These heuristics have the advantage of reducing uncertainty by simplifying the judgment at hand.

However, this advantage comes at a cost, in that the use of heuristics may lead to a systematic bias. One heuristic that has proved to be particularly influential when people make judgments about numeric quantities is the so-called anchoring heuristic. Because the most important judicial decisions are often based on numbers – such as the decision about the length of a sentence or the size of a damage award – it seems promising to study this heuristic and the biases that it may produce in the judicial context.

#### I. ANCHORING EFFECTS—UBIQUITOUS AND ROBUST

Before discussing the relevance of anchoring effects in legal settings, it is necessary to describe the phenomenon as it has been studied in psychological experiments. In what is probably the best-known demonstration of anchoring, Tversky and Kahneman (1974) asked research participants two consecutive questions about the percentage of African nations in the United Nations. In a first comparative question, participants indicated whether the percentage of African nations in the UN was higher or lower than an arbitrary number (the anchor) that had been determined by spinning a wheel of fortune (showing 65 percent or 10 percent). In a subsequent absolute anchoring question, participants then gave their best estimate of this percentage. Results showed that the absolute judgments were assimilated to the explicitly random anchor values. It is evident that judgments under uncertainty may be guided by salient numbers, even if these are determined at random (e.g., picked by a wheel of fortune).

Thus, anchoring effects can be understood as the assimilation of a numerical judgment towards the standard (the anchor) of a preceding comparison. Such assimilation effects have been demonstrated in a variety of judgmental domains and proved to be exceptionally robust. For example, estimates of the height of the Brandenburg Gate, the length of the Elbe River, or the age of Mahatma Gandhi (and many other judgments) were similarly influenced by numeric anchors (Strack & Mussweiler 1997; Wegener et al. 2001). The same was true for estimates of the value of a used car (Mussweiler,

Strack & Pfeiffer 2000) or prices of real estate (Northcraft & Neale 1987). Furthermore, anchoring effects did not depend on participants' motivation to provide an accurate judgment and were not reduced by forewarning (Wilson et al. 1996).

Although these laboratory findings are impressive, one might question whether they generalize to natural situations in which professionally trained decision makers decide on issues that have enormous and sometimes irrevocable consequences. Generating a sentence in a court of law may be such a situation. If the estimate of the number of African nations in the UN or the height of a famous building is biased by arbitrary numbers, this is probably not something participants care about too much. But if it could be shown that experienced judges are similarly influenced by numbers that are randomly determined, this would turn the experimental results into a finding with important implications for the judicial system. Specifically, it would cast doubt on the objectivity of legal decision making and call for potential institutional changes to counteract judicial biases.

## II. SENTENCING DISPARITY

Research on judicial decision making has repeatedly demonstrated that identical crimes are often punished with strikingly disparate sentences (see e.g., Diamond 1981; Ebbesen & Konecni 1981; Hogarth 1971; Partridge & Eldridge 1974). In fact, substantial sentencing disparities result even when judges receive identical case information. To give one example: in their research program on anchoring in the courtroom, English, Mussweiler, and Strack mainly used two criminal cases as stimulus material: a shoplifting case (see e.g., English, Mussweiler & Strack 2006), and a rape case (see e.g., English & Mussweiler 2001; English, Mussweiler & Strack 2005). These case materials were carefully constructed with the help of legal experts and included all the materials that are typically provided in a court of law (i.e., brief descriptions of the incidence, the victim, the defendant, opinions from medico-legal and psycho-legal experts, as well as statements by the victim, the defendant, and the witnesses).

After reading these case materials as well as the relevant passages from the penal code along with the commentaries,<sup>1</sup> experienced judges who were asked to render a decision came up with very different sentences. In the shoplifting case, sentences ranged from acquittal to fifteen months in prison. Sentences for the rape case ranged from acquittal to 5.5 years in prison. This was the case despite the fact that the case materials were judged by the participants to be realistic and complete.

