Ripple Effect of Judicial Harshness

Jakub Drápal, Jan de Keijser, **Michal Šoltés**, Sigrid van Wingerden

Introduction

Assessing the welfare consequences of **sentencing disparities** requires a better understanding of the long-term effects of harsh (or lenient) sentences.

Is an initially disproportionate harsh (or lenient) sentence merely a **one-time negative shock**, or does it **become amplified** or **mitigated** through subsequent sentencing decisions?

RQ: Do judges compensate for or reinforce previously imposed disproportionately harsh sentences?
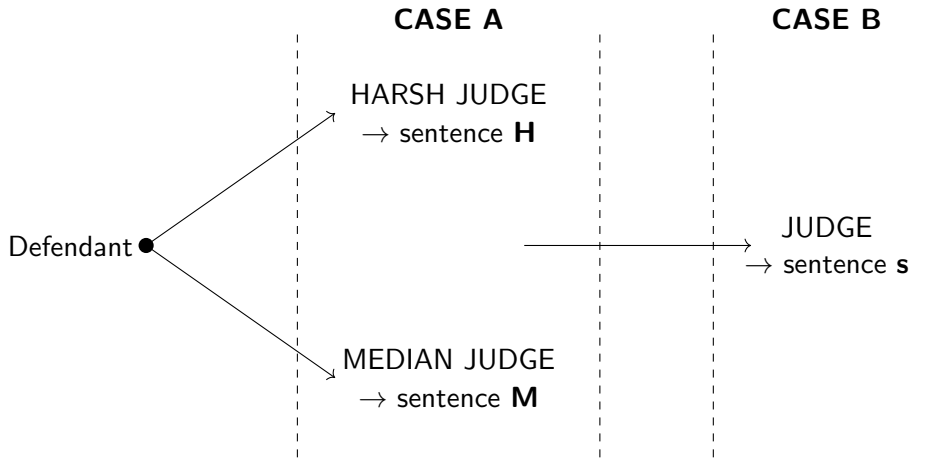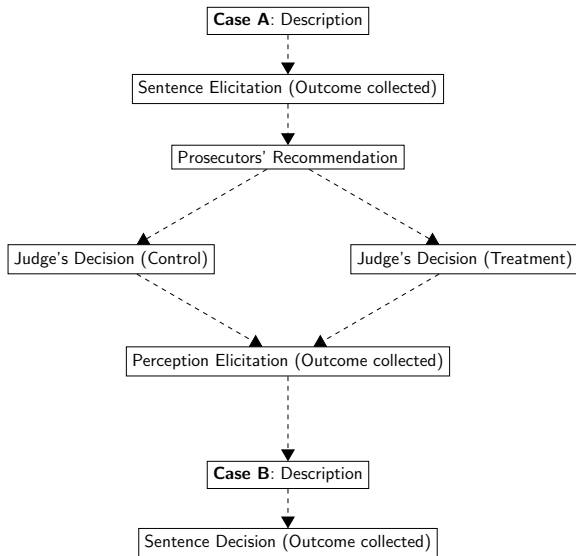
This Project

We conducted four vignette experiments: one with Dutch judges (Experiment 1), and three with Czech judges and public prosecutors (Experiments 2, 3, and 4).

We manipulated the sentence imposed in Case A and asked participants to impose a sentence in Case B.

We find that an **unreasonably harsh sentence in Case A leads to a more severe sentence in Case B.**

- Between-subject design
- Vignettes and T & C conditions varied
- Exp 1-3: Length of prison sentence
- Exp 4: Prison sentence

Experiment 1

Dutch judges and public prosecutors (N = 34)

Defendant with an extensive criminal history, charged with a relatively minor offense

Most professional sentences are expected to result in a prison sentence

Both Case A and Case B involve burglary
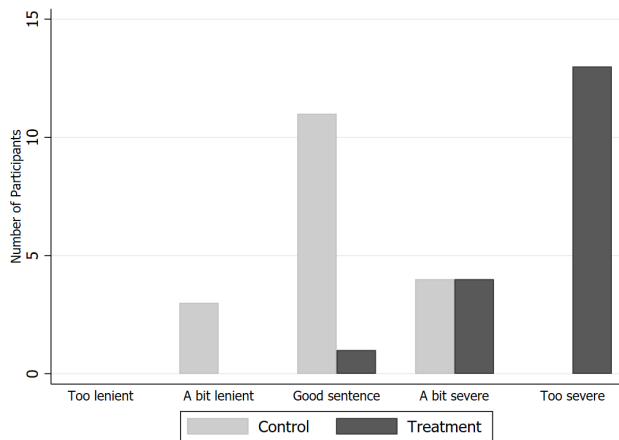
Experiment 1: Vignette

