Selective Exposure to Deserved Outcomes

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Abstract

Research has shown that people often reinterpret their experiences of others' harm and suffering to maintain the functional belief that people get what they deserve (e.g., by blaming the victim). Rather than focusing on such reactive responses to harm and suffering, across 7 studies we examined whether people selectively and proactively choose to be exposed to information about deserved rather than undeserved outcomes. We consistently found that participants selectively chose to learn that bad (good) things happened to bad (good) people (Studies 1 to 7)—that is, they selectively exposed themselves to deserved outcomes. This effect was mediated by the perceived deservingness of outcomes (Studies 2 and 3), and was reduced when participants learned that wrongdoers otherwise received "just deserts" for their transgressions (Study 7). Participants were not simply selectively avoiding information about undeserved outcomes but actively sought information about deserved outcomes (Studies 3 and 4), and participants invested effort in this pattern of selective exposure, seeking out information about deserved outcomes even when it was more time-consuming to find than undeserved outcomes (Studies 5 and 6). Taken together, these findings cast light on a more proactive, anticipatory means by which people maintain a commitment to deservingness.

Keywords: information seeking; selective exposure; deservingness; belief in a just world

Selective Exposure to Deserved Outcomes

A long tradition of research into the psychology of justice has demonstrated that people care about the relationship between the value of people and the value of their outcomes—that is, they care about deservingness (Sabbagh & Schmitt, 2016). Judgments of what is deserved or undeserved generally follow from the subjective perception of the relation between the value of people's actions and the value of their outcomes, such that a good (bad) person receiving a negative (positive) outcome is perceived as undeserved, whereas the same good (bad) person receiving a positive (negative) outcome is seen as deserved (see Feather, 1999; Hafer, 2011; Lerner, Miller, & Holmes, 1976).

Lerner (1977) argued that people are motivated to believe that they live in a world where people generally get what they deserve, because doing so enables them to commit to long-term goals with confidence. Because believing in a "just-world" is functional, people often reinterpret their experiences of unjust events to maintain perceptions of deservingness (for reviews, see Ellard, Harvey, & Callan, 2016; Hafer & Bègue, 2005). The classic example of this process is the derogation of innocent victims (Lerner & Simmons, 1966), but recent research has cast light on a variety of other ways people maintain a commitment to justice and deservingness (Callan & Ellard, 2010), including misremembering details of past injustices (Callan, Kay, Ellard, & Davidenko, 2009; Marsh & Greenberg, 2006), perceiving future benefits for a victim's suffering (Hafer & Gosse, 2011; Harvey & Callan, 2014), and offering to help victims (Bal & van den Bos, 2015; Harvey, Callan, & Matthews, 2015).

One feature cutting across these strategies for maintaining a commitment to justice and deservingness is that they involve people's *reactive* responses to harm and suffering. Take, for example, immanent justice reasoning, which involves believing that a bad outcome was *caused* by someone's prior immoral behavior, however physically implausible such a causal connection might be (Callan, Sutton, Harvey, & Dawtry, 2014). Harvey and Callan (2014) found that participants causally attributed a freak car accident to the victim's prior conduct to a greater extent when he

previously stole from children (vs. did not steal). Further, participants' beliefs about what he deserved mediated these causal attributions—bad outcomes happen to bad people because they deserve them. Through immanent justice reasoning, then, people are, *in retrospect*, making sense of a random bad outcome by locating its "cause" in the prior misdeeds of the unfortunate victim.

But a concern for deservingness may also establish an active, anticipatory preference to see deserved outcomes. It is well-documented that during information seeking, people tend to selectively expose themselves to information that is consistent rather than inconsistent with their attitudes, beliefs, and decisions (for reviews, see Frey, 1986; Hart, Albarracín, Eagly, Brechan, Lindberg, Lee, & Merrill, 2009; Smith, Fabrigar, & Norris, 2008). In a typical selective exposure experiment, participants are asked to commit to an attitude, opinion, or decision regarding an issue and then are given the opportunity to receive additional information concerning the issue. The additional information is usually presented as a list of short statements, commentaries, or abstracts summarizing opposing perspectives on the issue (ostensibly from previous participants, experts, news articles, etc.). For example, Jonas, Schulz-Hardt, Frey, and Thelan (2001) found that participants tended to choose additional information that supported rather than conflicted with their initial "policy" decision concerning whether the government should fund alternative healing methods or only traditional medicine. This tendency for people to seek out confirmatory information has been found in a variety of domains, including social stereotypes (e.g., Johnston, 1996), smoking activity (e.g., Canon & Matthews, 1972), investment decisions (Jonas & Frey, 2003), attitudes towards toilet training (Maccoby, Maccoby, Romney & Adams, 1961), attitudes toward capital punishment (Smith, Fabrigar, Powell, & Estrada, 2007), and religious beliefs (McFarland & Warren, 1992).

Based only on the knowledge of another person's moral character or conduct, observers may be similarly biased toward receiving outcome information that is consistent with what that person deserves. For example, people might prefer to learn that a serial rapist was crippled in a car crash more than learning that he won a lottery, and they might go to some lengths to do so,

presumably because rapists are more deserving of being injured than they are of winning lotteries. Likewise, people might prefer to learn that a charity worker won a lottery more than learning that he was crippled in a car crash, again because of their concerns about deservingness. Such selective exposure to bad (good) outcomes for bad (good) people points to a more proactive, anticipatory route for people to maintain a sense of justice and deservingness than has been previously recognized. Specifically, selective exposure to deserved outcomes might help people navigate through the world in a way that sustains the assumption that it is a just and fair place where people get what they deserve. Indeed, if people selectively choose to learn about deserved rather than undeserved outcomes, then they can shield themselves from the potentially unsettling prospect that the world is not so fair, just, and non-random after all.

Based on dissonance theory (Festinger, 1957), the main explanation for selective exposure to congenial information is defense motivation, or the desire to defend one's beliefs, attitudes, or decisions (see Hart et al., 2009). According to this account, people selectively expose themselves to information congenial to their prior attitudes and decisions to reduce or avoid the potential concern associated with the possibility that they might be wrong. In their meta-analysis, Hart et al. (2009) found that the effects of selective exposure to confirmatory information increased as a function of factors that increase defense motivation, such as making decisions under high (vs. low) choice, dedicating time and effort to make a decision, justifying decisions to others, and reporting high commitment to a belief or decision. What we are proposing here—that people selectively expose themselves to deserved outcomes—is similar insofar as people are motivated to defend the belief that people get what they deserve (Lerner, 1980). Indeed, believing in a just world might be important enough to people that simply passively receiving information about another person's moral character or conduct may be sufficient to instigate an active search for deserved outcomes when there is an opportunity to do so.

Building on procedures and measures from the selective exposure literature, we tested the general hypothesis that people will selectively choose to learn that bad (good) things happened to bad (good) people. The results of a recent eye-tracking study lend weight to this hypothesis: Callan, Ferguson, and Bindemann (2013) found that the good or bad moral conduct of characters portrayed within audio-visual scenes biased participants' anticipatory gaze preferences to images of good or bad outcomes just before the actual outcomes were revealed. These results suggest that people expect, via their eye-movements, bad (good) things to happen to bad (good) people. But whether people selectively *choose* to learn about, and will consciously and actively search for, outcomes that are evaluatively consistent with the moral character or conduct of others has yet to be examined. Specifically, although implied in their work, Callan et al. did not directly show that people's eye-gaze preferences for good (bad) outcomes occurring to good (bad) people were specifically due to their concerns about deservingness, nor did their eye-tracking approach allow them test predictions about whether people might incur some cost to selectively choose to receive additional information about deserved outcomes. We therefore extended previous research by examining (a) the actual choices people make when faced with the knowledge that someone is morally good or bad; (b) whether people might incur some cost, by way of their time, to receive deservingness-congruent outcome information (Studies 4 to 6; cf. Frey, 1981); and, importantly, (c) whether these selective exposure effects occur because of people's concerns about deservingness (Studies 2, 3, and 7).