The question that arises, therefore, is whether these variations in judicial decision making might be as a result of systematic influences other than the case that is being judged. Specifically, the hypothesis that legal judgments may be affected by biases emanating from the use of heuristics seems

justified and in need of experimental investigation. In particular, it will be asked whether anchoring effects occur in the courtroom.

### III. ANCHORING EFFECTS IN THE COURTROOM

Converging evidence suggests that judicial decisions may indeed be influenced by anchors. In particular, research in the civil context of damage awards has shown clear anchoring effects: the larger a plaintiff's request in court, the larger the award (Hastie, Schkade & Payne 1999; Malouff & Schutte 1989). In personal injury verdicts, the requested compensation systematically influences the compensation awarded by the jury as well as the judged probability that the defendant caused the plaintiff's injuries (Chapman & Bornstein 1996; Marti & Wissler 2000). Ironically, even limits on damage awards serve as anchors and therefore increase damage awards (Hinsz & Indahl 1995). Similarly, high caps on punitive damages increase the size as well as the variability of punitive damage awards, compared to a control condition in which no cap was provided (Robbenolt & Studebaker 1999).

Similar effects have been demonstrated in the criminal context: in several studies – all of them using real judges, prosecutors, or junior lawyers as participants – Englich and colleagues (Englich & Mussweiler 2001; Englich, Mussweiler & Strack 2005, 2006) showed that judges were strongly influenced by the prosecutor's demand, which represented and summarized the prosecution's point of view. This even held true if the demand was suggested by a non-legal expert and if the judges were highly experienced. The only difference between junior lawyers and experienced judges was that the experienced judges in these studies felt much more certain about their – equally biased – judgments (Englich & Mussweiler 2001; Englich, Mussweiler & Strack 2005, 2006).

Additionally, analyses of actual court files – by Martin and Alonso (1997) as well as by Englich, Mussweiler and Strack (2005) – show the same data pattern: judges heavily weighed prosecution requests in their decisions. Furthermore, actual bail decisions were found to depend on whether the prosecution requested conditional bail or opposed bail (Dhami 2003).

### IV. INFLUENCES FROM SENTENCING DEMANDS DETERMINED AT RANDOM

Researchers in the domain of decision-making processes have suspected that in some experiments, the influence of the anchor value may be mediated by the presumed knowledge or expertise of the communicator. That is, a person who asks if a product is more or less expensive than a certain value communicates to the respondent that an acceptable reasonable price is somewhere in the vicinity of the anchor value (see e.g., Grice 1975;

Jacowitz & Kahneman 1995; Schwarz 1994). Similarly, a sentence that is proposed by legally trained prosecutor may suggest that an appropriate punishment may be close to the prosecutor's proposal. While such communicative influences are certainly effective in applied contexts, anchoring research has also shown that they are not necessary for producing the effect. That is, even if the anchor value is presented in a way that is entirely dissociated from a communicational context, the task of comparing the target with the anchor still causes an assimilation toward the anchor. This dissociation is accomplished most radically if the anchor value is randomly generated by the respondents themselves. For example, in Tversky and Kahneman's (1974) seminal study, participants selected the anchoring value themselves by spinning a wheel of fortune. More recently, Mussweiler and Strack (2000) used a manipulated dice that was rolled by the participants to determine the anchor. Despite the clear elimination of communicational implications, a strong assimilation effect was obtained.

Applied to the judicial setting, it must be asked whether the obtained judgmental influences depend on the prosecutor's presumed expertise. First evidence that this variable may not be crucial came from a study by Englich and Mussweiler (2001), in which the role of the prosecutor was assigned to a first-year student of computer science, who could not be assumed to be a legal expert. The finding that even experienced trial judges were strongly influenced by this student's proposed punishment suggests that the impact emanated more from the numeric value than from presumed characteristics of the communicator. Still, there is a faint possibility that the judgmental influence depended on the person who suggested the anchor value. Thus, the most unambiguous test of the possibility that even judicial sentencing decisions can be influenced by anchors that are clearly irrelevant is a situation in which the anchor values are not only randomly generated, but in which participants are openly aware of this process.

