AUTHOR PROOF

Nudges for judges: 1 An experiment on the effect of making sentencing costs explicit 2 Eyal Aharoni*1-3, Heather M. Kleider-Offutt^{1,3}, Sarah F. Brosnan¹⁻⁴, & Hoffman, Morris 3 **B**.⁵ 4 5 6 ¹ Department of Psychology, Georgia State University, Atlanta, GA, USA 7 ² Department of Philosophy, Georgia State University, Atlanta, GA, USA ³ Neuroscience Institute, Georgia State University, Atlanta, GA, USA 8 9 ⁴ Center for Behavioral Neuroscience, Atlanta, GA, USA ⁵ District Judge (ret.), State of Colorado, Denver, CO, USA 10 11 * Correspondence: 12 Eyal Aharoni eaharoni@gsu.edu 13 14 Words: 3,922 (excluding figures, tables, and references) 15 Figures: 1

16 Tables: 1

17 Abstract

Judges are typically tasked to consider sentencing benefits but not costs. Previous research finds 18 that both laypeople and prosecutors discount the costs of incarceration when forming sentencing 19 attitudes, raising important questions about whether professional judges show the same bias during 20 sentencing. To test this, we used a vignette-based experiment in which Minnesota state judges (N 21 22 = 87) reviewed a case summary about an aggravated robbery and imposed a hypothetical sentence. Using random assignment, half the participants received additional information about plausible 23 negative consequences of incarceration. As predicted, our results revealed a mitigating effect of 24 cost exposure on prison sentence term lengths. Critically, these findings support the conclusion 25 26 that policies that increase transparency in sentencing costs could reduce sentence lengths, which 27 has important economic and social ramifications.

29 1 Introduction

30 Criminal court judges are explicitly trained to consider the expected benefits of their sentences, such as retribution, incapacitation, and deterrence (ALI, 2017), but not the costs 31 32 (Flanders, 2012a). This may be by design, as costs are commonly viewed as extraneous to the 33 sentencing process and are offloaded to other levels of government (State v. Bell, 2011; US v. Park, 2014). But insulating judges from sentencing costs does not make these costs go away. For 34 example, the direct monetary cost of incarcerating a single inmate averages \$33,000 per year 35 36 (Mai and Subramanian, 2017), a figure that rivals college tuition. This says nothing of the many 37 collateral consequences of incarceration for offenders and their families, such as loss of income 38 (e.g., Kirk and Wakefield, 2018), or the possible criminogenic consequences of incarceration 39 (e.g., Stemen, 2017), which disproportionately affect disadvantaged communities (Bierschbach 40 and Bibas, 2017).

41 When judges are exposed to the benefits of a sentence but not the costs, they might 42 punish more than when costs and benefits are considered in concert. Facing the unanticipated consequences of high incarceration rates, this prediction has fueled recent policy efforts (e.g., 43 44 California Assembly Bill 1474) to increase transparency in sentencing by disclosing the cost of incarceration to judges at the time of sentencing (Alpert, 2021; Ewing, 2018). Similar policies 45 have already been adopted in a few other jurisdictions, such as Colorado and Missouri (Colo. 46 47 Rev. Stat., 2021; Flanders, 2012b). But what effect, if any, will such exposure have on judicial 48 sentencing decisions? We consider three rivalrous theoretical predictions: deontological, 49 economic, and cognitive. Deontological, or duty-based, theories assert that punishment 50 judgments should be determined exclusively by the principle of just deserts (i.e., what the offender deserves with respect to the wrongfulness of his transgression; ALI, 2017; Hart, 1968) 51 In this view, the material consequences of the punishment are irrelevant, so their utility should be 52 zero. Economic theories, in contrast, assume that decision costs and benefits are potentially 53 54 relevant and so sentencing cost information could have a mitigating effect on sentences, but only 55 if it contains added value to the decision maker (Becker, 1968).