Sampling

Across studies the minimum required sample sizes were fixed ahead of data collection; however, the final sample sizes were not completely predetermined due to the removal of some participants (e.g., for failing story comprehension check questions; see below). Power analyses showed that our samples had at least 80% power (usually much higher) to detect "medium" effect sizes (e.g., $dz = .50$ for within-subjects contrasts; two-tailed, $\alpha = .05$). We report all measures, manipulations, and exclusions in these studies.

STUDY 1

In Study 1, we presented participants with a series of short narratives describing different people engaging in either morally good or bad behavior. We then asked participants to rate the extent to which they wanted to learn about different possible good and bad outcomes occurring to the target individuals. On the basis of the foregoing analysis, we predicted that participants would want to read more about the deservingness-congruent outcomes than the deservingness-incongruent outcomes.

Method

Participants

Participants from the United States were recruited through Amazon's Mechanical Turk (N = 48; 54.2% females; M_{age} = 36.52; SD_{age} = 12.80).

Materials and procedure

We told participants the study was about "investigating the processing of narrative information" and that they would rate (cf. Brannon, Tagler, & Eagly, 2007; Lowin, 1969) the extent to which they wanted to read different possible conclusions to a number of short stories.

Adapted from Callan et al. (2013), and employing a fully within-subjects design, we presented participants with 4 short stories (see online supplemental materials for all of the scenarios and items we used across studies): 2 describing a good person (e.g., Jenny saved a drowning puppy) and 2 describing a bad person (e.g., Sally stole from a charity collection box). For example, for one of the stories participants read:

> A week ago, Jenny was walking along the River Wye when she spotted a puppy drowning in the river. Risking her own life, Jenny dived into the river and saved the puppy from drowning.

Following each story, participants read two sentences representing additional pieces of information about the target individuals. One sentence represented a good outcome (e.g., "One week later, Jenny was sitting in her living room when she received news that she had won a new car in a sweepstake she had entered") and the other represented a bad outcome (e.g., "One week later,

Jenny was sitting in her living room when she received news that her husband was in a terrible car accident").[1] Participants were asked to rate the extent to which they wanted to read these endings to the stories (1 = *I do not want to read these details later on in the survey* to 7 = *I want to read these details later on in the survey*), ostensibly because their ratings would determine the conclusions to the stories that they would actually read and evaluate. The stories were presented to participants in a fully counter-balanced random order.

Results and Discussion

Participants' ratings of wanting the outcome information were submitted to a linear mixed effects model using the lme4 package (Bates, Maechler, Bolker, & Walker, 2015, version 1.1-10) in R (R Core Team, 2015, version 3.2.0). This form of regression allows us to model each participant's 8 separate responses as a function of fixed and random effects, rather than requiring us to average the two examples of good/bad people to form a single observation per cell of the design, as in traditional ANOVA. The model included fixed effects for Person (good vs. bad, coded +1 and -1), Outcome ratings (good vs. bad, coded +1 and -1) and the Person X Outcome interaction. We included random intercepts for participants and scenarios, and random slopes by participants for the effects of Person, Outcome, and Person X Outcome and by scenarios for the effect of Outcome. That is, we allowed both main effects and the interaction to vary across participants, and allowed the effects of Outcome to vary across scenarios. Note that, because each scenario is only ever associated with one type of person, we did not include by-scenario random slopes for Person or the interaction. Random effects were uncorrelated (Barr, Levy, Scheepers, & Tily, 2013); including the correlation terms led to overfitting and a failure to converge. We used Satterthwaite approximations to calculate *p*-values using the lmerTest package (Kuznetsova, Brockhoff & Christensen, 2015). Analyses revealed a significant Person X Outcome interaction, $b = 0.52$; 95% CI of 0.31, 0.73; $t = 4.77$, $p < .001$ (see Figure 1). Neither main effect achieved statistical significance (both *p*s > .25). Analysing the data

[1] In a separate validation study ($N = 49$), we found that for each of the scenarios we used in Study 1, the good (bad) target characters were perceived as more deserving of the good (bad) outcomes (all *p*s < .001, *dz*s > .68). Details and full statistical reporting of this validation study are presented in the supplementary materials.

with a conventional 2x2 ANOVA after taking the mean of the two scenarios for a given Person type yielded exactly the same conclusions.

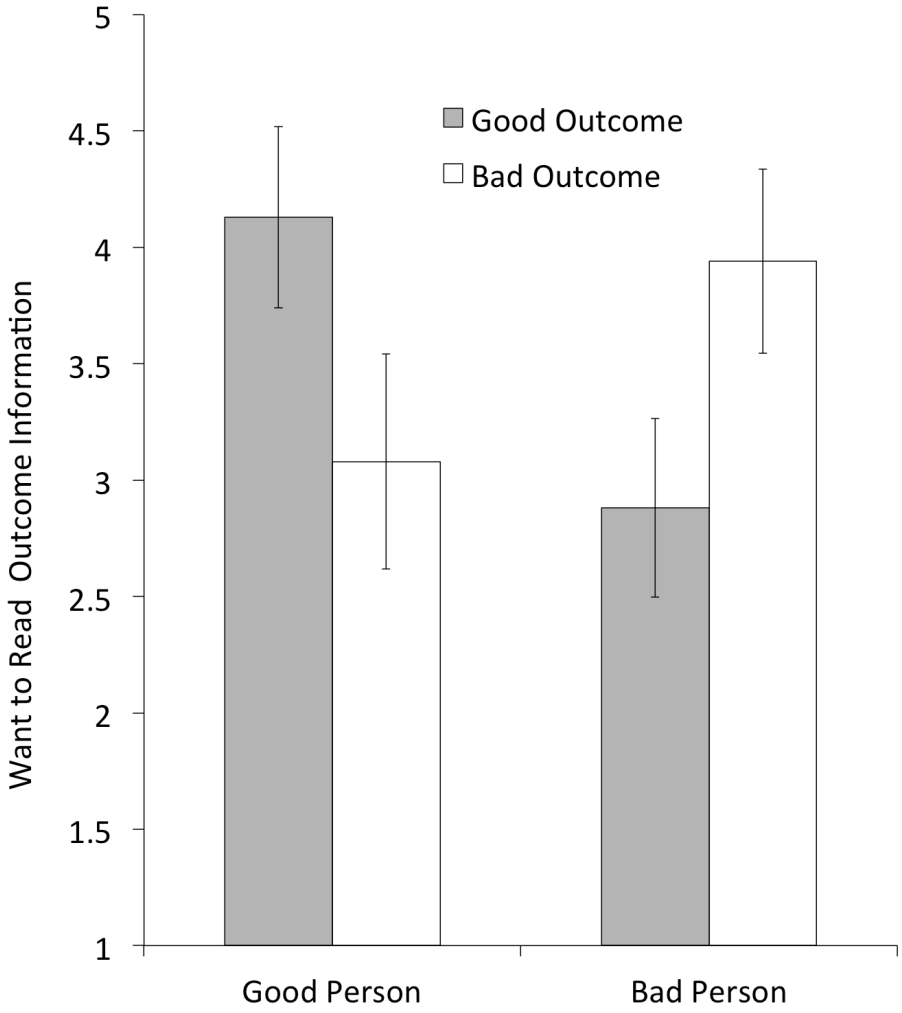

***Figure 1*.** The extent to which participants wanted to read outcome information as function of the value of the targets' moral value and the value of the outcome information (Study 1). Error bars show 95% CIs of the means.

