

## **SUPPLEMENTARY MATERIALS**

for “Moral Punishment in Everyday Life”

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### **1. Participant Recruitment and Eligibility**

Participants were recruited between January 2013 and June 2014 via various forms of advertising (Craigslist, Backpage, Facebook, Twitter, various local newspaper ads, blog and forum ads, crowdsourcing pages, university mailing lists) in two major waves throughout the US (93.2%) and Canada (6.8%). Participants were retained for analysis if they successfully registered and verified their smartphone and completed the screening and intake survey. Regarding the screening questions, participants were excluded if they fulfilled any of the following exclusion criteria (criteria-based percentages in parentheses): (a) younger than 18 years of age (0.5%), (b) not at all fluent in English (0.1%), (c) not living in the US or Canada (10.1%), (d) not owning a smartphone (0.8%), (e) not generally willing to respond to

multiple, short mobile surveys each day (3.3%). In addition, participants needed to complete a short smartphone compatibility test (see Hofmann & Patel, 2015). According to benchmarking data taken around the time the study was conducted, about 91% of respondents taking the test pass it (Hofmann & Patel, 2015). Finally, after their eligibility had been determined, participants needed to provide informed consent which 0.6% of eligible participants refused to do. The estimated number of eligible participants who did not complete the intake survey was 14%.

The final sample from these exclusion criteria was 1,252 (758 of whom provided data for the present punishment analyses). Regarding the highest level of education, 0.1% indicated “some high school,” 3.7% “completed high school,” 34.3% “some college,” 30.9% “completed college,” and 31.0% indicated “advanced/post-graduate studies.” Overall, 32.1% of participants indicated that they are currently a college student.

## **2. Type of Perpetrator and Closeness to Perpetrator Ratings**

To assess whether the desire to punish varies systematically as a function of how participants relate to the perpetrator of an immoral deed, we developed a coding scheme to assign open-ended text entries into 10 categories (overall valid text entries  $n = 1,360$ ): “stranger” (786), “professional relation,” (185), “no concrete person/entity (e.g., organization, corporation),” (160), “neighbor/acquaintance,” (74), “distant relatives (other than close family),” (25), “(close) family member,” (30), “friend,” (56), “partner/spouse” (15), “ex-partner,” (7), and “uncodeable/missing” (22). These assessments were made from the perspective of the participant (e.g., spouse would indicate the participant’s own spouse, not someone else’s). Two student assistants unfamiliar with the study and its hypotheses coded all responses according to the taxonomy. Interrater-agreement was very good, kappa = .94. A total of 53 cases of disagreement were resolved through discussion. The final  $n$ s for the ten categories are provided in the parentheses above. To investigate associations of perpetrator

category with moral punishment (see Model 1), we employed a set of eight effects-codes with the category “other” as the base category in the coding scheme.

To get a more proximal measure of social closeness to the perpetrator of the immoral deed, and since we did not assess closeness to perpetrator in the Everyday Morality Study, we presented a sample of 103 mturk participants from the United States with the list of nine content-related categories of people (excluding the category “uncodeable” from above) and asked them to “rate for each category of people how close or distant a typical person feels, on average, towards them. The categories were presented in random order and ratings were made on a scale from -3 (*very distant*) to +3 (*very close*). The average closeness ratings and their *SDs* are presented in Supplementary Table 1. Closeness ratings were then matched to each event in the dataset accordingly.

### **3. Type of Victim Ratings**

Victim information was assessed via a multiple choice selection from the following options: me; family member; partner; friend; boss; employee; teacher; student; stranger; group of people; an object; an animal; other). To summarize this information, reduce and largely mirror the categories used for perpetrator coding, we aggregated our participants’ initial victim category judgments as following: “employee,” “boss,” “teacher,” and “student” were assigned to the summary category “professional”; “group of people,” “an object,” and “an animal” were assigned to the summary category “No concrete person/other entity.” All remaining categories (stranger, family member, friend, self) were kept as is. Note also that, due to the nature of assessment, the category “family” could not be further decomposed into close and distal family subgroups as in the case of perpetrator information.

For multiple entries, we chose the more proximal social category (e.g., if both “stranger” and “friend” were selected, “friend” was chosen). Responses with only text entries provided under the category “other” (n = 173), were coded and re-assigned to existing

categories plus the additional category “neighbor/acquaintance” or marked as “uncodeable/missing” (interrater kappa = .78). The final frequency breakdown of victim category information was as follows: stranger (388), professional (173), no concrete person/other entity (419), neighbor/acquaintance (9), family member (63), friend (92), partner/spouse (27), self (173), uncodeable/missing (16). Regarding closeness ratings, because participants had provided their own, self-reported rating of closeness to the victim, we used this proximal measure in analyses and did not assess external closeness ratings as in the case of perpetrators.