56 So, if judges are already aware of sentencing costs, or simply do not value them, then exposure to cost information should not affect their punishment judgments. Conversely, if cost 57 exposure does reduce their punishments, this would imply that they value cost information but 58 59 their consideration of that information hinges on their access to it. This latter view is consistent 60 with cognitive theories that preferences are sensitive to contextual and psychological factors such 61 as availability of information (Tversky & Kahneman, 1973). According to this perspective, if 62 judicial valuation of sentencing costs is conditional upon their contextual salience, (i.e., 63 reminding of costs), then exposure to relevant cost information, such as the negative consequences of incarceration, should reduce their sentences relative to the status quo. 64 Confirmation of this hypothesis would have implications for incarceration rates and, therefore, 65 66 would inform policy debates about what types of information should and should not be available 67 to judges during sentencing.

68 Systematic tests of this hypothesis, however, are sorely lacking. Most studies on the 69 effect of sentencing cost exposure have examined attitudes among laypeople. These studies 70 demonstrate that exposure to information about sentencing costs reduces the severity of 71 punishment recommendations or support for punitive policies (Gottleib, 2017; Thomson & 72 Ragona, 1987; Aharoni et al., 2018; Aharoni et al., 2019; Aharoni et al., 2020). Judges and 73 prosecutors might be less sensitive to sentencing cost information than laypeople because they 74 know more about those costs, or because they consider those costs to be irrelevant. However,

- only a few studies have examined the effects of punishment cost exposure on judges and
- 76 prosecutors. In one recent vignette experiment conducted with a national sample of prosecutors
- 77 (Aharoni et al., 2021), we found that when prosecutors were insulated from sentencing cost
- 78 information, their prison sentence recommendations for an offender convicted of drug trafficking
- were almost a third longer than sentences rendered following exposure to brief information about
 the cost of incarceration (Aharoni et al., 2018; Aharoni et al., 2020). Exposure to a fiscally
- 81 equivalent benefit of incarceration had no impact on prosecutors. We concluded that prosecutors
- 82 implicitly value incorporating sentencing costs but selectively neglect them unless they are made
- explicit, and this tendency could have a consistently aggravating effect on the sentencing
- 84 recommendations they make to judges (Aharoni et al., 2021).

85 Only one study has examined cost framing in professional judges. In that study, judges from a variety of jurisdictions were exposed to true information about the direct cost of 86 87 incarceration for a rape case and rendered sentences that were about 30% shorter than those exposed to no- or low-cost information (Rachlinski, Wistrich, & Guthrie, 2013). This important 88 89 finding raises several new questions: Would the cost salience effect occur in response to a wider variety of negative consequences of incarceration that might be relevant to judges in addition to 90 91 purely monetary ones? Would it generalize to other crime types? And would it survive the use of real-world sentencing guidelines, which impose statutory constraints on the presumptive and 92 93 allowable sentencing range in many jurisdictions?

If cost salience mitigates judicial sentences, this evidence would be consequential for policy efforts aiming to disclose (or block) cost information in court (e.g., CA bill 1474). One concern about such policies is that they could result in arbitrary disparities in sentencing because different judges might interpret and value the costs differently (Flanders, 2012b). This question can be directly tested by evaluating potential differences in variance between judges who are exposed to cost information versus those not exposed.

100 This article reports a test of these questions in a sample of state judges in Minnesota. 101 Minnesota is one of 25 U.S. states that employs sentencing guidelines, which are designed to 102 increase standardization between judges and their prison sentences. If prison sentencing cost 103 information exhibits measurable effects within the constraints of a guideline framework, its 104 influence in states without guidelines is likely to be at least as strong.

105 Using an experimental vignette method, we presented a case of aggravated robbery to our judge participants, and using random assignment, we manipulated the presence or absence of 106 107 various negative consequences of incarceration, including the direct monetary cost of 108 incarceration but also the negative impact on the defendant's family, employability, and 109 probability of reoffending. Participants responded using a real prison sentencing range derived 110 from Minnesota statutory law. We predicted that exposure to information about the plausible 111 negative consequences of incarceration would reduce prison sentencing judgments among judges relative to a (status quo) condition with no cost information, suggesting that judges ultimately 112 113 value cost considerations but neglect to consider them under the status quo. Evidence for this 114 hypothesis would represent an important step in identifying the hidden drivers of high 115 incarceration rates and how best to manage them.