Follow-up analyses revealed that participants wanted to read the good outcome information more than the bad outcome information after first reading about a good person, *B* = 0.513; 95% CI of 0.305, 0.757; *t* = 6.18, *p* < .001 (*r* between dependent measures = -.09). When reading about a bad person, participants wanted to read the bad outcome information more than the good outcome information, *B* = -0.503; 95% CI of -0.742, -0.263; *t* = -5.75, *p* < .001 (*r* between dependent measures = .01). Therefore, participants wanted to read conclusions to the narratives that were consistent with what the targets' deserved—bad (good) things happen to bad (good) people.

STUDY 2

The purpose of Study 2 was two-fold: (a) to replicate our Study 1 findings using a between- rather than within-subjects design (with the former being less susceptible to carry- over or participant expectation effects), and (b) to examine the mediating role that perceived deservingness plays in the effects of a target person's moral value on participants' selective exposure to good and bad outcome information.

Method

Participants

Participants from the U.S.A. were recruited online through MTurk (N = 138; 31.2% females; M_{age} = 30.45; SD_{age} = 10.07). To ensure independence of the data, two additional participants were not included in analyses because of duplicate IP addresses (we retained the data for only the first occurrence of each duplicate IP).

Materials and procedure

Study 2 was similar to Study 1 but we adopted a between-subjects design such that each participant only read and responded to one short story. Participants first read about a man, named Geoff, who either threw a puppy in a river (bad person) or saved a puppy from drowning in a river (good person):

> (*good person*) A week ago, Geoff was walking along the River Wye when he spotted a puppy drowning in the river. Risking his own life, Geoff dived into the river and saved the puppy from drowning.
>
> (*bad person*) A week ago, Geoff was walking along the River Wye when he spotted a puppy along the bank of the river. With no regard for its life, Geoff picked up the puppy and threw it in the river.

Participants were then asked to answer questions about "the possible conclusions to this narrative". Participants first rated the degree to which they believed Geoff deserved to experience each of two outcomes: "To what extent do you believe Geoff deserves to win a new car in a sweepstake he enters?" and "To what extent do you believe that Geoff deserves to be in a terrible car accident that leaves him in hospital in a serious condition?" (1 = *Not at all deserving* to 7 = *Very*

deserving). Next, mirroring the outcomes for the deservingness ratings, participants rated the extent to which they wanted to read about Geoff receiving two outcomes: winning a car in a sweepstake and being in a terrible car accident (1 = *I do not want to read these details later on in the survey*, 7 = *I want to read these details later on in the survey*).

Results and Discussion

Because there is only one observation per condition from each participant, and only one scenario, we analysed the data with a conventional ANOVA rather than attempting to fit a mixed-effects model. A 2 (person: bad vs. good) by 2 (outcome information: bad vs. good) mixed ANOVA with Person as the between-subjects factor revealed a significant interaction for participants' judgments of deservingness, $F(1, 135) = 252.91$, $p < .001$, $\omega^2 = .63$ (one participant did not answer the deservingness questions).

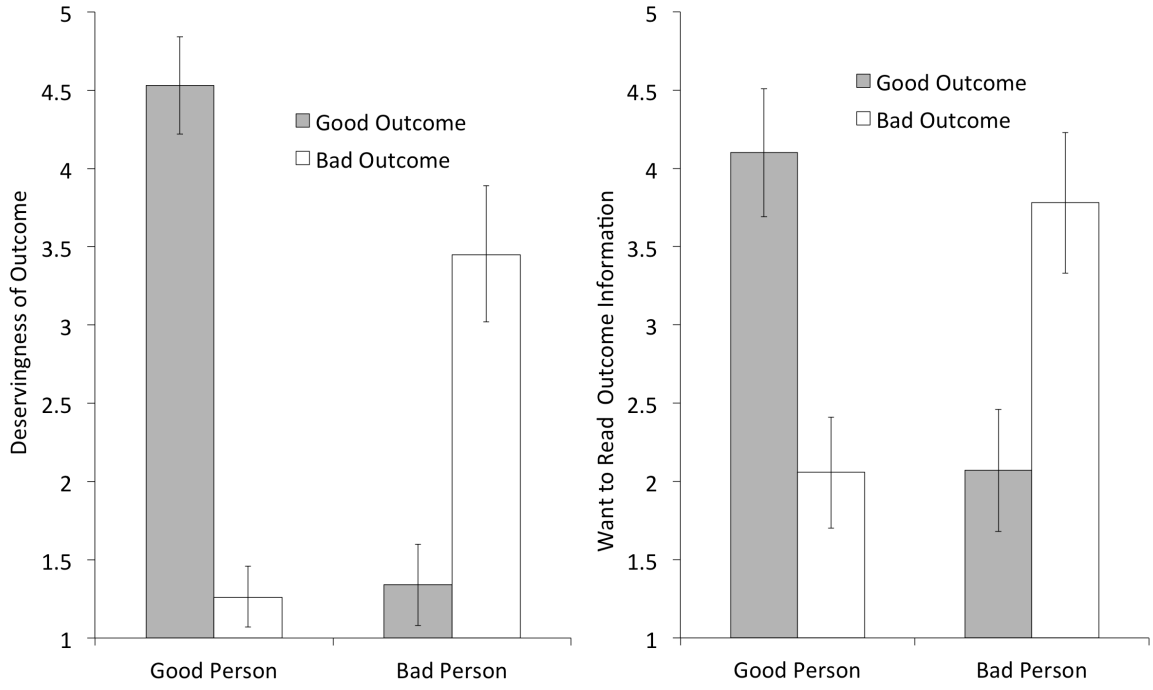

***Figure 2*.** Perceptions of deservingness (left panel) and ratings of wanting to read outcome information (right panel) as function of the value of the targets' moral value and the value of the outcome information (Study 2). Error bars show 95% CIs of the means.

Shown in Figure 2 (left panel), participants in the good person condition rated Geoff as more deserving of the good outcome than the bad outcome, $t(69) = 17.55$, $p < .001$, $dz = 2.10$ (r between

repeated measures = -.034). Conversely, participants in the bad person condition rated Geoff as more deserving of the bad outcome than the good outcome, $t(69) = -7.37$, $p < .001$, $dz = -0.90$ (r between repeated measures = -.306). There were also significant main effects of Person and Outcome Information (both ps < .01).

There was also a significant interaction for participants' ratings of how much they wanted to read the potential outcome information, $F(1, 136) = 83.01$, $p < .001$, $\omega^2 = .37$. Shown in Figure 2 (right panel), participants in the good person condition wanted to read the good outcome information to a greater extent than the bad outcome information, $t(69) = 6.52$, $p < .001$, $dz = 0.78$ (r between repeated measures = -.344). Participants in the bad person condition wanted to read the bad outcome information more than the good outcome information, $t(67) = -6.46$, $p < .001$, $dz = -0.78$ (r between repeated measures = .211). Neither main effect achieved statistical significance (ps > .37).

To examine whether participants' perceptions of deservingness mediated the effect of the target's moral worth on their wanting to read good versus bad outcome information, we first computed difference scores for both participants' ratings of deservingness and their ratings of wanting of the outcome information; positive values represent participants' belief that Geoff deserved a good outcome more than a bad outcome and that they wanted to review the good outcome information more than the bad outcome information. These difference scores were highly correlated, $r = .74$, $p < .001$ (pooled across conditions), such that the more participants believed Geoff deserved a good (vs. bad) outcome, the more they wanted to review good (vs. bad) outcome information later in the survey.