However, to minimize the potential impact of irrelevant and haphazard influences in the domain of legal decision making, a number of detailed judgmental rules have been introduced and a thorough training program for legal professionals has been put in place. The purpose of these judgmental rules is to secure a maximum of procedural justice in court (Leventhal 1980; Lind & Tyler 1988; Thibaut & Walker 1975). In addition, the penal code and its sentencing guidelines clearly limit the range of sentencing decisions, and the professional training and experience of legal professionals should help to further disambiguate law cases. Given these institutional and procedural precautions, one might doubt that an arbitrary number that is randomly determined would have any influence on judicial decision making. Nevertheless, to test for this extreme possibility, Englich, Mussweiler and Strack (2006) conducted two experiments in which the anchor values were determined by a random process that was entirely transparent to the judges. Participants in their first experiment were recruited during an educational conference. They were practicing judges and prosecutors with an

average professional experience of thirteen years. Participants were asked to find a sentence in a fictitious shoplifting case involving a woman who had stolen some items from a supermarket for the twelfth time. The case material was compiled in close collaboration with legal experts and had been extensively pre-tested. After reading the case material as well as the corresponding passages from the penal code, participants were confronted with a prosecutor's sentencing demand that was either high (nine months on probation) or low (three months on probation). Instructions clearly pointed out that this demand was a randomly generated number that did not represent any judicial expertise. Participants had to indicate whether they considered the randomly determined prosecutor's demand to be "too low," "too high," or "just right." Finally, participating legal professionals were instructed to put themselves in the role of the judge in the case and to come up with a sentence. Participants were randomly assigned to one of the two anchor conditions.

The results show that judges' sentencing decisions in the shoplifting case ranged from acquittal to twelve months on probation. More importantly, participants in the role of the judge gave higher sentences for the same shoplifting case if the random prosecutor's demand was high rather than low. Thus, the prosecutor's sentencing demand clearly influenced the judges' decision, even though the demand was explicitly determined at random.

However, even this study does not definitively rule out the possibility that the experimenter's claim was not believed. To make absolutely certain that participants were aware of the random nature of the prosecutor's demand, English, Mussweiler and Strack (2006) conducted a second study. The experimental procedure in this second study was similar to that of Study 1. The crucial difference was that participants in Study 2 determined the prosecutor's demand themselves by throwing dice: this procedure was used to make absolutely clear to the participants that the prosecutor's demand was irrelevant and determined at random. The dice used in Study 2 were loaded so that participants were confronted with exactly the same sentencing demands as participants in Study 1 (three versus nine months). To enhance the transparency of the random anchor selection, participants were asked to fill in the prosecutor's demand, which they had determined themselves by rolling the dice, on their own questionnaire. Participants were junior lawyers with first practical experiences in the courtroom dealing with criminal cases. Most of the participants (79 percent) described the prosecutor's demand determined by throwing dice on a yes/no question as not relevant for their own sentencing decision.<sup>2</sup>

In spite of all of these precautions to ensure that a perception of the selection of the prosecutor's demand was seen to be random, there was a clear anchoring effect on the judges' sentencing decisions, which ranged from one month on probation to twelve months on probation: judges gave higher sentences when they were confronted with a high prosecutor's demand than when they were confronted with a low prosecutor's demand.

Taken together, these findings demonstrate that the sentencing decisions of legal experts are subject to anchoring influences. Disconcertingly, both studies found such anchoring effects even when the anchors were not intentionally provided but clearly determined in a random fashion (English, Mussweiler & Strack 2006). Participating legal experts anchored their sentencing decisions on the prosecutor's demand and assimilated towards it even if they had determined this demand themselves by throwing dice. As in other anchoring studies, professional experience did not reduce this bias (e.g., English, Mussweiler & Strack 2005; Joyce & Biddle 1981; Northcraft & Neale 1987; Wright & Anderson 1989).