116

117 2 Methods

119 2.1 Participants

120 Participants were 87 Minnesota state judges with at least six months of experience on the bench. Sixty-two were recruited from virtual workshops in the Minnesota Annual Conference of 121 122 State Judges in December, 2021. All MN state judges are invited to the conference and most $(\sim 2/3)$ participate. The remainder were recruited by workshop participants who forwarded the 123 124 survey invitation to colleagues on their judicial district mailing lists in February, 2022. This 125 strategy did not lend itself to assessment of response rates since we could not obtain complete records of how many participants received a survey invitation. What is known is that all those 126 127 who responded to the electronic consent question completed the survey.

- 128 Sample composition was 50.58% male, 44.83% female, similar to MN base rates 129 (www.mncourts.gov); with a mean age of 55.64 years (SD = 8.70) and M = 9.94 years of judicial 130 experience (SD = 7.38). These attributes did not differ statistically between conditions (See Table 1). 80.46% reported working across units, and the remainder worked in a specialized unit 131 132 (e.g., felony, misdemeanor, juvenile justice, family law). Less than 4% reported a caseload that did not include criminal trials (e.g., civil or appellate judges). We did not exclude these judges 133 134 because civil and appellate judges commonly have some experience with criminal law. The overall sample leaned slightly liberal at M = -0.96 (SD = 1.04), though this may be on par with 135 MN base rates (Bonica & Woodruff, 2012). Ethnicity and race were not collected. Since 136 137 conference and survey participation were voluntary, it is possible that certain demographic traits 138 were disproportionately represented, introducing possible selection bias, but we do not have data to address this possibility. 139
- 140

141 2.2 Design and Hypotheses

142 This study used a two-groups design. Participants were randomly assigned to one of two 143 cost conditions: information about negative consequences of incarceration was either present or 144 absent. Based on previous research, our hypothesis was that sentencing judgments would be 145 lower when this information was present than absent.

146

147 2.3 Materials & Procedures

Prior to their workshop presentation, participants were invited to participate in an
anonymous 5-minute web survey on "legal decision making". Using the Qualtrics survey
platform, we presented a fictitious case summary describing a drug trafficking conviction. First,
participants were instructed:

152Imagine you are presiding over a case of Aggravated Robbery, a level 8 felony. You will153read a case summary about an adult defendant who has been found guilty, then you will154decide on his sentence. Then you will be asked questions about yourself and about the155case, so please read attentively.

156 The case summary was constructed to assure participants that the defendant was factually guilty, 157 and the vast majority (95.4%) later agreed with a forced-choice statement that there was enough 158 evidence to support the defendant's conviction (disagree vs. agree). The use of a dangerous 159 weapon and a prior offense were stipulated to ensure that the presumptive sentence, according to 160 MN statute, would be prison. The case summary stated:

161Joseph, a 35 year-old man, was charged and convicted after trial of one count of162aggravated robbery in the first degree. He accosted a 39 year-old female patron

behind a gas station, demanding her wallet. When she hesitated, Joseph swung a
crowbar at her face, narrowly missing her jaw, then attempted to flee with her
wallet containing \$300. A security guard apprehended Joseph on the scene until
police could make an arrest. The incident was captured on security footage, and
Joseph confessed. Ten years ago, Joseph completed a sentence for a prior assault
with a knife. He has a handful of other misdemeanor convictions, none violent,
and no other prior felony convictions.

170

171Participants in the treatment condition received an additional statement about the negative172consequences of incarceration. The statement was intended to cover an array of plausible173consequences, and participants in this condition confirmed their plausibility on a 5-point ordinal174scale from "not at all plausible" to "very plausible"), M = 3.00 (SD = 0.90). The manipulation175stated:

176

Incarcerating Joseph would likely have the following negative consequences:

- 177 *increase the financial burden on taxpayers for each year that he is incarcerated*
- 178 place an emotional and financial burden on Joseph's family
- 179 reduce Joseph's employability after he is released
- 180 *increase Joseph's odds of committing other serious crimes in the future*

Our goal was to test the salience of judge's general knowledge about a variety of negative consequences of incarceration rather than specific factual details. Therefore, we sacrificed some details that might appear in actual arguments made in a sentencing hearing, such as information that might clarify the defendant's current level of dangerousness. This decision, though limiting the study's ecological realism, assured that confirmation of our hypothesis could not be explained as merely the result of particular anomalous, confounding, or contestable details.