#### **4. Moral Foundation Codings**

We used our prior existing codings of eight moral foundations based on participants’ short open text descriptions of events, as described in detail in Hofmann et al., (2014). In light of the number of missing codings for some immoral acts (3.5%), we decided to include moral foundations as part of a sensitivity analysis (summarized in the main text and reported in full in Supplementary Table 2), to explore whether (a) type of moral foundation accounts for additional variance in the desire for punishment when added over and above the other predictors in the model and whether (b) any of the conclusions regarding the remaining variables are affected by controlling for moral foundations.

#### **5. Demographic and Dispositional Measures**

Demographic information (sex, age, religiosity, political orientation) from the intake survey was available for 100% of the sample, dispositional data regarding moral identity, intuition, and moral conviction was available for 99.5%, 99.5%, and 98.2% of participants, respectively.

*Religiosity.* Religiosity was assessed with the item “How religious are you?” on a scale from 1 [*not at all*] to 7 [*very much*].

*Political orientation.* Political orientation was assessed with a hybrid measure incorporating a scale from 1 (*very liberal*) to 7 (*very conservative*) with 4 as the middle point (“*middle of the road*”), as well as the additional response options “*libertarian*”, “*other*”, and “*apolitical*” (“*don’t know/not political*”). To investigate the role of political orientation as a categorical variable, we employed a set of five effects-codes (liberal [values from 1 to 3], moderate [value of 4], conservative [values from 5-7], libertarian, apolitical) with the category “other” as the base category in the coding scheme.

*Moral Identity.* Dispositional moral identity was assessed with the 13-item version of the Aquino and Reed scale (2002; Table 3). The scale measures the self-importance of moral identity through a combination of internalization and symbolic demonstration of one’s moral identity. The participant instructions were slightly modified from the original to (emphasis added):

Below are some characteristics that might describe a person: *moral, ethical, principled, upright, prepared to take a stand for beliefs, a person of conscience and integrity*. The person with these characteristics could be you or it could be someone else. For a moment, visualize in your mind the kind of person who has these characteristics. Imagine how that person would think, feel, and act. When you have a clear image of what this person would be like, indicate how much you agree or disagree with each of the following statements.

Responses were made on 7-point scales from 1 (*very much disagree*) to 7 (*very much agree*) regarding 13 statements such as “It would make me feel good to be a person who has these characteristics” or “I am actively involved in activities that communicate to others that I have these characteristics” (Aquino & Reed, 2002), forming a very reliable composite ( $\alpha = .86$ ). For exploratory reasons described in the main text, the seven original internalization and the six original symbolization items proposed by Aquino & Reed (2002) were combined into

two separate subscales ( $\alpha = .87$  and  $\alpha = .80$ , respectively; subscale intercorrelation  $r = .37$ ,  $p < .001$ ).

*Generalized Moral Conviction.* Moral conviction refers to the degree to which people experience attitudes and policy preferences as indicative of their core beliefs about what is morally right or wrong (Skitka & Morgan, 2014). Attitudes held with strong moral conviction have been shown to be distinct from strong but non-moral attitudes in that they are more likely to be experienced as universally applicable rather than culturally variable, as carrying a strong prescriptive and proscriptive force, and as having deeper ties to emotion (e.g., Skitka, 2010; Skitka, Bauman, & Sargis, 2005; Skitka, Washburn, & Carsel, 2015). Work showing that moral conviction predicts stronger emotional reactions and greater acceptance of violence and/or collateral damage with regard to morally convicted ends suggests somewhat greater average levels of the desire to punish experienced transgressions. Traditionally, however, moral conviction has been measured with reference to a specific attitude object or political issue (e.g., Skitka et al., 2005). As this approach was not practical with the present idiographic approach, we deviated from this approach and explored whether moral conviction can also be assessed reliably in a more generalized way and whether generalized moral conviction accounts for systematic variance in the desire to punish.

Specifically, we sought to develop a broad measure of “generalized” moral conviction for exploratory purposes, consisting of three items tapping into the tendency to base everyday thoughts and feelings on one’s core moral beliefs and convictions: (1) “How much are your thought and feelings about various social problems and issues of the day tied to your core moral beliefs and convictions?” (2) “In daily life, how much are your thoughts and feelings about other people’s actions and behaviors tied to your core moral beliefs and convictions?” (3) “In daily life, how much are your thoughts and feelings about your own actions and behaviors tied to your core moral beliefs and convictions?” Responses were made on 5-point

scales from 0 (*not at all*) to 4 (*very much*). Internal consistency of the three-item measure was acceptable ( $\alpha = .69$ ).