From a practical viewpoint, one might object that sentencing demands in a real court case are not determined by throwing dice. Thus, the "ecological validity" of this study could be questioned. Even if this objection is accepted, these findings suggested a number of practical implications that provided the focus for subsequent studies. Specifically, English and colleagues conducted a series of additional experiments using a set of rape case materials and demonstrated that other irrelevant, but more realistic, anchor values influence sentencing decisions in much the same way as these random anchors. For example, they had a journalist ask judges whether the sentence would be "higher or lower than one year" versus "higher or lower than three years" (English, Mussweiler & Strack 2006), or had a spectator in the courtroom heckle "Give him five years in jail!" versus "Set him free!" (English 2005). In both cases, they obtained similar anchoring influences on judicial sentencing decisions. Obviously, even if judges clearly know that the number presented to them should not be used in their sentencing decision, they assimilate their decisions to the provided value.

## V. UNDERLYING PSYCHOLOGICAL PROCESSES

At this point, the question that arises is "what is behind this data?" Assuming that judicial decision making may be guided by irrelevant numbers, what underlying psychological process may account for such a worrisome effect? How can it be explained that even well-trained and highly experienced judicial experts are susceptible to such biasing influences, which may jeopardize the fairness of legal judgments?

To account for these anchoring effects, four different processes mainly have been suggested in the psychological literature (for an overview, see Chapman & Johnson 2002; Epley 2004; Mussweiler & Strack 1999a; Mussweiler, English & Strack 2004):

- insufficient adjustment (e.g., Epley & Gilovich 2001; Quattrone 1982; Quattrone et al. 1984; Tversky & Kahneman 1974)
- numeric priming (e.g., Jacowitz & Kahneman 1995; Wilson et al. 1996; Wong & Kwong 2000)

- conversational inferences (e.g., Grice 1975; Jacowitz & Kahneman 1995; Schwarz 1994)
- selective accessibility (Chapman & Johnson 1999; Strack & Mussweiler 1997; Mussweiler & Strack 1999b).

In their initial account of the phenomenon, Tversky and Kahneman (1974) describe anchoring in terms of *insufficient adjustment* from a starting point. The scope of the insufficient adjustment account appears to be limited to implausible anchors that are clearly unacceptable. Adjustment may be insufficient because it terminates at the boundary of a region of acceptable values for the estimate (Quattrone et al. 1984). It seems difficult to explain effects of plausible and acceptable anchors by an “insufficient adjustment,” because for such anchors there is no reason to adjust in the first place. Consistent with this assumption, it has been demonstrated that insufficient adjustment only appears to contribute to anchoring effects if the critical anchors are unacceptable, self-generated values rather than acceptable, externally provided ones (Epley & Gilovich 2001).

A second theoretical account—*numerical priming*—assumes that anchoring effects are rather superficial and purely numeric in nature (Jacowitz & Kahneman 1995; Wilson et al. 1996; Wong & Kwong 2000). In particular, solving a comparative anchoring task may simply render the anchor value itself more accessible, so that this value is likely to influence the subsequent absolute judgment. From this numeric-priming perspective, the sole determinant of anchoring effects is the anchor value itself, regardless of its context or the target to which it is compared. However, a purely numeric account is unable to explain, for example, why anchoring effects depend on changes in the judgmental dimension (Strack & Mussweiler 1997).

If anchoring effects were indeed evoked by the anchor value itself, comparing a target on one dimension and judging its absolute characteristic on another should diminish the strength of the effect. For example, using different heights of the Brandenburg Gate as anchor values should have identical effects on subsequent judgments of both the gate’s height and width, because changing the judgmental dimension left the numeric properties of the anchor value unchanged. This, however, is not the case. Instead, as Strack and Mussweiler (1997) have demonstrated, the magnitude of the anchoring effect is reduced if the comparative anchoring question pertains to a dimension other than the absolute anchoring question. Hence, a purely numeric conceptualization of the standard anchoring paradigm seems to be unconvincing.

A third account attributes anchoring to *conversational inferences*. Participants expect an experimenter to be maximally informative (Grice 1975; Schwarz 1994) when asking a question and assume the provided anchor value to be close to the actual value. As a consequence, they may position their estimate in the vicinity of the anchor. Such conversational inferences may exert strong effects if the anchor is intentionally provided and has a



clear relevance for the required estimate. This is particularly the case in applied contexts, where, e.g., a pricing list serves as an anchor for estimates of house prices (Northcraft & Neale 1987).