Case A

- Mark B (23) found guilty of residential burglary (laptop and iPad stolen); money used to fund his gambling addiction
- Previously convicted of residential burglary twice (received a fine and community service)
- Prosecutor recommends **3 months** of incarceration
- **Control:** Judge imposes a **3-month** prison sentence
- **Treatment:** Judge imposes a **12-month** prison sentence
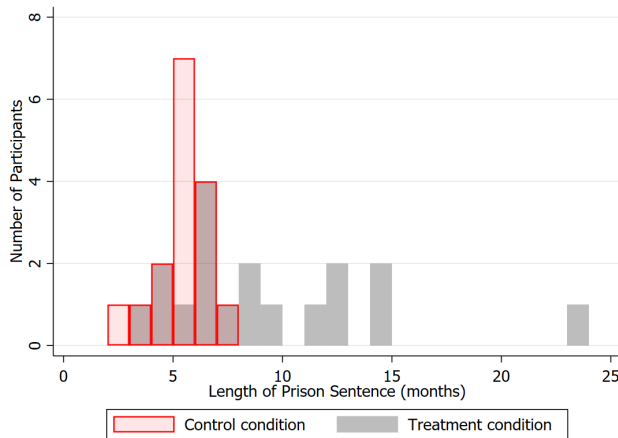
Case B

- One year after completing the sentence: another residential burglary

Experiment 1: Perception of Sentence in Case A (Manipulation Check)

- Median in C: A good sentence
- Median in T: too severe
- Manipulation worked well

Experiment 1: Sentence in Case B

- Median sentence in C: 5 months
- Median sentence in T: 7.5 months

Experiment 2

Czech public prosecutors and judges ($N = 27$)

Replicates Experiment 1 as closely as possible

- Defendant with an extensive criminal history, charged with a relatively minor offense
- Most professional sentences are expected to result in a prison sentence
- Both Case A and Case B involve burglary

Experiment 2: Vignette

Case A

- Marek Novák (23) found guilty of residential burglary (laptop and iPad stolen); money used to fund his gambling addiction
- Previously convicted of residential burglary twice (received a fine and community service)
- Prosecutor recommends **8 months** of incarceration (sentencing range: 6–36 months)
- **Control**: Judge imposes an **8-month** prison sentence
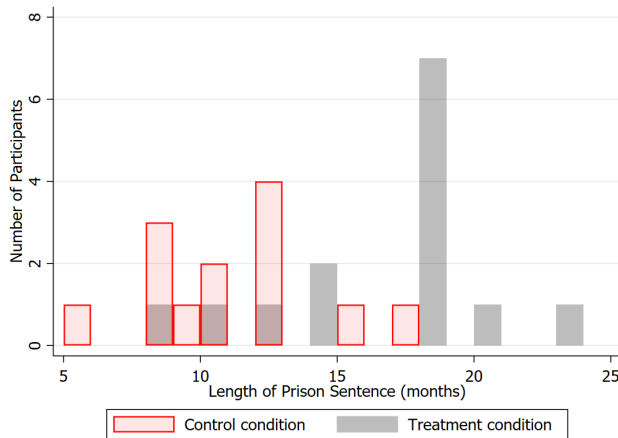- **Treatment**: Judge imposes a **22-month** prison sentence

Case B

- One year after serving his sentence: another residential burglary in the same town (damages of CZK 25k)

Experiment 2: Perception of Sentence in Case A (Manipulation Check)
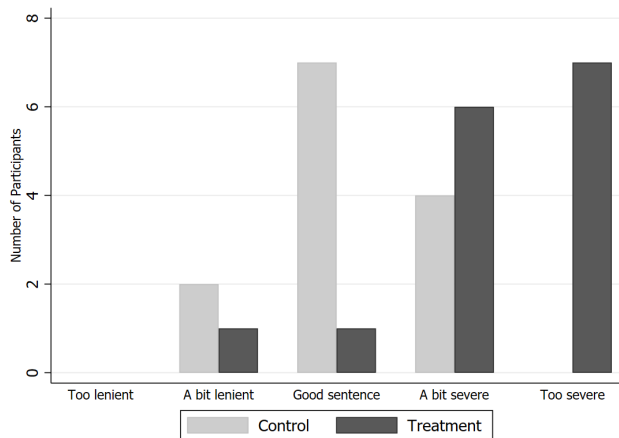
- Median in C: A good sentence
- Median in T: A bit too severe
- Manipulation worked well