187 Next, the dependent measure was delivered, asking participants to indicate how much
188 prison time should be imposed on a slider scale that ranged from "42 mo. or less" to "96 mo. or
189 more". The instructions specified the true presumptive guideline range, based on realistic
190 assumptions about the defendant's criminal history score and the severity level of his index
191 crime (Minn. Sentencing Commission, 2021).

Assume Joseph's criminal history score is 2, making the presumptive guideline
sentence range 58 - 81 months in prison. Further assume you decided to send
Joseph to prison. Based solely on these facts, how many months in prison will you
impose for this offense? Drag the slider anywhere on the scale.

We made the scale wider than the guideline range because under Minnesota law, judges maydepart from the guideline range.

Next, credibility checks were administered to assess plausibility of the evidence and the
consequences of incarceration. Then we assessed participants' explicit attitudes about whether
"judges should consider the negative consequences of the sentence before deciding how much an
offender should be sentenced", using a 7-point scale from "strongly disagree" (-3) to "strongly
agree" (-3). We assessed self-reported political ideology using a 7-point scale from "very liberal"
(-3) to "very conservative" (+3). Finally, we collected information about age, gender,
specialization, and years of judicial experience. Median survey completion time was 4.02 min.

All study procedures were approved by the university's ethical review board and conditioned on

206 informed consent. All data were analyzed using IBM SPSS v. 26.

207 **3** Results

205

208 Did exposure to plausible negative consequences of incarceration precipitate a sentencing 209 reduction? Using a one-way ANOVA, a main effect of cost salience emerged, F(1, 85) = 4.14, p = 0.045, η_p^2 = 0.05. Consistent with our hypothesis, judges exposed to the list of plausible 210 negative consequences of incarceration imposed prison sentences that were significantly shorter 211 212 (M = 61.56 months, SE = 1.28, 95% CI[59.02, 64.09]) than those not exposed (M = 65.22, SE = 1.28, 95% CI[59.02, 64.09])213 1.26, 95% CI [62.70, 67.72]). This difference amounts to 15.87% change within the presumptive 214 sentencing range of 58 - 81 months. According to Levene's test of equality of variances, we also 215 assessed whether the variation between judges' sentences was influenced by exposure to the 216 costs. We did not detect any difference between these variances, F(1, 85) = 1.98, p = 0.164. (See 217 Fig. 1.)

218 A few judges (7) made a downward departure below the presumptive range (and 1 219 departed above that range), but more of these individuals (4 of the 7) were in the cost absent 220 condition. Indeed, when we exclude those who departed from the presumptive range, the size of the main effect of cost exposure shows a modest increase, F(1, 76) = 5.76, p = 0.019, $\eta_p^2 = 0.07$, 221 M = 62.97, SE = 0.89, 95% CI[61.20, 64.75], relative to no exposure, M = 66.02, SE = 0.92, 95% 222 223 CI[64.22, 67.86]. This pattern supports the inference that our cost manipulation shifted their 224 judgments within the presumptive range. Once again, error variances did not differ between 225 conditions, F(1, 76) = 0.974, p = 0.33.

226 When asked about their explicit attitudes on whether judges should consider the negative 227 consequences of incarceration in their sentencing decisions, participants agreed that they should, 228 t(86) = 5.70, p < 0.001, M = 0.91 (*SD* = 1.48). However, this attitude was not affected by 229 exposure to our cost manipulation, t(43) = 1.02, p = 0.31, suggesting a level of stability that pre-230 existed study participation.

Last, our independent and dependent variables were not associated with any of our demographic variables, precluding evidence of moderation or mediation. (See Table 1.)

- 233 [Insert Fig. 1 here]
- 234 [Insert Table 1 here]

235 4 Discussion

The purpose of this study was to test the impact of cost information on prison sentencing judgments made by professional judges. As predicted, judges leveled harsher prison sentences in the absence of information about plausible negative consequences of incarceration. By inference, these judges discounted the negative consequences of imprisonment unless they were made salient. The effect size was modest, but an effect of any size is remarkable given the large number of other factors that undoubtedly explain variance in prison sentencing.