Bootstrapped analyses (Preacher & Hayes, 2008; 10,000 resamples) revealed that perceived deservingness mediated the effect of the target's moral worth (good = 1 vs. bad = -1) on the relative ratings of wanting good vs. bad outcome information (indirect effect = 1.696, 95% Bias Corrected and Accelerated Confidence Interval [BCa CI] of 1.147, 2.24; see Figure 3). These results suggest that

one of the reasons why participants wanted to review good (bad) outcome information for a good (bad) person was because they believed he deserved it.

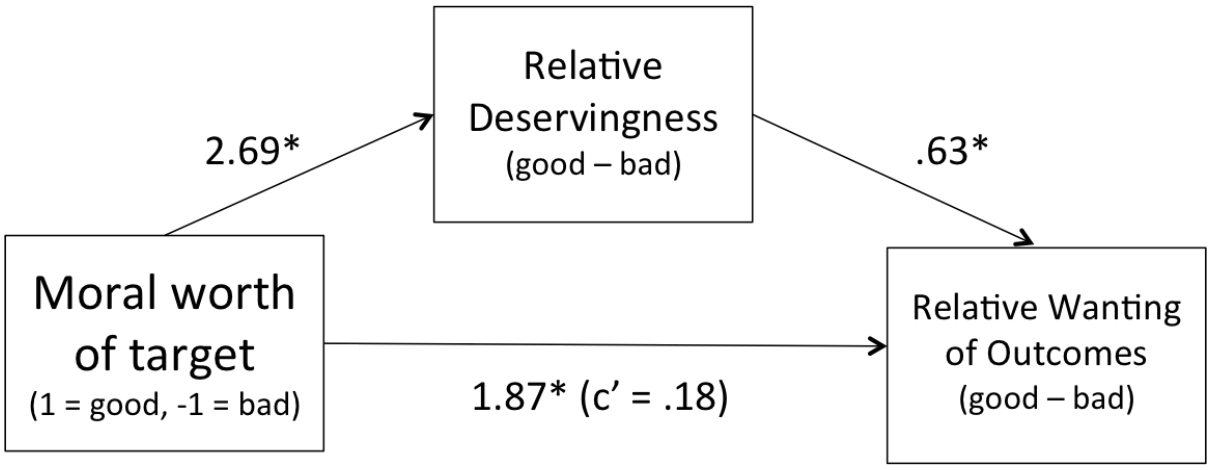

Figure 3. The influence of the moral worth of the target character on selective exposure of the good (vs. bad) outcomes through perceived deservingness of the good (vs. bad) outcomes. Values show unstandardized regression coefficients. * $p < .05$

STUDY 3

Studies 1 and 2 found that participants wanted to expose themselves to outcome information that was evaluatively congruent with what other people deserved. In Study 3, we aimed to replicate these findings using a different selective exposure paradigm. Specifically, rather than having participants rate the extent to which they wanted to receive good and bad outcome information, we asked them to choose among several different good and bad outcomes to review (cf. Jonas, et al., 2001). We also explored the interplay between selective exposure and selective avoidance by asking participants to separately choose the outcomes they wanted to read and the outcomes they *did not* want to read (cf. Frey & Wicklund, 1978, Rhine, 1967). One possibility is that rather than selectively seeking outcome information that is congruent with what others deserve (e.g., that a charity worker won the lottery), people might selectively *avoid* outcome information that conflicts with their need to see that people get what they deserve (e.g., that a charity worker was crippled in a car crash). Of course, selective exposure and selective avoidance could be opposite sides of the same coin insofar as both enable people to maintain the assumption that people get what they deserve. Like Study 2,

we also asked participants to rate the extent to which the target person deserved various good and bad outcomes as a potential mediator of selective exposure and selective avoidance.

Method

Participants

Participants from the U.S.A. were recruited online through MTurk (N = 137; 46% females, 0.7% unreported; M_{age} = 33.57; SD_{age} = 11.68). Four additional participants were not included in analyses because of duplicate IPs (n = 2) or failing a simple story comprehension check ("In the story you read at the beginning of the survey, what did Chris do to the puppy?"; n = 2).

Materials and procedure

Like Study 2, participants read a story about a person (the name Chris was used in Study 3) who either drowned a puppy in a river (bad person) or saved a puppy from drowning in a river (good person). After reading the story, participants were asked, "To what extent do you believe Chris deserves to…" and then saw a list of 8 outcomes that they were asked to rate on a 7-point scale (1 = *Not at all deserving* to 7 = *A great deal deserving*). Of the 8 outcomes, 4 were bad outcomes (α = .98): "…be injured in a car accident", "…be fired from his job", "…contract a major illness" and "have his apartment destroyed by a flood". The other 4 outcomes were good outcomes (α = .98): "…win $100,000 playing a scratchcard lottery ticket", "…have his stocks and shares skyrocket", "…be given a promotion at work" and "…win a luxury cruise trip".

Participants then saw a list of 8 possible outcomes to the story about Chris, which were identical to the outcomes participants rated in terms of his deservingness (e.g., injured in a car accident). We instructed participants to select only 2 of the outcomes they would "DEFINITELY" want to read later in the survey and only 2 outcomes that they would "DEFINITELY NOT" want to read (i.e., we imposed information limits, see Fischer, Jonas, Frey, & Schulz-Hardt, 2005). We randomized the order of the questions so participants were either asked to choose among the "definitely want" outcomes first or the "definitely not want" outcomes first.

Results and Discussion

There was a significant Person X Outcome Information interaction for participants' judgments of deservingness, $F(1, 134) = 306.35$, $p < .001$, $\omega^2 = .69$. Participants in the good person condition rated Chris as more deserving of the good outcomes ($M = 5.08$, $SD = 1.67$) than the bad outcomes ($M = 1.27$, $SD = 0.74$), $t(68) = 16.23$, $p < .001$, $dz = 1.95$ (r between repeated measures = -.193). Participants in the bad person condition rated Chris as more deserving of the bad outcomes ($M = 4.50$, $SD = 2.31$) than the good outcomes ($M = 1.33$, $SD = 0.83$), $t(67) = -9.79$, $p < .001$, $d = -1.19$ (r between repeated measures = -.28). Neither main effect achieved statistical significance (ps > .11)

We analysed the number of bad outcomes participants wanted to read (which could range from 0 to 2) between the bad and good person conditions. Because we fixed the total number of choices participants could make to 2, and there were an even number of good and bad outcome options, the results are identical using the number of good outcomes participants chose as the dependent variable (except for opposite sign). Thus, we report only the results for the number of bad outcome participants wanted to read (and, per below, only the good outcome they did not want to read).

Participants in the bad person condition chose to read more bad outcomes later in the survey ($M = 1.75$, $SD = 0.56$) than participants in the good person condition ($M = 0.26$, $SD = 0.56$), $t(134.99) = 15.61$, $p < .001$, $d = 2.66$ (here and throughout, degrees of freedom were Welch-corrected where necessary). Participants in the bad person condition also chose *not* to receive more good outcomes on average ($M = 1.59$, $SD = 0.78$) than participants in the good person condition ($M = 0.20$, $SD = 0.53$), $t(118.16) = 12.17$, $p < .001$, $d = 2.08$. The residual components from these analyses were not normally distributed, but non-parametric tests—specifically, Mann-Whitney U tests and percentile bootstrap confidence intervals (CI) of the mean differences (5,000 samples)—yielded the same pattern of results for the effect of the moral value of the target on the bad outcomes participants wanted to read, $Z = 9.36$, $p < .001$, 95% bootstrap CI of 1.30 and 1.66, and the good outcomes participants did not want to read, $Z = 8.42$, $p < .001$, 95% bootstrap CI of 1.16 and 1.60.