However, the described assimilation effects also occur if the anchor values are clearly uninformative because they are randomly selected (Tversky & Kahneman 1974), or are implausibly extreme (Strack & Mussweiler 1997). Thus, although conversational inferences are potential determinants of anchoring in natural situations, they are not a necessary precondition.

As a fourth theoretical account, Mussweiler and Strack (Mussweiler & Strack 1999a, 1999b; Strack & Mussweiler 1997) have proposed a *selective accessibility* model of anchoring (for a related account, see Chapman & Johnson 1994, 1999). The basic assumption of the selective accessibility model is that anchoring is in essence a knowledge accessibility effect, and is thus semantic in nature. The model attempts to explain anchoring by linking it to two principles that are fundamental to social cognition research: (1) hypothesis-consistent testing, and (2) semantic priming.

More specifically, the model assumes that in a first step, 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 adequate sentence for a given rape case is higher or lower than a high anchor of five years in prison are assumed to consider this sentence as a possibility. To do so, they selectively retrieve knowledge from memory that is consistent with this outcome (e.g., "The victim clearly stated that she did not want to have intercourse," "The defendant used force," etc.). This kind of hypothesis-consistent testing is a general tendency that contributes to a variety of judgmental processes (Klayman & Ha 1987).

As a result, the accessibility of anchor-consistent knowledge is increased by the comparative judgment. In order to generate the final absolute estimate, judges then rely primarily on easily accessible knowledge (Higgins 1996), so that their estimate is heavily influenced by the anchor-consistent knowledge that has been generated before. In the judicial context, absolute estimates about the adequate sentence would thus be based on the specific subset of target knowledge that was deliberately retrieved to be consistent with the assumption that this sentence should be fairly high. In our example, information that could warrant a high sentence is more likely to come to the judge's mind than less extreme or exculpating information. Conceivably, using this knowledge leads to high sentences, so that the final decision is assimilated to the anchor value.

## VI. TESTING FOR SELECTIVE ACCESSIBILITY IN THE COURTROOM

If this model also explains anchoring effects in the courtroom, knowledge indicating a high sentence should be more accessible after consideration of a high anchor and knowledge indicating a low sentence should be more

accessible after consideration of a low anchor. To test for the psychological processes underlying anchoring in the courtroom according to the selective accessibility model, Englich, Mussweiler, and Strack (2006) conducted a further experiment in which they used a similar procedure as in their dice study. The experiment was altered in the following way: after the comparative question and before the absolute judgment, participants were asked to work through a categorization task that was presented on a computer screen.

In this categorization task, words denoting incriminating and exculpatory arguments for the shoplifting case were used as the critical items. By clicking on a key on the right or the left side of the keyboard, participants had to categorize as quickly and as correctly as possible whether a word presented on the computer screen was an incriminating word or an exculpatory word. A similar design was used by Mussweiler and Strack (2000) in a lexical decision task showing an increased accessibility of expensive cars such as Mercedes and BMW after participants were confronted with a high anchor ("Do you think that the average price for a new car is higher or lower than 40,000 Deutschmarks [U.S. \$ 22,000]) in comparison to another group, which was confronted with a low anchor ("... than 20,000 Deutschmarks [U.S. \$ 11,000]"). In lexical decision tasks, participants have to indicate as quickly as possible whether a string of letters that is presented on the computer screen is a word or not. The present variant of the lexical categorization task requires a somewhat deeper processing of the information. Additionally, a categorization task requires an evaluative decision. Englich, Mussweiler and Strack (2006) expected this kind of measure to better fit into the context of judicial decision making, where information has to be deeply processed and evaluated.