*Moral Intuition.* A deeply-rooted debate in the field of morality is about whether moral judgments are better described as intuitive (Haidt, 2001) or reasoned (Kohlberg, 1976). The degree to which people base their moral judgments more on intuition versus reason may vary from individual to individual (Hofmann & Baumert, 2010). Given our interest in the desire or want to punish, an experience that arguably has a strong emotional component, we tested the hypothesis that moral intuitionists may feel a stronger desire to punish the perpetrators of immoral acts they encounter than those who may respond to these events in a more “cool”, reflective manner. To develop a broad measure of moral intuition, we created two items tapping into the tendency to base one’s moral evaluations and judgments on intuition: (1) “I can usually feel when a person is right or wrong even if I can't explain how I know.” (2) “When it comes to judging whether something is right or wrong, I can usually rely on my ‘gut feelings’.” Responses were made on 5-point scales from 1 (*extremely uncharacteristic of me*) to 5 (*extremely characteristic of me*) ( $\alpha = .76$ ).

## 6. Supplementary Table 1

*Means and Standard Deviations for Social Closeness*

*Ratings of Perpetrator Categories*

<i>Category</i>	<i>Mean</i>	<i>SD</i>
Partner/Spouse	6.48	1.24
Family Member	6.07	1.24
Friend	5.74	0.97
Acquaintance/Neighbour	4.05	1.16
Professional	3.72	1.14
Distant Family	3.49	1.41
Ex-Partner	3.05	1.58
No Concrete Person/Other Entity	2.31	1.33
Stranger	1.90	1.28

*Note:*  $N = 103$  independent raters recruited via mTurk.



7. **Supplementary Table 2.** *Sensitivity analysis controlling for moral foundations codings: Multilevel regression models predicting desire for punishment from occasion-specific variables (perceived wrongness, perspective, type of actor, and moral foundations) at Level 1 and demographic/dispositional variables at Level 2.*

Predictor	Model 1 (base predictors)			Model 2 (closeness data)			Model 3 (plus dispositional)		
	<i>B/F</i>	<i>SE (B)</i>	<i>p</i>	<i>B</i>	<i>SE (B)</i>	<i>p</i>	<i>B</i>	<i>SE (B)</i>	<i>p</i>
Intercept	2.82	0.16	< .001	3.03	0.07	< .001	2.98	0.09	< .001
<i>Level 1: Event Predictors</i>									
Perceived wrongness	0.55	0.06	< .001	0.53	0.06	< .001	0.56	0.06	< .001
Perspective	$F(2, 1236) = 8.95$		< .001	$F(2, 1236) = 10.93$		< .001	$F(2, 1223) = 7.81$		< .001
Type of perpetrator (rating)	$F(9, 1225) = 4.25$		< .001						
Type of victim (rating)	$F(8, 1198) = 0.58$		.798						
Moral Foundations	$F(7, 1224) = 4.45$		< .001	$F(7, 1199) = 5.57$		< .001	$F(7, 1188) = 6.20$		< .001
Closeness to perpetrator (rating)				-0.22	0.05	< .001	-0.23	0.05	< .001
Closeness to victim				0.09	0.03	< .001	0.09	0.03	.001
<i>Level 2: Demographic and Dispositional Predictors</i>									
Sex							0.02	0.05	.744
Age							0.02	0.00	< .001
Religiosity							-0.03	0.03	.271
Political Orientation							$F(5, 642) = 3.80$		< .001
Moral identity							0.18	0.07	.006
Moral conviction							0.02	0.06	.773
Moral intuition							0.08	0.05	.087

*Note:* Continuous predictors are displayed with their regression coefficient (*B*) and *SE*, categorical predictors with three or more categories with their fixed effect *F*-value. Sex was effects-coded (-1 = male; 1 = female). Type of perpetrator, type of victim, closeness to perpetrator, and moral foundation were rated by independent coders or participants, respectively (see main text), closeness to victim was self-reported.