Experiment 2: Sentence in Case B

- Median sentence in C: 10 months
- Median sentence in T: 18 months

Experiment 3

Czech state prosecutors ($N = 69$)

Key differences in design:

- Cases A and B involve different criminal offenses (disrupting continuity of the criminal career)
- Both cases are relatively serious

Experiment 3: Vignette

Case A

- Karel Barton (born 1994) was caught selling methamphetamine, intending to use the proceeds to purchase another dose; pleaded guilty
- Previously sentenced three times, including twice for drug-related offenses
- Prosecutor recommends a **2-year** prison sentence
- **Control**: Judge imposes a **2-year** prison sentence
- **Treatment**: Judge imposes a **6-year** prison sentence (with uninformative reasoning or more informative reasoning mitigating the adverse characteristics of the offender mechanism)
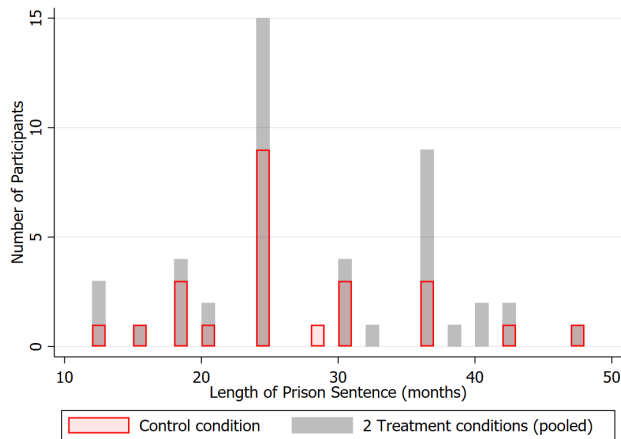
Case B

- Committed fraud by selling a nearly new Škoda Superb vehicle he did not own (damages of CZK 130k)

Experiment 3: Perception of Sentence in Case A (Manipulation Check)
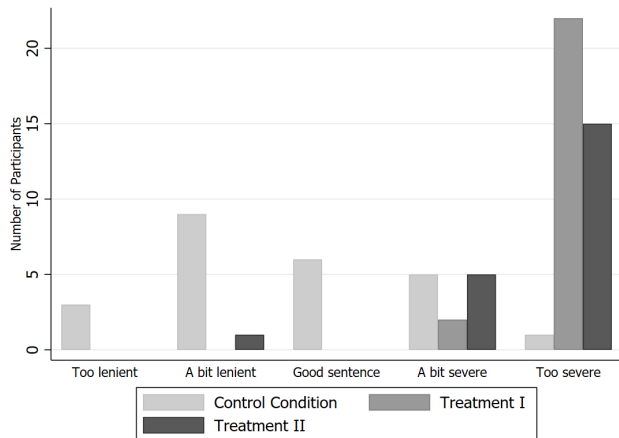
- Median in C: A good sentence
- Median in T: Too severe
- Manipulation worked well

Experiment 3: Sentence in Case B

- Treatment arms pooled together
- No apparent effect

Experiment 4

Czech state prosecutors ($N = 110$) (some participants also took part in Experiment 3)

Outcome: Likelihood of imposing a prison sentence (extensive margin)

- Treatment manipulates the type of sentence in Case A
- Primary outcome: whether a prison sentence is imposed in Case B

Experiment 4: Vignette

Case A

- Jakub Matějka (born 1985) sold 146 counterfeit tickets for a music festival (damages of CZK 144k); admitted his actions and attempted to compensate for the damages
- Previously convicted of fraud twice (never incarcerated)
- Prosecutor recommends a **2-year suspended** prison sentence
- **Control**: Judge imposes a **2-year suspended** prison sentence
- **Treatment**: Judge imposes a **2-year** prison sentence
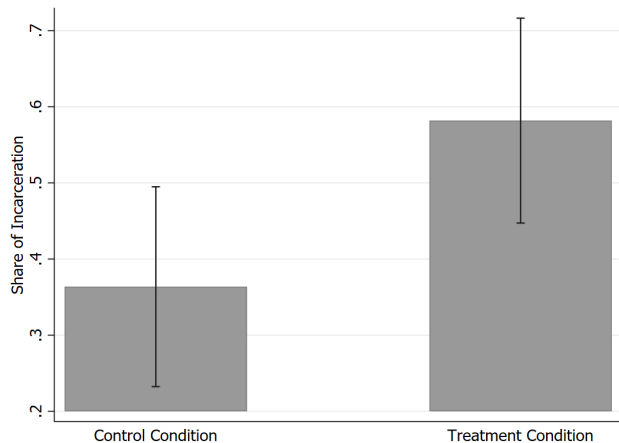
Case B