Participants' choices of the bad outcomes they wanted to read and the good outcomes they did not want to read were highly correlated, $r = .87$, $p < .001$.

Following Study 2, we examined whether participants' perceptions of deservingness mediated the effect of the target's moral worth on their choices to read and not to read good and bad outcome information. We first computed difference scores for participants' ratings of deservingness (mean of the deservingness ratings for the bad outcomes minus the mean for the good outcomes). These scores correlated highly with participants' choices to receive bad outcome information and not receiving good outcome information (rs = .80 and .76, ps < .001, respectively). Shown if Figure 4, bootstrapped analyses (Preacher & Hayes, 2008; 10,000 resamples) revealed that perceived deservingness mediated the effect of the target's moral worth (good = 1 vs. bad = -1) on wanting to receive bad outcome information (total effect = -0.74; indirect effect = -0.33, 95% BCa CI of -0.485, -0.175) and, in a separate analysis, not wanting to receive good outcome information (total effect = -0.69; indirect effect = -0.42, 95% BCa CI of -0.589, -0.245).

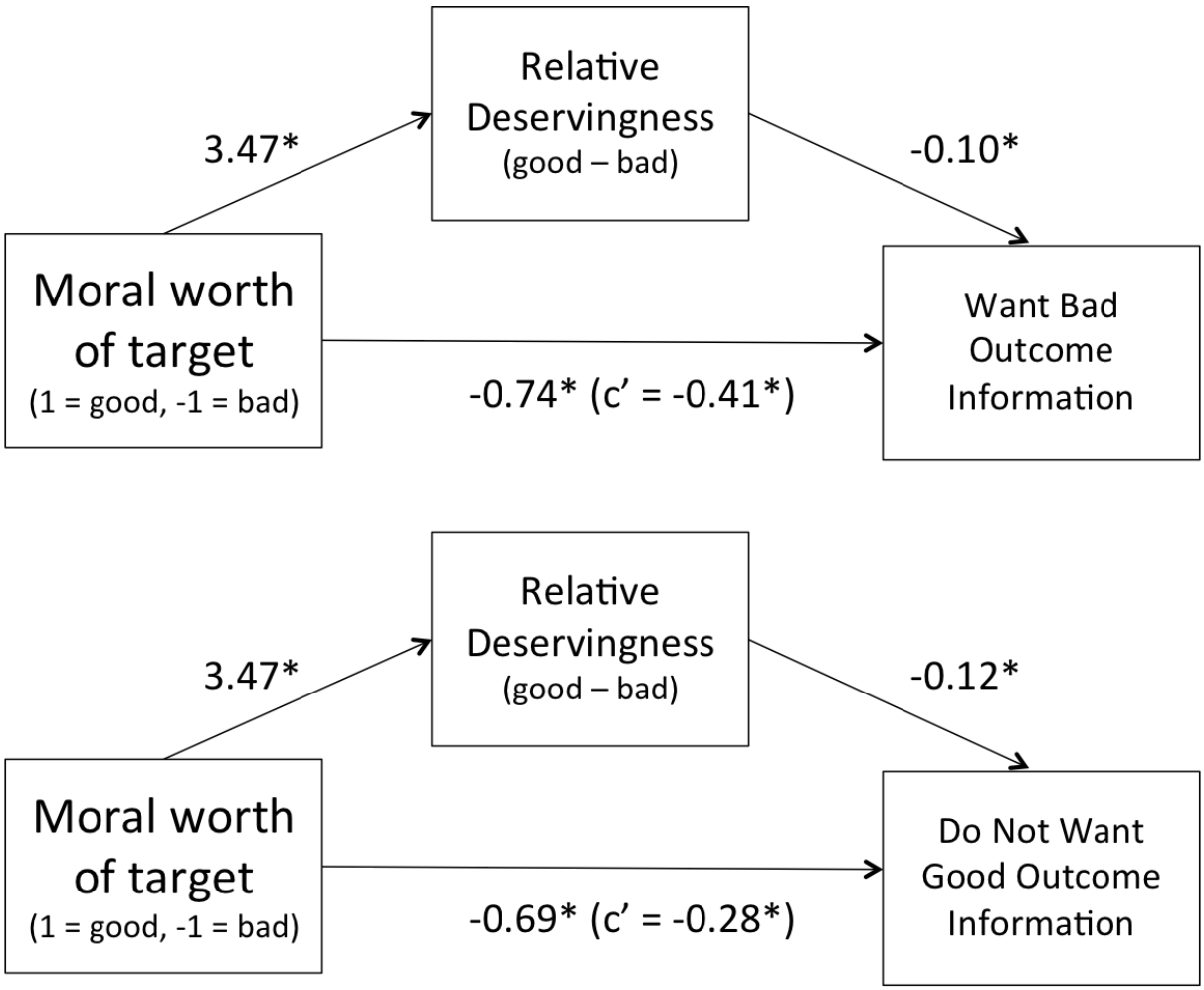

Figure 4. The influence of the moral worth of the target character on selective exposure to bad outcomes (top section) and selective avoidance of good outcomes (bottom section) through perceived deservingness of the good (vs. bad) outcomes. Values show unstandardized regression coefficients. * $p < .05$

Study 4

In Study 3 we found that participants selectively sought deserved, and selectively avoided undeserved, outcomes. One issue with our Study 3 design is that asking participants to provide both the outcomes they wanted to read and the outcomes they did not want to read may have introduced some uncertainty about which outcomes they would *actually* read after they made their selections. As such, participants may have chosen to read deservingness-congruent outcomes not because they wanted to read them *per se* but to increase the probability that they would *not* be exposed to deservingness-*in*congruent outcomes (or vice versa). In Study 4, we disentangled selective avoidance and selective exposure by including evaluatively-neutral outcome options and

asking participants to only choose the outcomes they wanted to read. In this design, participants demonstrate selective exposure if they choose to read congruent information more than incongruent or neutral information. For example, Jang (2014) found that participants selectively chose to read news articles that were consistent with their political attitudes (e.g., "10 Reasons to be Pro-Choice" for someone with a positive attitude toward pro-choice) more than news articles that were either inconsistent with their attitudes (e.g., "Abortion Harmful to Mental Health") or were neutral (e.g., "Abortion Issue Arises in Budget Debate"). There was also no difference between participants' choices of news articles that were neutral or inconsistent with their attitudes. Thus, in Study 4, if participants are not selectively exposing themselves to deservingness-congruent information then there should be no selection difference between deservingness-congruent and neutral outcomes. In other words, including neutral outcome information introduces a control to test whether participants are selectively exposing themselves to information that is specifically deservingness-congruent and not simply avoiding deservingness-incongruent information.

In Study 4 we also did not impose any limits on the number of outcomes participants could chose to read, including the option to read no outcomes whatsoever. Doing so effectively introduced a cost to information seeking (cf. Frey, 1981)—choosing any outcomes at all would mean participants would have to forego some of their free time to further read and evaluate their chosen outcomes rather than simply ending the survey.

Method

Participants

Participants were recruited online (N = 151; 41.1% females; M_{age} = 34.26; SD_{age} = 11.76) using MTurk. Eleven additional participants were not included in analyses because of duplicate IPs (n = 7) or failing a simple story comprehension check (n = 4; "In the story you read at the beginning of the survey, what did Sally do at the corner store?").

Materials and procedure

Participants were invited to take part in a study "investigating the processing of narrative

information". They first read about Sally, who was buying bread and milk at a corner store. Half of the participants read that, after paying, Sally "stole all the change from a charity collection that was on display at the counter" (bad person). The other half read that Sally "put all her spare change into the charity collection that was on display at the counter" (good person).