According to the deontological (duty-based) punishment theory, judges should discount or outright ignore information about the negative consequences of incarceration when forming sentencing judgments (see Hart, 1968). Indeed, when left to their own devices-that is, when not 245 prompted by salient cost information- our findings suggest that they do just that. Economic 246 theories, in contrast, predict that punishment decisions should be responsive to their costs-even 247 without prompting—but only if judges are aware of and value those costs (see Becker, 1968). In 248 our study, the negative consequences presented were of the ordinary sort with which any state 249 judge would already be readily familiar. Even if judges were inspired to change their underlying 250 sentencing preferences upon exposure to the brief cost information presented in our study (see 251 Greenberg & Spiller, 2016), this should have been reflected in their explicit attitudes about 252 sentencing, but participants across both conditions equally and positively endorsed the notion 253 that sentencing judges should consider the potential negative consequences of incarceration. So 254 the fact that exposure to brief information about those consequences was sufficient to exert any mitigating influence on their sentencing judgments suggests that while they implicitly value the 255 decision costs, they neglect to consider them unless they are made salient. In short, their 256 257 consideration of prison sentencing cost information is conditional upon their access to it.

258 This pattern of results comports well with cognitive perspectives. For instance, scholarship on the heuristics and biases framework suggests that punishments will be sensitive, 259 260 not just to the overt utility of the cost/benefit information but also extra-legal, contextual factors 261 like its availability (Bennett, 2014; Tversky & Kahneman, 1973). In this view, decision makers follow an "out of sight, out of mind" rule whereby the default decision making mode is to only 262 263 consider information that is made explicit at the time of decision (Aharoni et al., 2020; Aharoni 264 et al., 2021). This tendency to neglect decision costs seems especially likely in criminal punishment decisions, wherein judges are often tasked to evaluate immoral acts that violate their 265 sacred values. Sacred values are highly resistant to compromise because their utility is ostensibly 266 267 infinite (Tetlock, 2003). Yet, when prompted to consider the negative consequences of sacred value claims, research has shown that some degree of moral compromise may occur (Baron & 268 269 Leshner, 2000).

270 Our results complement existing research on punishment cost discounting using a 271 distinctive sample of state judges. Our findings are consistent with other studies on sentencing 272 cost discounting in judges (Rachlinski et al., 2013), prosecutors (Aharoni et al., 2021), and 273 laypeople (Gottleib, 2017; Thomson & Ragona, 1987). Our study extends this research in three 274 key ways. It uniquely shows that the cost salience effect (1) can occur in response to a wider 275 variety of negative consequences of incarceration that might be relevant to judges than has 276 previously been demonstrated, (2) can occur in response to other serious crime types, namely 277 aggravated robbery, and (3) can survive the use of real-world sentencing guidelines, which 278 impose constraints on the presumptive and allowable sentencing range.

279 Considering real world relevance, our data speak to policies such as CA AB 1474 that 280 would require the disclosure of sentencing cost information to judges at the time of sentencing (Alpert, 2021). This information could be included in the judge's presentencing report alongside 281 282 the expected benefits of the sentence. Scholars have expressed concern that such policies would 283 create disparities in sentencing between judges (Flanders, 2012a). However, our data do not 284 support this inference since the variation in participants' sentences (Levene's test) did not 285 statistically differ between conditions. To the contrary, providing cost and benefit information to judges carries the potential to foster more consistency in judgments since such information 286 287 would no longer be left to the judge's imagination. Such a strategy would not seem to violate 288 established doctrine on the purposes of punishment. Indeed, the current edition of the Model Penal Code's section § 1.02(2b) on the purposes of punishment includes specific provisions to 289

increase transparency in sentencing and to ensure adequate resources are available for sentences
 (ALI, 2017). Sentencing cost information would also seem to be justifiably relevant to arguments
 made by the defense. Defense lawyers, therefore, could benefit from training about presenting
 sentencing cost information to judges, provided that evidence meets the criminal procedural rules
 of that jurisdiction.

295 Our study conclusions are necessarily limited by our methodological choices. First, our 296 sample is not necessarily generalizable to judges in other jurisdictions. Minnesota's particular sentencing rules and ranges will almost certainly differ in some respects from those in other 297 298 states. We restricted our sample to Minnesota partly because it is a guideline state, permitting a 299 test of the claim that guideline ranges will neutralize any effects of sentencing cost information. Restricting our sample to a single jurisdiction also increases our ability to generalize to 300 301 sentencing behavior more broadly within that jurisdiction. Yet, despite the additional constraints built into our methodology, the sentencing behavior observed in our experiment replicates that of 302 303 legal practitioners in more geographically diverse samples (Aharoni et al., 2021; Rachlinski et 304 al., 2013).