- Committed another fraud: offered to sell spare parts for vintage vehicles, which he neither sent nor intended to send (damages of CZK 26k)

Experiment 4: Perception of Sentence in Case A (Manipulation Check)
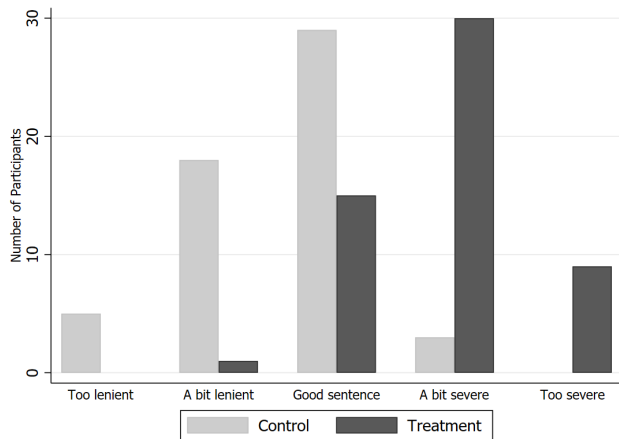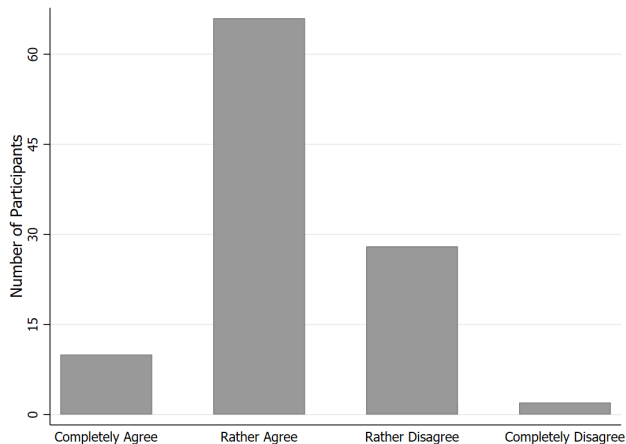

- Median in C: A good sentence
- Median in T: A bit too severe
- Manipulation worked well

Experiment 4: Sentence in Case B

- C: 36% prison sentence
- T: 58% prison sentence

Self-Reported Attitude

- Most participants (exp. 3) agree that imposing incarceration is more **appropriate** for defendants who have been previously incarcerated than for those who have not.

Results

Run the following simple regression for each experiment separately

$$\text{Sentence} = \alpha + \beta \times \text{Treatment} + \varepsilon$$

We normalized the length of the prison sentence for Experiments 1-3 (mean in the control group $= 0$, SD $= 1$) and pooled observations across experiments.

In the paper, we also report a weighted version, in which each experiment receives equal weight.

Treatment Effect (Experiments 1-3, normalized)

Results

	Length of Prison Sentence					Prison Sentence
	Months			SD		=1
Treat.	3.861***	5.593***	1.381	1.057***		0.218**
	(1.308)	(1.477)	(2.218)	(0.334)		(0.094)
Cons.	5.000***	10.692***	26.375***	-0.000		0.364***
	(0.952)	(1.064)	(1.791)	(0.257)		(0.066)
N	34	27	69	130	130	110
Exper.	1	2	3	pooled	norm'ed treat.	4

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Size of the Ripple Effect

Interpreting the magnitude of the results is difficult when treatment sizes differ (e.g., 12 vs. 3 months; 22 vs. 8 months).

Possible interpretations:

- The effect of shifting the sentence in Case A from *a reasonable sentence* to *(somewhat) too harsh*.
- We normalize the treatment so that β is interpreted as the effect of doubling the sentence in Case A (assuming a linear treatment effect).