### 8. Supplementary Table 3

*Zero-Order Correlations Among Desire for Punishment, Moral Emotions, Moral Self-Worth, and Momentary Well-Being*

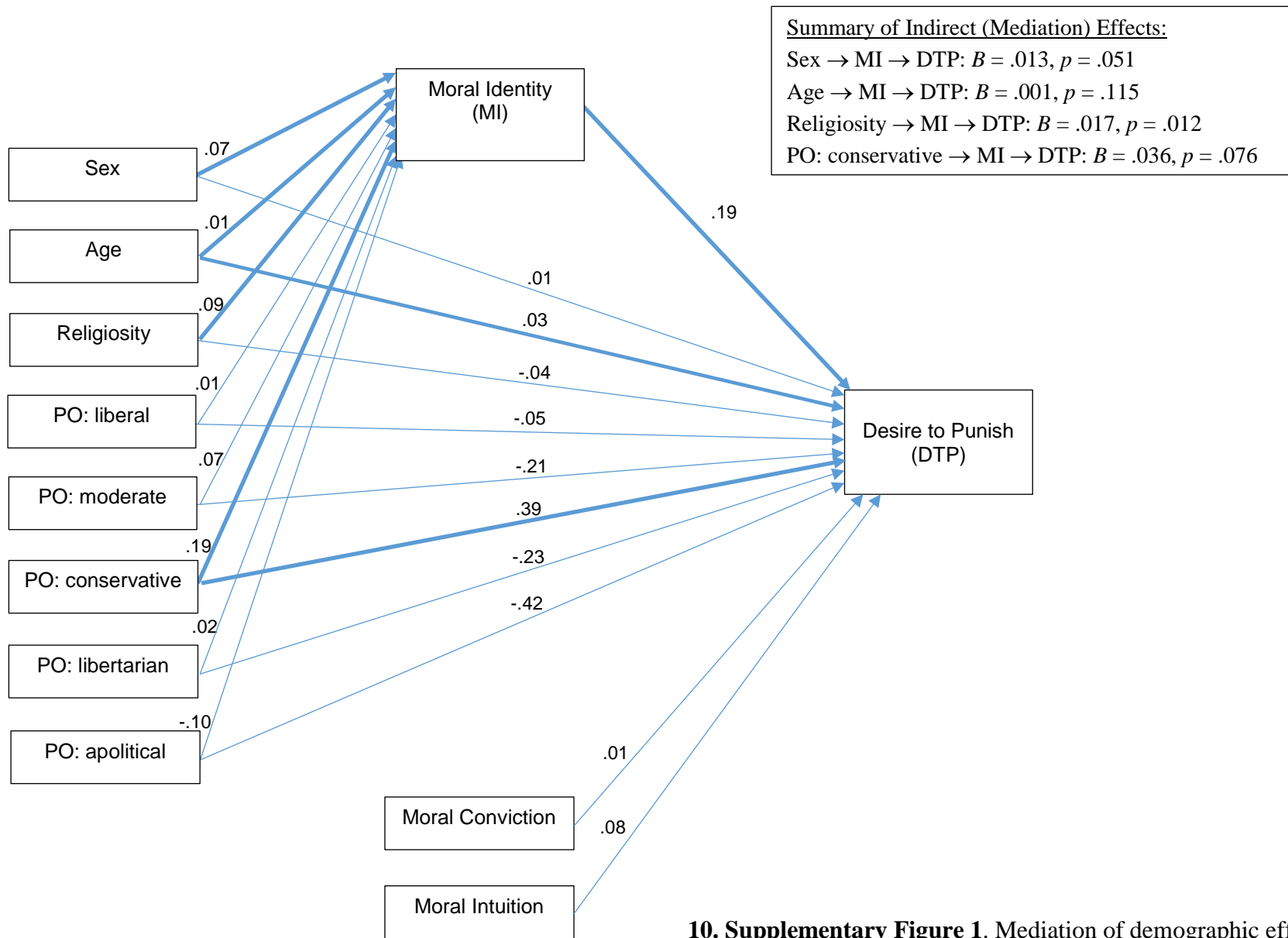
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
(1) Desire to punish	—										
(2) Anger	.48	—									
(3) Disgust	.48	.73	—								
(4) Contempt	.37	.62	.55	—							
(5) Embarrassment	.09	.31	.29	.26	—						
(6) Guilt	.00	.18	.11	.13	.54	—					
(7) Shame	.13	.33	.32	.23	.68	.62	—				
(8) Pride	-.03	-.24	-.24	-.11	-.11	.10	-.09	—			
(9) Elevation	.04	-.07	-.07	-.04	.03	.17	.12	.55	—		
(10) Gratitude	.01	-.22	-.21	-.18	-.02	.13	-.03	.64	.44	—	
(11) Moral self-worth	.24	.08	.13	.06	-.10	-.23	-.14	.20	.09	.15	—
(12) Momentary well-being	-.12	-.37	-.28	-.30	-.20	-.18	-.21	.27	.18	.29	.27

*Note.* Correlations were computed using the `cor_auto` function in R which selects the appropriate correlation method (Pearson, polyserial, polychoric) for each pair of variables.