In addition, our study was limited to a single crime type. We would not necessarily expect cost framing effects to be as strong among the most serious crimes, such as capital offenses, but future research could test this hypothesis empirically. Meanwhile, the fact that these effects have now been observed in a case of aggravated robbery, and elsewhere in a case of rape (Rachlinsky et al., 2013) suggests that they are not limited to the least serious crimes.

310 Our expected sample size was modest and prevented us from testing the impact of 311 making benefits salient. That being said, our previous research has shown that the sentencing 312 recommendations of prosecutors, who often face professional and public incentives to negotiate for tough penalties, are insensitive to exposure to information about the benefits of incarceration 313 314 (Aharoni et al., 2021). The same pattern has been found among lay judges (Aharoni et al., 2020). It may simply be that these benefits, unlike costs, are already saliently built into the theories 315 316 undergirding criminal punishment. If prosecutors and laypeople are insensitive to benefits 317 information, we might expect professional judges to be too.

318 Future research should consider which types of negative consequences of their sentences 319 matter most for judges, such as financial costs to taxpayers versus collateral consequences to the 320 offender's family. Importantly, answers to these questions could depend on how these consequences are framed and measured. Previous research suggests that market pricing frames 321 322 reduce support for social initiatives, at least when using self-report measures (Tetlock et al., 323 2000). Our own research on self-reported punishment attitudes in prosecutors (Aharoni et al., 2021) and laypeople (Aharoni et al., 2018) confirm this (i.e., participants did not express support 324 for consideration of sentencing costs), but our implicit measures of their punishment judgments 325 326 revealed a sensitivity to cost exposure nonetheless. Any thorough characterization of the decision 327 factors that judges actually value must account for these differences in framing and 328 measurement.

We kept the information about the defendant and the negative consequences of incarceration quite brief to guard against intrusion of potentially confounding details. However, this decision necessarily limits the ecological realism of our stimuli with respect to actual sentencing hearings. Future research should thus consider richer, more naturalistic descriptions such as the defendant's employment history and dangerousness level. Limitations aside, our study findings support the prediction that, without access to

explicit cost cues, professional judges are more punitive than they would be under more

informationally transparent conditions. Importantly, the question at hand is not whether scientistscan get judges to be more lenient. It is whether judicial sentencing judgments could be

can get judges to be more lenient. It is whether judicial sentencing judgments could besystematically biased by their choice architectures, and what, if anything, can shift those biases.

339 Our study found that exposure to brief and plausible cost information may indeed shift those

- 340 biases. This study, thus, contributes to emerging policy debates on transparency in sentencing.
- 341

342 5 Figures

Figure 1. Histogram of prison sentences colored by cost condition (present vs. absent),
interpolated across 43 bins. Plot shows a disproportionate representation of sentences from the
present condition on the lower end of the sentencing scale. Y-axis represents the percentage of
total number of responses.

347

348 6 Tables

Table 1. Relationships between independent and dependent variables and basic demographic variables by cost salience level and sentence length. All *p*-values ≥ 0.10 .

	Cost salience	Sentence length	Cost Present		Cost Absent		Difference Statistic (DS)
	r (p-value)	r (p-value)	$M(SD)^{\rm a}$	N	$M(SD)^{a}$	Ν	DS ^b (<i>p</i> -value)
Gender $(f=0; m=1)$	0.18 (.10)	0.01 (.92)	55.81%	43	37.50%	40	2.79 (.10)
Age (yrs.)	0.07 (.57)	0.07 (.54)	55.08 (8.08)	38	56.30 (9.41)	35	0.58 (.57)
Experience (yrs.)	0.03 (.81)	0.03 (.80)	9.74 (7.68)	43	10.15 (7.14)	41	0.25 (.81)
Political ideology	-0.04 (.76)	0.00 (.98)	-0.93 (1.05)	42	-1.00 (1.04)	40	-0.31 (.76)

^a Denotes mean (*M*) and standard deviation (*SD*) except for Gender, which shows percentage of the

352 sample that is female.