Results

| | Length of Prison Sentence | | | | | Prison Sentence |
	Months			SD		=1
Treat.	3.861***	5.593***	1.381	1.057***	0.615***	0.218**
	(1.308)	(1.477)	(2.218)	(0.334)	(0.141)	(0.094)
Cons.	5.000***	10.692***	26.375***	-0.000	-0.171	0.364***
	(0.952)	(1.064)	(1.791)	(0.257)	(0.242)	(0.066)
N	34	27	69	130	130	110
Exper.	1	2	3	pooled	norm'ed treat.	4

Standard errors in parentheses

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Potential Mechanisms

Signalling: A previously harsh sentence signals unobserved (to the judge in Case B), adverse characteristics of the defendant.

- Weak and suggestive evidence based on reported attitudes.

Function of punishment: If a harsh sentence were not sufficient, it would be inappropriate to impose a (much) more lenient sentence.
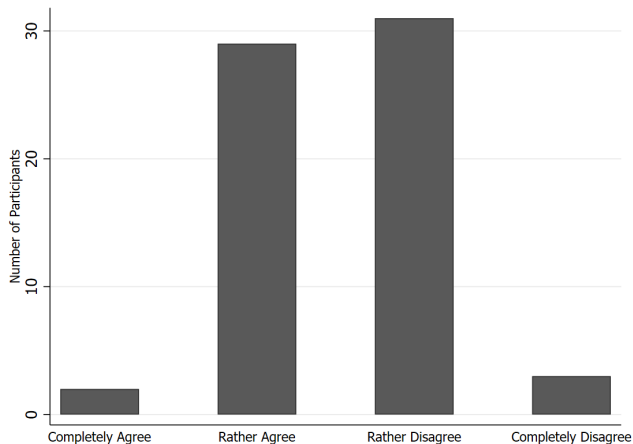
- Switching to a different type of crime between Case A and Case B may weaken the effect.

Signaling
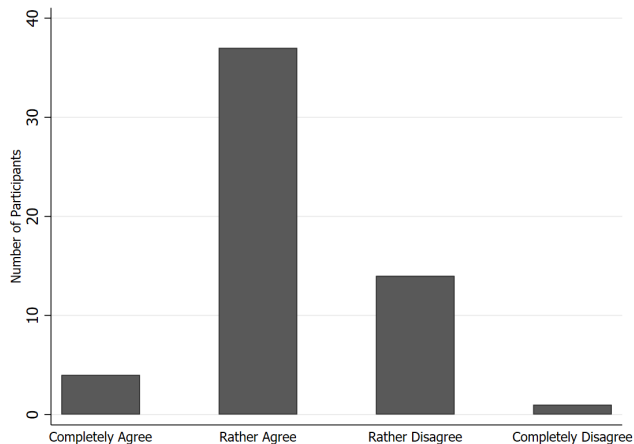
- A previous harsher sentence is a signal of adverse quality
- Majority weakly agree
- Only from Exp. 3

Function of Punishment

- Previous harsh sentence should lead to a longer imprisonment because [. . .] low chance of rehabilitation and [. . .] should be isolated
- Sample is split
- Only from Exp. 3

Anchoring Effect vs Ripple Effect

Conducted a richer experiment with Dutch law students, including treatment conditions where the offenders in Cases A and B were different individuals.

If the anchoring effect were driving the results, it should not matter whether the offender is the same or not.

Students are likely more prone to behavioral and cognitive biases such as the anchoring effect, so these results provide an upper bound on the potential influence of anchoring in our main findings.

Results

	Sentence	Sentence	Sentence	Sentence
Treatment × Same Defendant	10.884**	8.369***	9.555***	9.531***
	(4.632)	(2.577)	(2.641)	(2.644)
Treatment (= Anchoring E.)	2.421	6.071***	4.327**	4.340**
	(3.320)	(1.777)	(1.857)	(1.860)
Same Defendant	-1.314	1.219	0.018	0.043
	(3.267)	(1.812)	(1.857)	(1.861)
Constant	10.419***	8.312***	9.284***	9.442***
	(2.390)	(1.231)	(1.311)	(1.447)
N	282	282	564	564
Vignettes	A	B	both	both
Vignette FEs	.	.	.	B

Standard errors in parentheses

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

- Anchoring effect seems to exist (for vignette B)
- Ripple effect remains sizable and significant
- Ripple effect dominates the Anchoring effect

Summary

Conducted four vignette experiments with Dutch and Czech professional sentencers.

Identified a novel phenomenon (?) in criminal sentencing — the ripple effect of judicial harshness.