After reading the story, participants were presented with a list of 9 possible outcomes for Sally. Of the 9 outcomes, 3 were bad ("Sally was injured in a car accident", "Sally's ground-floor apartment was flooded", "Sally came down with a serious illness"), three were good ("Sally's won $1,000 playing a scratch card lottery ticket", "Sally's stocks and shares skyrocket", "Sally was given a major promotion at work") and three were neutral ("Sally went to a concert", "Sally started writing a new blog", and "Sally tidied up her office"). Participants were told that there were no limits on the number of outcomes they could choose to read ("Which of these events, if any, would you like to read more about concerning Sally's life soon after the incident at the corner store?").

Results and Discussion

Overall, a large majority of participants (94.7%) chose to receive at least one of the outcome information options (Mode = 1, M = 2.58, SD = 1.95). Participants' choices for the outcomes they wanted to read were subjected to 2 (Person: good vs. bad) X 3 (Outcomes: good vs. neutral vs. bad) mixed ANOVA with repeated measures on the second factor. Analyses revealed significant main effects for Person, $F(1, 149) = 12.82$, $p < .001$, $\omega^2 = .07$, and Outcome, $F(1.77, 264.04) = 12.82$, $p < .001$, $\omega^2 = .07$ (Greenhouse-Geisser corrected). More importantly, analyses revealed a significant interaction, $F(1.77, 264.04) = 23.63$, $p < .001$, $\omega^2 = .12$ (see Table 1). The residual components from this analysis were not normally distributed. We therefore supplemented conventional follow-up paired samples t-tests with non-parametric tests—specifically, Wilcoxon Signed Ranks tests and percentile bootstrap confidence intervals (CI) of the mean differences (5,000 samples).

Follow-up analyses revealed that, within the bad person condition, participants chose more bad outcomes on average than neutral outcomes, $t(73) = 4.65$, $p < .001$, Wilcoxon Signed Ranks test $Z = 4.20$, $p < .001$, 95% bootstrap CI of 0.386 and 0.965 (r between repeated measures = .06). There

was no significant difference between the neutral and good choices within the bad person condition, $t(73) = -0.66$, $p = .501$, $Z = -.90$, $p = .369$, 95% bootstrap CI of -0.206 and 0.107 (r between repeated measures = .60). Within the good person condition, participants chose more good outcomes on average than neutral outcomes, $t(76) = -6.33$, $p < .001$, Wilcoxon Signed Ranks test $Z = 5.21$, $p < .001$, 95% bootstrap CI of -1.10 and -0.57 (r between repeated measures = .25). There was no significant difference between the neutral and bad choices within the good person condition, $t(76) = 0.82$, $p = .415$, $Z = .92$, $p = .356$, 95% bootstrap CI of -0.185 and 0.445 (r between repeated measures = -.01).

Table 1. *The effect of the moral value of the target on participants' choices of the outcome information they wanted to read later in the survey.*

	Value of Outcome		
	Bad	Neutral	Good
Value of Person			
Bad (n = 74)	1.11_a (1.05)	0.43_b (0.74)	0.49_b (0.80)
Good (n = 77)	0.84_b (1.05)	0.71_b (0.90)	1.56_a (0.98)
No Person Information (N = 101)	0.69_a (0.87)	0.58_a (0.74)	1.00_b (0.82)

Note. Values within cells show means (standard deviations) of the number of choices. Means within the good and bad person conditions and for the separate "no person information" sample that do not share a common subscript across rows are significantly different ($p < .05$).

What outcomes do people tend chose to learn about when they are not given any information about the target character's prior moral conduct? To address this question, we recruited a separate sample of online participants (N = 101; n = 1 additional participant removed for having a duplicate IP address; 55.9% female; M_{age} = 36.15; SD_{age} = 12.00) and asked them to choose among the same 9 outcome options for "Sally" as in the main study, but we gave them no information about her prior moral conduct. Specifically, they read: "Below you will see several events that happened in the life of a woman named Sally. All that you know about Sally is her name. Which

events would you like to read more about?". Shown in the bottom section of Table 1, there was a tendency for participants to chose to read about the good outcomes more than the neutral outcomes, $t(100) = 3.81$, $p < .001$, Wilcoxon Signed Ranks test $Z = 3.55$, $p < .001$, 95% bootstrap CI of 0.21 and 0.63, and the good outcomes more than the bad outcomes, $t(100) = 2.71$, $p = .008$, Wilcoxon Signed Ranks test $Z = 2.50$, $p = .013$, 95% bootstrap CI of 0.079 and 0.525. There was no significant difference between participants' choices of bad versus neutral outcomes, $t(100) = 0.91$, $p = .364$, Wilcoxon Signed Ranks test $Z = 1.04$, $p = .30$, 95% bootstrap CI of -0.128 and 0.347. Thus, absent any information about the target person's prior moral conduct, participants tended to choose to receive good outcome information more than bad and neutral outcome information. This is consistent with theories that suggest people are Pollyanish (e.g., Taylor & Brown, 1988) or Panglossian (Kay et al., 2007) – that is, generally biased towards perceiving their social environments in a more positive than negative light. More specifically, it is consistent with theoretical models that cast selective exposure as a mood regulating process, in which absent other motives, people prefer hedonically positive over negative information (Knobloch & Zillman, 2002; Oliver, 2003; Zillman, 1988). Given the pattern of results from our main sample in Study 4 (top section of Table 1), this tendency seems to shift when participants do have knowledge of the target person's moral conduct: even when they had the opportunity to choose no outcome information at all, participants selectively exposed themselves to bad (good) outcomes for a bad (good) person. Given that there were no differences between the choices of neutral and good outcomes when the target person was bad and neutral and bad outcomes when she was good, these findings also suggest that participants are primarily selectively seeking deservingness-congruent information rather than selectively avoiding deservingness-incongruent information.

STUDY 5

In Studies 5 and 6 we examined whether participants might expend some effort to receive outcome information that is consistent with what others deserve. In Study 5, we made it relatively easy or difficult for participants to select the outcome information they wanted to receive. We did so

by having participants search within visual arrays for shapes associated with good or bad outcomes, which were either relatively easy or hard to find. We predicted that because people want to see that others get what they deserve, participants would choose to read good (bad) outcome information for good (bad) people even when it was relatively more difficult to do so.

Method

Participants

Participants from the U.S.A. were recruited online through MTurk (N = 49; 57.10% female; M_{age} = 35.94; SD_{age} = 9.59).

Materials and procedure

Using a fully within-subjects design, participants in Study 5 were presented with the same short stories (2 describing a good person and 2 describing a bad person) and choices of additional good or bad outcome information that we used in Study 1 (see supplementary materials). For example, for one story participants read:

> Steve was riding on the London Underground to St. James's park to meet his girlfriend for a pleasant outdoor picnic in the park. While at a stop, a frail old lady entered the same carriage occupied by Steve. Instead of getting up and offering his seat, Steve scowled at the old lady and refused to give up his seat.

Following each story, participants were presented with two sentences that represented two pieces of additional information about the story; one describing a good outcome (e.g., "Jenny was sitting in her living room when she received news that she had won a new car in a sweepstakes she had entered") and one describing a bad outcome (e.g., "Jenny was in a terrible car accident that left her in hospital in serious condition"). Each outcome was paired with a colored shape; we asked participants to decide which piece of information they wanted to read later in the survey by searching for and clicking on the shape associated with that outcome within an array of shapes that would be shown on the next page.

On the next page participants performed a search task where they saw an array of different shapes, including the two target shapes they just learned were associated with the good and bad

outcome information they could receive (see Figure 5).