^bAll difference statistics are represented by (independent samples) *t*-values except for Gender, which

354 shows a Chi-squared statistic.

356 7 Conflict of Interest

357 The authors declare that the research was conducted in the absence of any commercial or358 financial relationships that could be construed as a potential conflict of interest.

359 8 Author Contributions

E.A., H.M.K, S.F.B, and M.B.H. conceived the project and developed the empirical approach.
E.A. performed the data collection and analysis and wrote the first draft of the manuscript. All
authors contributed to discussions about the paper's focus, proposed edits, and approved the final

363 version of the manuscript for submission.

364 9 Funding

365 This project received was not funded.

366 10 Acknowledgments

We thank Richard Frase, Oren Gur, Eddy Nahmias, and the members of the Cooperation,
Conflict, and Cognition Lab, especially Sharlene Fernandes, Michael Criner, Kara Queen, and
Angela Wingers for their valuable feedback on this project and manuscript. We extend a special
thanks to the Minnesota Annual Conference of Judges Planning Committee and our participants
for recruitment assistance.

372

373

374

376 11 References

- 377 Aharoni, E., Kleider-Offutt, H. M., and Brosnan, S. F. (2019). The price of justice: Cost neglect
- increases criminal punishment recommendations. *Legal. Criminol. Psych.*, 25, 47-61. doi:
 10.1111/lcrp.12161
- 380 Aharoni, E., Kleider-Offutt, H. M., and Brosnan, S. F. (2021). Correctional "Free lunch"? Cost
- 381 neglect increases punishment in prosecutors. *Front. Psychol. 5053. doi:*
- **382** *10.3389/fpsyg.2021.778293.*
- 383 Aharoni, E., Kleider-Offutt, H. M., Brosnan, S. F., and Fernandes, S. (2020). Slippery scales:
- Cost priming selectively modulates sentencing recommendations in laypeople. *PLOS One. 15*(7),
 eo236764. doi: 10.1371/journal.pone.0236764
- 386 Aharoni, E., Kleider-Offutt, H. M., Brosnan, S. F., and Watzek, J. (2018). Justice at Any Cost?
- The Impact of Cost/Benefit Salience on Criminal Punishment Judgments. *Behav. Sci. Law.* 37,
 386 38-60. doi: 10.1002/bsl.2388
- 389 Alpert, D. (2021). California Assembly Passes Bill Requiring Prosecutors and Judges to
- 390 Consider Costs of Sentencing in Criminal Cases. California State Assembly Democratic
- 391 Caucus. Available at: https://a45.asmdc.org/press-releases/20210603-california-assembly-
- 392 passes-bill-requiring-prosecutors-and-judges-consider
- American Law Institute (2017). *Model Penal Code*. Philadelphia, Pa. The American Law
 Institute. Available at: https://archive.org/stream/ModelPenalCode_ALI/MPC (Accessed March
 3, 2022).
- Baron, J., and Leshner, S. (2000). How serious are expressions of protected values? *J. Exp. Psychol. Appl.* 6(3), 183–194. doi: 10.1037/1076-898X.6.3.183
- Becker, G. S. (1968). Crime and punishment: An economic approach. In *The Economic Dimensions of Crime* (pp. 13-68). Palgrave Macmillan, London.
- 400 Bennett, M. W. (2014). Confronting cognitive "anchoring effect" and "blind spot" biases in
- federal sentencing: A modest solution for reforming a fundamental flaw. J. Crim. Law. Crim.
- 402 *104*, 489–534. doi: 10.1177/0734371X17704891
- Bierschbach, R., and Bibas, S. (2017). Rationing criminal justice. *Mich. Law. Rev.* (116.2), 187.
 doi: 10.36644/mlr.116.2.rationing
- Bonica, A., and Woodruff, M. J. (2012). State Supreme Court Ideology and "New Style" Judicial
 Campaigns. SSRN Electronic Journal. doi: 10.2139/ssrn.2169664
- 407 Colorado Revised Statutes (2021). §16-11-102(1.9(c)). Available at: https://casetext.com/
- 408 Ewing, M. (2018, March). Philadelphia's new top prosecutor is rolling out wild, unprecedented
- 409 criminal justice reforms. Slate Magazine. Available at: https://slate.com/news-and-
- 410 politics/2018/03/phillys-new-top-prosecutor-is-rolling-out-wild-unprecedented-criminal-justice-
- 411 reforms.html (Accessed March 3, 2022).
- 412 Flanders, C. (2012a). Cost and sentencing: some Pragmatic and Institutional doubts. *Federal*
- 413 Sentencing Reporter. 24(3), 164-168. doi: 10.1525/fsr.2012.24.3.164
- 414 Flanders, C. (2012b). Cost as a Sentencing Factor: Missouri's Experiment. Mo. L. Rev. 77, 391.