According to the selective accessibility model, Englich, Mussweiler and Strack expected shorter reaction times in their categorization study for incriminating words than for exculpatory words if legal experts had determined a high sentencing demand by throwing dice. The results confirmed this expectation. Incriminating arguments were categorized much more quickly in the high anchor condition, where participants were confronted with a high prosecutor's sentencing demand, than in the low anchor condition. Therefore, accessibility of incriminating arguments was higher after a high sentencing demand. This is consistent with the assumptions of the selective accessibility model.

## VII. WHAT FACTORS MAY WORK AGAINST ANCHORING IN THE COURTROOM?

After looking at the underlying processes, the next question that arises is "what factors may work *against* this subtle and robust anchoring effect of the prosecutor's demand?" There is one obvious answer: in nearly every legal system, we have the defense attorney, who argues against the prosecutor's demand. Hence, another question that logically follows is this: can the defense

attorney correct for the anchoring effect that is created by the prosecutor's demand? The answer is a qualified "no." According to a recent study by English, Mussweiler, and Strack (2005), the prosecutor's sentencing demand influences not only the judge's sentence, but also the defense attorney's recommendation. More specifically, their findings indicate that rather than working against the prosecutor's initial demand, defense attorneys assimilate their own sentencing recommendation to it.

In this research, participants received identical case material describing a case of alleged rape, together with the relevant passages from the penal code. As in previous studies (e.g.; English & Mussweiler 2001), the prosecutor's sentencing demand was twelve months in the low anchor condition and thirty-four months in the high anchor condition. The defense attorney's sentencing demands for the presented rape case varied from acquittal to thirty months in prison. Most importantly, asked for their own sentencing recommendation, defense attorneys recommended higher sentences for the defendant if they had been confronted with the high prosecutor's demand than if they had been confronted with the low prosecutor's demand before.

Note that this assimilation of the defense toward the prosecution's sentencing demand was neither an intentional nor a recommended defense strategy. Instead, it was an unintended and uncontrolled process. To rule out the possibility that defense attorneys might have tried to accommodate the prosecutors' demands, English, Mussweiler, and Strack (2005) asked the participating defense attorneys about the strategy they had applied. The answers confirmed their expectation. Not a single one of the participating legal experts indicated that he or she had tried to adapt to the prosecutor's demand. Instead, participants indicated defense strategies such as: presenting information to counter the prosecution, demanding the lowest possible sentence, trying to force the possibility of probation, or demanding an acquittal. Therefore, the demonstrated influence of the prosecutor's demand on the defense's demand seems to be an unwanted bias rather than a chosen defense strategy.

Now, how exactly does this anchoring effect on the defense further influence the judge's sentencing decision? Will the defense weaken the expected anchoring effect of the prosecutor's demand on the judge's decision or will the defense be the involuntary mediator of the expected bias, even if the role of the defense should be to counteract it? This is the question that was examined in a second part of this experiment.

Specifically, English, Mussweiler, and Strack (2005) presented a high versus low demand from the prosecutor together with the influenced defense attorney's demand from the first part of the experiment to another group of experienced German judges and prosecutors. Participants were asked to put themselves into the role of a trial judge. As in the first part, they began by reading the complete rape-case material. Then they were confronted with the prosecutor's manipulated sentencing demand (high: thirty-four months in prison versus low: twelve months in prison) together with a defense

attorney's influenced sentencing demand from a participant in the first part of the experiment. That is, the authors employed a yoked design, in which a defense attorney's actual demand from part 1 was presented to a judge in part 2 of the experiment. Thus, all defense attorneys' demands from part 1 were systematically distributed to judges in part 2.

Judges' sentencing decisions for the given rape case ranged from six months on probation to forty-eight months in prison. The prosecutors' manipulated sentencing demands presented together with the biased demands from part 1 show a clear effect on the judges' decisions. As was true for the defense's counter-demand, judges' sentencing decisions were also assimilated toward the prosecutor's initial demand. In fact, further mediation analyses reveal that this assimilative sentencing bias is primarily produced by the defense attorney's counter-demand (see Englich, Mussweiler & Strack 2005). It is the biased defense attorney's demand that most strongly pulls the final sentencing decision towards the prosecutor's sentencing demand.