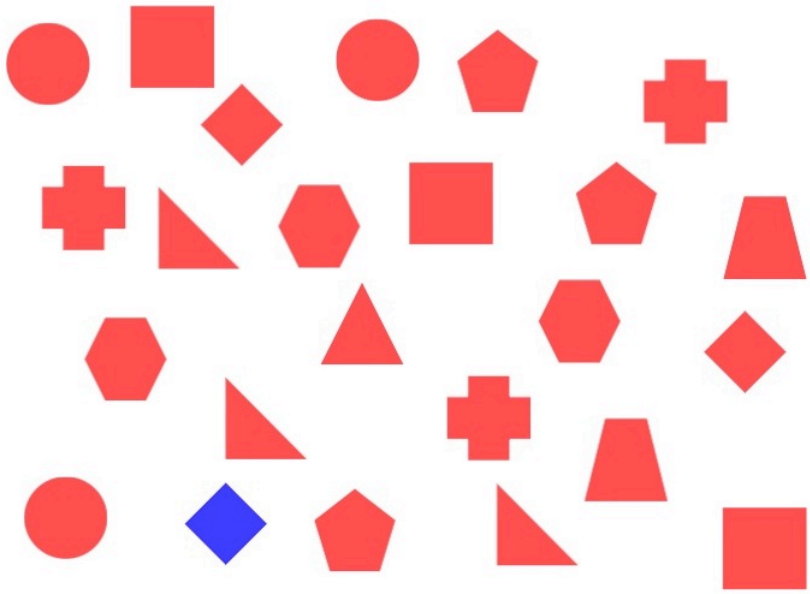

Figure 5. An example array of shapes used in Study 3. In this example, the red equilateral triangle (center of figure) represented the deservingness congruent information and the blue rhombus represented the deservingness incongruent information.

We told participants to find and click on the shape in the array that represented the information they wanted to read later in the survey. We designed each array with reference to performance in visual search experiments, and the theories that have been advanced to explain this performance (e.g., Feature Integration Theory: Triesman & Gelade, 1980; Guided Search: Wolfe, 1994). In essence, these theories propose that it is more difficult (less efficient) to find target items that share features with distractor items. Targets which are defined by a single unique feature (e.g., the blue item in Figure 4) seem to "pop-out" and are found quickly regardless of the number of surrounding items and without having to allocate focused attention. Targets which are defined by a conjunction of features (e.g., the red equilateral triangle in Figure 4) take much longer to find and are thought to involve a more laborious search where attention is moved serially from item-to-item.

In the present study, the shape representing the deservingness-congruent information (e.g., a good outcome for a good person) was always the same color as the distractor shapes (e.g., the red

equilateral triangle in Figure 5), and was therefore less easy to find. The shape representing the deservingness-*in*congruent information was always a "pop-out" target with a different color to all the other shapes in the array (e.g., the blue rhombus in Figure 5), and would therefore be found "preattentively" with little effort. In other words, we made it more difficult for participants to find information that was congruent (vs. incongruent) with what the targets deserved. We asked whether participants would still choose congruent information even when their visual attention was captured by the incongruent outcome, making it a much quicker option to choose.

Results

We used mixed effects logistic regression to analyze participants' choices of outcomes across the scenarios. The dependent variable was whether participants chose a Good outcome (coded 1) or a Bad outcome (coded 0). The predictor variable was Person (good, coded 1, vs. bad, coded -1). We included random intercepts for participants and scenarios, and random slopes by participants for the effect of Person (with correlated random effects). There was an overall tendency to favour Good outcomes, $B_{intercept}$ = 3.42, Z = 3.83, 95% CI 1.67 and 5.18, $p < .001$ (cf. Study 4); more importantly, participants were more likely to choose a good outcome for a good person (73%) than for a bad person (34%), B_{person} = 4.15, Z = 4.71, 95% CI of 2.43 and 5.88, $p < .001$.

STUDY 6

Even when it was relatively difficult to do so, participants in Study 5 tended to search for and choose outcomes consistent with what the target persons deserved. Our assumption in Study 5 was that participants' attention was initially drawn to the distractor shape, and that participants then had to disengage and avoid the temptation to choose this shape by actively searching for the shape associated with the deservingness-congruent outcome. A stronger test of this assumption is to examine differences in response times during visual search for each type of shape. When a shape is both visually salient (e.g., is larger and a different color than other shapes within an array) and associated with the information that participants generally want to view (i.e., the deservingness-congruent information is easier to find), responses should be quick. In contrast, when a shape is not

visually salient (e.g., is smaller and the same color as other shapes) and is associated with what participants want to view (i.e., the deservingness-congruent information is harder to find), then responses should be slower, assuming participants are engaging in a more active, elaborate search for this desired information.

Method

Participants

Participants from the U.S.A. were recruited online through MTurk (N = 176; 46% females; M_{age} = 33.47; SD_{age} = 11.15). Thirty additional participants were excluded from analyses because of duplicate IP addresses (n = 6), failing a simple multiple choice story comprehension check (n = 8), skipping the search task altogether (n = 8), selecting both shapes (n = 7), or having no timing data registered (n = 1).

Materials and procedure

We told participants that they would read one short "incomplete" story about an individual going about his daily life. Participants were then told they would be shown two shapes, each representing two different outcomes for the protagonist. Their task was to find and click on the shape within an array of shapes that represented the outcome information they wanted to read.

All participants read the same short story, which described a man named Geoff who threw a puppy into a river (we focused on a bad person in Study 6 to simplify the design). Participants were then presented with two pieces of additional information, represented by two separate sentences. One sentence described Geoff winning a new car in a sweepstake (good outcome); the other sentence described Geoff being involved in a terrible car accident that left him in hospital in serious condition (bad outcome).

Two shapes were used: a large orange circle and a small blue star. Shown in Figure 6, the orange circle was the largest item in the display and was defined by a unique color, making it a "pop-out" target. The blue star was smaller and the same color as multiple distractors, so we predicted that participants would be much less efficient and slower at finding it. The shape associated with

each outcome was varied between subjects such that the congruent outcome was either harder (blue star) or easier (orange circle) to find.

After the search task, participants answered a story comprehension check item: "In the brief story you read, the man (Geoff): (a) dived into the river and saved the puppy, (b) threw the puppy into the river, or (c) what story?". Next, they answered 'yes' or 'no' to a question about whether they selected the shape they initially wanted ("During the search task, did you end up finding and selecting the shape you initially wanted to find?"), and, if no, why they did not select the shape they initially wanted to search for (the options were "I couldn't find it", "I thought it probably wasn't actually in the array of shapes" and "other, please specify").

