Supplementary Material

Why do we punish?

On retribution, deterrence, and the moderating role of punishment system

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Non-parametric tests

   Applying a non-parametric test (Wilcoxon signed rank test) revealed in line with the multilevel regression analyses that participants punished more under hidden punishment compared to unintentional offense, but the difference did not reach statistical significance ($Z =$ -1.80, $p = .071$). The difference between open and hidden punishment was significant ($Z = -$3.19, $p = .001$), indicating more punishment under hidden compared to open punishment.

Analyses including the covariates age, sex, and order of punishment conditions

To control for order effects of the punishment systems, we included dummy variables coding for whether participants experienced open punishment first (open first = 1, hidden first = 0, unintentional first = 0) and whether participants experienced hidden punishment first (open first = 0, hidden first = 1, unintentional first = 0) contrasted against experiencing unintentional punishment first. The analyses revealed no influence of order of punishment conditions on punishing behavior. Age and sex were also not significantly associated with punishment behavior. The effects of punishment system, punishment conditions, as well as their interactions remained stable when including age, sex, and order of punishment conditions as covariates (see Table S1).

Table S1. Results of the hierarchical regression analyses to predict amount of punishment depending on punishment system, punishment condition, and their interactions including the covariates age, gender, and order of punishment conditions.

Predictor	Fixed					Random	
	Coef.	Est.	*SE*	*t*	*df*	Coef.	*SD*
Intercept	β_{00}	36.84	7.70	4.78***	294	r_{0i}	24.67
System	β_{01}	3.73	1.99	1.88+	143		
Retribution	β_{10}	-4.08	1.88	-2.18*	294	r_{1i}	22.89
Deterrence	β_{20}	-6.17	1.83	-3.38***	294	r_{2i}	22.29
Retribution × System	β_{11}	-3.27	1.77	-1.85+	294		
Deterrence × System	β_{21}	-4.12	1.72	-2.39*	294		
Age	β_{02}	-0.004	0.13	-0.03	143		
Gender	β_{03}	-0.71	3.00	-0.24	143		
Open first	β_{04}	-1.90	4.19	-0.46	143		
Hidden first	β_{05}	-6.45	3.92	-1.65	143		

Note. Retribution and Deterrence are dummy coded (Retribution: hidden = 0, open = 0, unintentional offense = 1, Deterrence: hidden = 0, open = 1, unintentional offense = 0); Order is dummy coded (Open first: hidden first = 0, open first = 1, unintentional offense first = 0, Hidden first: hidden first = 1, open first = 0, unintentional offense first = 0); Punishment is effect coded with decentral = -79/70 and central = 1.

Zero-order correlations between self-reported motives and punishing behavior

We observed no significant associations between self-reported support for retribution or deterrence and the within-person difference in punishment between hidden punishment and unintentional offense conditions (i.e., observed retribution) or the difference in punishment between open and hidden punishment conditions (i.e., observed deterrence; see Table S2).

Self-reported support for retribution was associated with the amount of punishment assigned under the hidden ($r = .16$, $p = .053$) and under open punishment ($r = .18$, $p = .031$), but not with punishment under unintentional offense ($r = .09$, $p = .294$; see Table S2).

Table S2. Zero-order correlations between self-reported support for retribution and deterrence and punishment under hidden punishment, open punishment, and unintentional offense depending on punishment system (central vs. decentral).

	Self-reported retribution			Self-reported deterrence		
	across	decentral	central	across	decentral	central
Retribution	.08	.02	.14	-.09	-.08	-.11
Deterrence	.003	.17	-.18	.04	.15	-.10

Note. Retribution: Within-person difference in punishment under hidden punishment and unintentional offense; Deterrence: Within-person difference in punishment under open and hidden punishment; $N = 149$ (Decentral: $n = 70$, Central: $n = 79$).