Again, expertise does not protect against this assimilative sentencing bias. In the second part of the described defense study (Englich, Mussweiler & Strack 2005), participants were partly judges and prosecutors who were experienced in criminal cases, and partly judges who were inexperienced in criminal cases. Breaking down the results by experience showed that experienced experts in criminal law were influenced in much the same way as non-experts. Thus, expertise does not significantly reduce the effect of the prosecutor's sentencing demand on the judge's sentencing decision.

There was only one significant difference between experienced and inexperienced legal professionals: experts in criminal law felt much more confident about their judgments. However, the certainty that was experienced by the judges proved to be completely unrelated to their susceptibility to bias. In fact, certainty and bias were not correlated. This suggests that experts may mistakenly see themselves as less susceptible to biasing influences on their sentencing decisions. According to the data, however, both experts and non-experts are equally susceptible to the anchoring bias.

This result converges with the authors' previous findings in the legal context (Englich & Mussweiler 2001; Englich, Mussweiler & Strack 2006) and is consistent with the assumptions of the selective accessibility model (Mussweiler & Strack 1999a, 1999b): during the process of positive-hypothesis-testing, experts may find more – or at least, not less – anchor-consistent information than non-experts because they have better access to such information because of their experience with similar cases.

#### VIII. RECOMMENDED PROCEDURAL CHANGES AT COURT

The anchoring effect seems to prevent the defense attorney from effectively counterbalancing the prosecutor's demand. These results suggest that the standard procedural sequence in the courtroom actually puts the defendant

at a distinct disadvantage. By granting the defense attorney the right of the last word, the legal system simultaneously grants the prosecutor the right of the first word. This allows the prosecution to introduce a judgmental anchor that determines the final sentence, by influencing the judge not only directly, but also indirectly via its influence on the defense attorney's demand. The right of the last word seems to weaken the defense. Consequently, to secure an effective defense, procedural sequences in court may have to be reassessed.

The order of presentation of the two sentencing demands in court may indeed crucially determine their potential influence on the judge's final sentencing decision. More specifically, which party's numerical representation of a given case is presented first decides which party in court enjoys the advantages of the anchoring effect. For a first empirical test of order effects for sentencing demands in the anchoring paradigm, Englich and colleagues again used a rape case and manipulated the order of the demands for the given case (Englich & Rost 2006). What they found by simply changing the order of presentation of the prosecution's and defense's sentencing demands, while keeping both demands constant, is that judges gave lower sentences if the defense's demand came first.

Hence, do anchoring effects in the courtroom critically depend on the order in which both sentencing demands are presented? Would it be possible to reduce the anchoring effect of the prosecutor's demand by changing the order of the sentencing demands? When the authors tested for this by manipulating the prosecution's sentencing demand for the shoplifting case (high: nine months versus low: three months) and the order of presentation of both demands (prosecution versus defense first), they found no anchoring effect for the prosecution if the defense's demand came first, and they replicated the anchoring effect of the prosecution's sentencing demand if the prosecution came first. Note that in this study, using the shoplifting case as stimulus material, the defense's demand was kept constant at one month.

Possible objections might still be that closing statements or sentencing hearings usually consist not only of both parties' sentencing demands: in authentic trials, these demands are accompanied by arguments that can be of different quality. Therefore, one may ask about the extent to which the defense would be able to counterbalance the anchoring effect of the prosecutor by presenting strong defense arguments. To empirically answer this question, again using a shoplifting case, Englich and Rost (2006) first measured the quality of arguments in a pretest with experienced judges. They selected the three strongest versus the three weakest arguments for the defense, and three moderately incriminating arguments for the prosecution. Additionally, they again introduced a high versus a low anchor for the demand from the prosecution. Again, a clear anchoring effect on the judge's sentencing decisions was found, but no effect of the quality of the defense's arguments. Still, when participants were asked about the quality of the

defense's arguments they were confronted with, they recognized which arguments of the defense were strong and which were weak (Englich & Rost 2006).