## 9. Supplementary Table 4

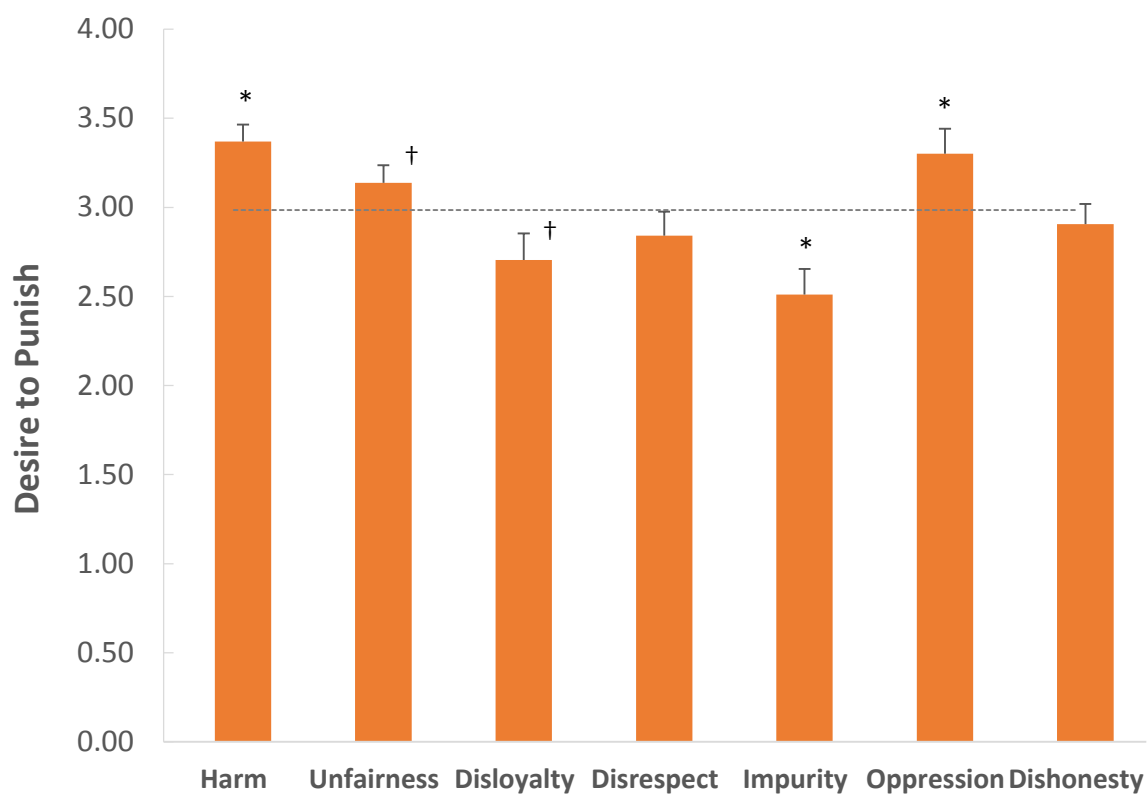
### *Multiple Regression Models Predicting Desire to Punish from Moral Emotions*

Predictor	Model 1			Model 2 (all emotions)		
	<i>B</i>	<i>SE</i>	<i>p</i>	<i>B</i>	<i>SD</i>	<i>p</i>
Intercept	3.22	0.05	< .001	3.25	0.06	< .001
Anger	0.26	0.06	< .001	0.25	0.06	< .001
Disgust	0.23	0.05	< .001	0.24	0.07	.001
Contempt	0.21	0.05	< .001	0.20	0.06	.002
Embarrassment				-0.09	0.06	.154
Guilt				-0.07	0.08	.394
Shame				0.04	0.07	.627
Pride				-0.05	0.08	.542
Elevation				-0.11	0.08	.141
Gratitude				0.00	0.07	.945



**10. Supplementary Figure 1.** Mediation of demographic effects DS12

(building on Model 3). Thick lines indicate significant pathways ( $p < .05$ ).



**11. Supplementary Figure 2.** Desire to punish by moral foundation of the immoral act (estimated from Model 3 in Supplementary Table 2). Asterisks indicate significant deviations from the grand average (vertical line) at  $p < .05$  ( $† p < .10$ ). Error bars indicate standard errors. Base category (lack of self-restraint) not shown.

## 12. References

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