- Professional sentencers tend to impose harsher sentences following a harsh prior sentence.
- Effects observed in both sentence length and likelihood of incarceration.

Demonstrated that the effect is sizable.

- Shifting from a *reasonable sentence* to a *(somewhat) too harsh* sentence leads to an increase of $1+$ standard deviation in Case B.
- Assuming linearity: Doubling the sentence in Case A leads to a 0.6–0.7 SD increase in Case B.
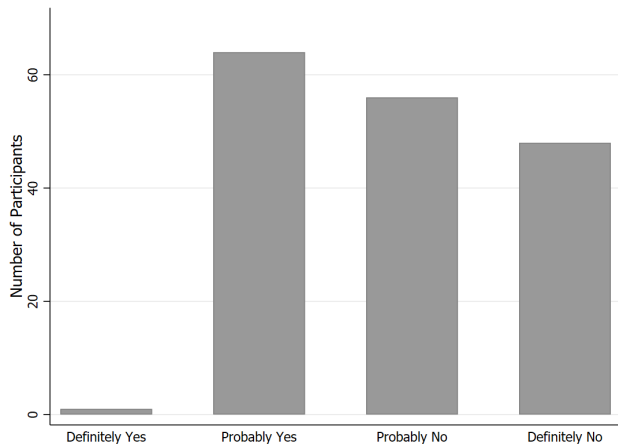
APPENDIX SLIDES
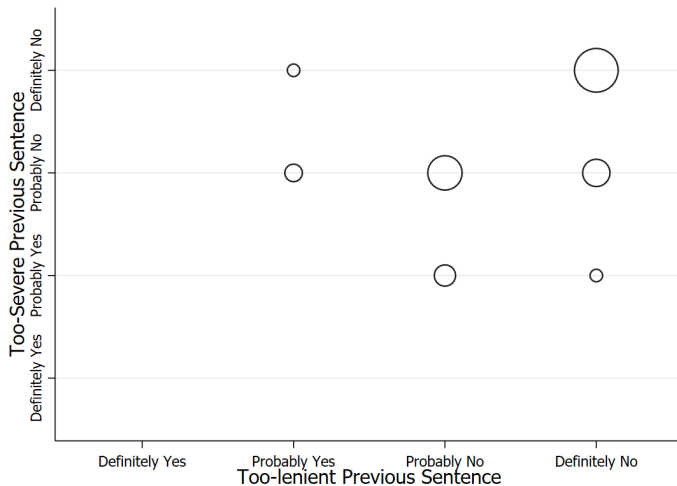
Reported Willingness to Compensate
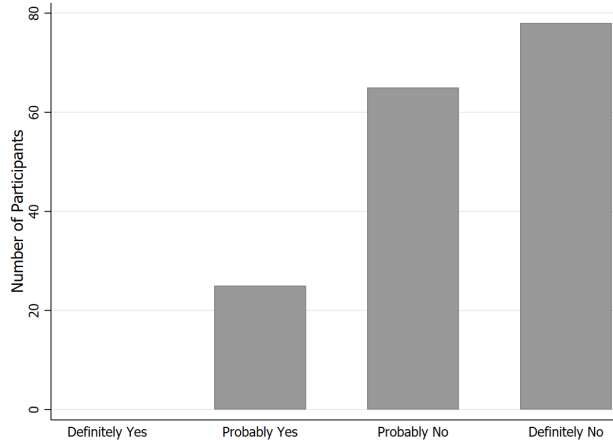
- Would you impose a more lenient sentence as compensation for a previous harsh sentence?

Reported Willingness to Compensate

- Would you impose a harsher sentence as compensation for a previous lenient sentence?

Reported Willingness to Compensate (Dutch)

Reported Willingness to Compensate (Czech)

Question 12

To what extent do you agree with the following statement? I view a previously imposed harsher sentence as a signal that the previous judge observed and reflected in the sentence facts that are not detectable from the criminal record (e.g., the problematic character of the convicted person).

- ☐ Definitely Yes
- ☐ Probably yes
- ☐ Don't know
- ☐ Probably no
- ☐ Definitely No

Question 13

To what extent do you agree with the following statement? A previous long prison sentence should, in the case of recidivism, lead to a longer imprisonment, as such an offender has a low chance of rehabilitation and should be isolated from society.

☐ Definitely Yes
☐ Probably yes
☐ Don't know
☐ Probably no
☐ Definitely No