This data suggests that the prosecutor's influence on the sentencing decision is exerted much more by the sentencing demand itself than by its supporting arguments. The prosecutor's sentencing demand – whether high or low – represents his decision for a harsh versus a lenient punishment. The sentencing demand seems to imply, and therefore implicitly communicate, several possible reasons for this decision without stating so plainly. Hence, different prosecutors' sentencing demands led to different sentencing decisions, even though the prosecutors' sentencing demands were accompanied by exactly the same arguments.

#### IX. GENERAL DISCUSSION

Beyond their more specific consequences, these findings have severe implications for procedural prescriptions or suggestions that are meant to assure the fairness of judicial decisions either by reducing a potential bias (“*audiatur et altera pars*”), or by introducing procedures that are intended to favour the defendant in cases of doubt or ambiguity. It has been part of the legal tradition that such norms are based solely on beliefs and experiences that are shared by the legal profession. The current research suggests that some influences may occur outside of the actors' or decision makers' experience. If this is the case, psychological research on the determinants of such automatic processes that have an effect on human judgments should be used as a source of information. Particularly, mechanisms of cognitive accessibility (Higgins 1996; Higgins, Rholes & Jones 1977) have been shown to effectively influence judgments without the judge being aware of it. Recent research further demonstrates that anchoring effects occur even if anchor values are presented subliminally, outside of participants' awareness (Mussweiler & Englich 2005): if participants are confronted with subliminal anchors while they are thinking about the average price of a new mid-size car or the annual mean temperature in Germany, their estimates are assimilated to the high versus low subliminal anchors. Reaction time data on a lexical decision task further reveals that subliminal anchors produce a selective increase in the accessibility of anchor-consistent target knowledge. These mechanisms of cognitive accessibility determine which information will be easily recalled and thereby influence the judgments that are based on this information.

Perhaps even more importantly, this influence is not introspectively accessible and can therefore not be corrected. That is, while a person may intentionally search for a specific piece of information in memory, the result of this operation is determined not only by the searcher's intention, but also by the activation potential of a particular piece of information. This, however,

is determined by haphazard factors such as the frequency and recency of prior activation, even if this occurred in an entirely unrelated context (e.g., Higgins, Rholes & Jones 1977). Moreover, this impact happens outside of the person's awareness and cannot be penetrated by introspective attempts.

Ironically, it seems that the direction of an influence and its conscious representation are not independent. That is, while the impact of information that changes a judgment into the direction of its implications is likely to go unnoticed, people will be aware of the opposite influence (see Strack 1992). Applied to the legal setting, defense attorneys will be more likely to be aware of their efforts at rebutting an opponent's arguments than having been influenced by them in the first place. Thus, the present sequence of pleading before the court may appear to be in the interest of the defendant. However, the present research suggests that this impression may be faulty because it is not based on the actual impact of the attorneys who plead first, but on the rebuttal that the defense is able to make and the fact that this is the last word in court. Anyhow, if the rules of the game would be changed in the way that the defense would have the right to go first, would this improve the "objectivity" of the verdict? Probably, judges would now be biased by the defense's sentencing recommendation. At least it remains a normative question, whether this would mean a fairer procedure in a given legal system or not.

The findings summarized in this article clearly suggest that a decision whether or not a particular courtroom procedure favors the defendant should not be made on the basis of intuition or even professional experience. Instead, what is needed is systematic research that captures not only the persuasive effects that are represented in the attentional focus of the legal actors, but also those influences that occur outside of the protagonists' conscious awareness. Thus, basic insights about the psychological mechanisms of human judgment may help to decide what is fair in a court of law.

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#### NOTES

1. Note that in the legal system in Germany, where the studies were conducted, sentencing guidelines are included in the penal code and its commentaries.
2. Note that 21 percent is still a high proportion of participants who said that a sentencing demand determined by throwing dice was relevant for their own sentencing decision. However, the relevance question was asked after the biased sentencing decision had been assessed. Hence, the fairly high number of "yes" responses may reflect an insight of the participants that they indeed have been influenced, rather than a normative acceptance of randomly determined sentencing demands as relevant for their sentencing decision.

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