- 415 Greenberg, A. E., and Spiller, S. A. (2016). Opportunity cost neglect attenuates the effect of 416 choices on preferences. *Psychol. Sci.* 27(1), 103-113. doi: 10.1177/0956797615608267
- 417 Gottlieb, A. (2017). The Effect of Message Frames on Public Attitudes Toward Criminal Justice
- 418 Reform for Nonviolent Offenses. Crime. Delinquency. 63(5), 636–656. doi:
- 419 10.1177/0011128716687758
- 420 Hart, H.L.A. (1968). Prolegomenon to the Principles of Punishment. In *Punishment and*
- *Responsibility: Essays in the Philosophy of Law.* New York: Oxford University Press, 1968. 127.
- 423 Kirk, D. S., and Wakefield, S. (2018). Collateral Consequences of Punishment: A Critical
- 424 Review and Path Forward. *Ann. Rev. Criminol. 1*(1), 171–194. doi: 10.1146/annurev-criminol-425 032317-092045
- 426 Mai, C., and Subramanian, R. (2017). The Price of Prisons: Examining State Spending Trends,
- 427 2010—2015. Vera Institute of Justice. Available at: https://www.vera.org/publications/price-of-
- 428 prisons-2015-state-spending-trends
- 429 Minnesota Sentencing Commission. (2021). Minnesota sentencing guidelines and commentary.
 430 St. Paul, MN. Available at: https://mn.gov/sentencing-guidelines/guidelines/
- 431 Rachlinski, J. J., Wistrich, A. J., and Guthrie, C. (2013). Altering attention in adjudication.
 432 UCLA Law. Rev. 60, 1586.
- 433 Stemen, D. (2017). The Prison Paradox: More Incarceration Will Not Make Us Safer. Vera
- 434 *Institute of Justice*. Available at: https://www.vera.org/publications/for-the-record-prison 435 paradox-incarceration-not-safer
- 436 State of Connecticut v. Bell (2011). 303 Conn. 246 (Conn. 2011). Available at:
 437 https://casetext.com/case/state-v-bell-718
- Tetlock, P. E. (2003). Thinking the unthinkable: Sacred values and taboo cognitions. *Trends in Cognitive Sciences*. 7(7), 320-324. doi: 10.1016/S1364-6613(03)00135-9
- 440 Tetlock, P. E., Kristel, O. V., Elson, S. B., Green, M. C., and Lerner, J. S. (2000). The
- 441 psychology of the unthinkable: taboo trade-offs, forbidden base rates, and heretical
- 442 counterfactuals. J. Pers. Soc. Psychol. 78(5), 853. doi: 10.1037/0022-3514.78.5.853
- 443 Thomson, D. R., and Ragona, A. J. (1987). Popular Moderation Versus Governmental
- Authoritarianism: An Interactionist View of Public Sentiments Toward Criminal Sanctions.
 Crime. Delinquency. 33(3), 337–357. doi: 10.1177/0011128787033003002
- 446 Tversky, A., and Kahneman, D. (1973). Availability: A heuristic for judging frequency and
- 447 probability. Cogn. Psychol 5(2), 207-232. doi: 10.1016/0010-0285(73)90033-9
- 448 United States v. Park (2014). 758 F.3d 193 (2nd Cir., 2014). Available at:
- 449 https://casetext.com/case/united-states-v-young-c-park
- 450

451 12 Data Availability Statement

- 452 The dataset and analysis script for this study can be found in the Open Science Framework:
- 453 https://osf.io/u749f