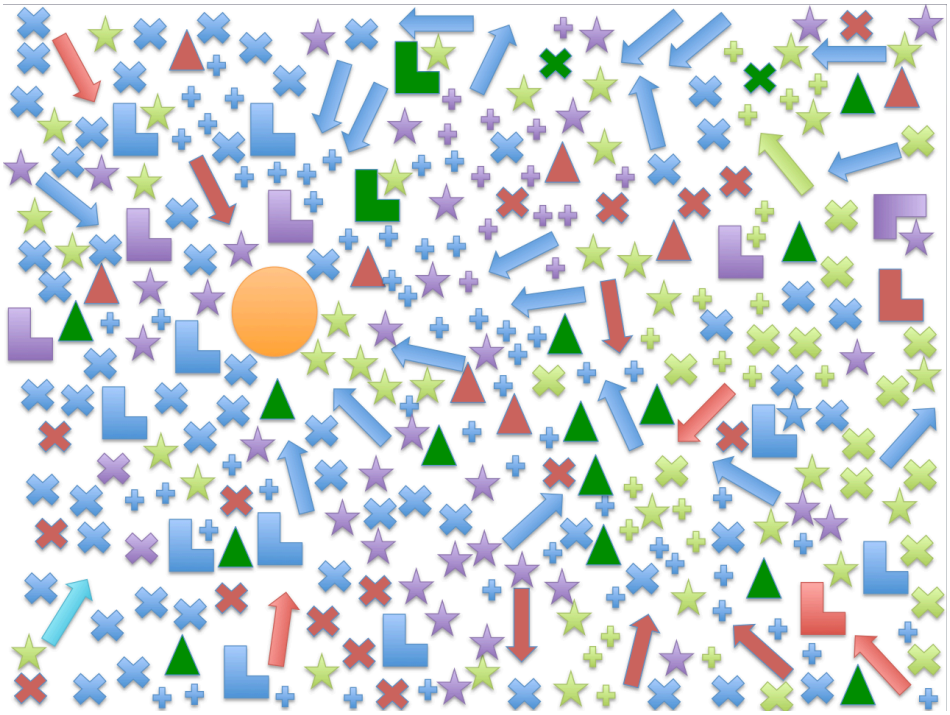

Figure 6. The array of shapes used in Study 4. The orange circle was the easy-to-find shape and the blue star was the hard-to-find shape. Participants were told either that deservingness-consistent or inconsistent information was associated with one of these shapes.

Results and Discussion

A greater proportion of participants chose the deservingness congruent outcome (72%) than the incongruent outcome, χ^2 contingency test = 32.82, $p < .001$. This tendency, however, differed as a function of how easy or hard it was to find the congruent outcome, χ^2 contingency test = 26.11, $p < .001$, such that a larger proportion of participants chose the shape associated with the congruent

outcome when it was easier to find (89%) than when it was harder to find (54%). More importantly, analysis of participants' log-transformed search times[2] revealed that participants took longer to choose a shape when the deservingness-congruent information was harder (M = 2.73, SD = 1.01) than when it was easier (M = 1.70, SD = 1.15) to find, $t(171.92) = 6.29$, $p < .001$, $d = .95$.

Ancillary sub-group analyses showed that participants who chose the circle (the easier-to-find option) took longer to do so when it was associated with the incongruent (good) outcome (n = 40; M = 2.23, SD = 1.16) than with the congruent (bad) outcome (n = 79; M = 1.50, SD = 1.04), $t(71.03) = 3.39$, $p = .001$, $d = .66$. There were no significant differences in search times among participants who chose the star (the harder-to-find option) when it was associated with the incongruent outcome (n = 10; M = 3.25, SD = 0.82) versus the congruent outcome (n = 47; M = 3.14, SD = 0.62), $t(11.27) = -0.40$, $p = .70$, $d = -0.15$. The difference of these differences was significant, $F(1, 172) = 4.86$, $p = .029$. Further, 20 participants reported not ultimately choosing the shape they wanted to choose, and all of these participants chose the easier-to-find circle (80% reported they could not find the blue star; 20% thought it actually wasn't in the array). Among participants who chose the circle, a significantly greater proportion reported selecting the shape they did not want to select when the circle was associated with the incongruent outcome (14/40, 35%) than when it was associated with the congruent outcome (6/79, 8%) $\chi^2 = 14.26$, $p < .001$. These results suggests that even though many participants ultimately chose the easier-to-find option when it was associated with the deservingness-incongruent outcome, they were actively searching for the deservingness-congruent outcome, because they took longer to make their choice instead of immediately selecting the easy-to-find shape.

Study 7

We proposed that a concern for deservingness is one of the reasons why people might selectively expose themselves to bad (good) things happening to bad (good) people, and the indirect

[2] For purpose of analysis, search time was log-transformed to help symmetrize the data. The results are similar using raw search times (Ms = 22.87 vs. 10.74 seconds), $t(161.84) = 4.36$, $p < .001$, $d = .66$.

effects of perceived deservingness we found in Studies 2 and 3 suggest that this is the case. However, one issue with these mediation findings is that perceived deservingness was measured rather than manipulated, so its causal influence is unclear (i.e., deservingness might be a justification for, rather than a cause of, selective exposure to good and bad outcomes). Study 7, then, was designed to provide further evidence for the idea that a concern for deservingness underlies selective exposure to outcomes. We did so by adopting a moderation-of-process design (Spencer, Zanna, & Fong, 2005). Specifically, drawing on research showing that "affirmations of justice" can reduce people's tendencies to engage in strategies to maintain a commitment to deservingness (e.g., immanent justice reasoning; see Callan et al., 2014), participants in Study 7 learned about bad people who did or did not receive "just deserts" for their transgressions before we asked them to rate how much they wanted to receive good and bad outcome information. If a concern for deservingness underlies these selective exposure effects, then learning that a bad person already got what they deserved—that is, received their "just deserts"—should reduce the necessity for participants to selectively expose themselves to bad outcome information.

Method

Participants

Participants from the U.S.A. were recruited online through Amazon's Mechanical Turk (N = 77; 45% female; M_{age} = 35.98; SD_{age} = 12.60). Data from 6 additional participants were not included in analyses because they either incorrectly answered a simple, multiple-choice story comprehension question (n = 5; "In the story you read about Sally, what did she do at the corner store?") or did not answer all of the items (n = 1).

Materials and procedure

We informed participants that they would read short and incomplete narratives, before being asked to rate how much they wanted to read different pieces of additional information about the stories. We informed participants this additional information would be shown to them in full at the end of the survey.

We used two stories, each describing a bad person (Sally stole from a charity collection and Steve was mean to an elderly person). Participants read and responded to each of the stories, but one of the stories ended with the target—Sally or Steve—receiving just deserts for his/her transgression. For the Sally story, half the participants learned that "on her way out of the store, Sally was approached by a man who mugged and assaulted her, smashing her face to the ground and stealing her purse containing her cell phone and other valuable possessions." For the story about Steve, half the participants read that he was "crossing the street after leaving the subway when he was struck by a taxi running a red light. Steve survived the incident but lost the use of his legs." Thus, participants read two stories, each describing a "bad" person, one of which concluded with a deservingness affirmation. Whether participants learned that Sally or Steve received just deserts was determined randomly between participants and the two stories were presented to participants in a random order.

Like Study 1, participants were then presented with two pieces of additional information (each summarized in a sentence) that describe an event occurring to Steve/Sally after the incident(s) described in the stories. Participants were asked to rate the degree to which they wanted to read about these outcomes later in the survey. One sentence represented a good outcome (Sally won a luxury cruise; Steve won a lottery) and the other described a bad outcome (Sally contracted a serious illness; Steve's apartment was destroyed by flooding). Participants rated the extent to which they wanted to read each of the outcomes (1 = *I do not want to read these details later on in the survey* to 6 = *I want to read these details later on in the survey*).

Results and Discussion

Participants' ratings of how much they wanted to read about the outcomes were averaged across the two scenarios and subjected to a 2 (Outcome to Read: good vs. bad) X 2 (Justice Affirmation: affirmation vs. no affirmation) fully within-subjects ANOVA. Analyses revealed a significant main effect of Outcome, $F(1, 76) = 9.98$, $p = .002$, which was significantly moderated by

Justice Affirmation, $F(1, 76) = 7.90$, $p = .006$, $\omega^2 = .08$ (see Figure 7).[3] Follow-up analyses showed that participants wanted to read about bad outcomes to a greater extent than good outcomes when there was no justice affirmation, $t(76) = 3.99$, $p < .001$ (r between repeated measures = -0.37). There was, however, no significant difference between ratings of wanting the good and bad outcomes when justice was affirmed, $t(76) = 1.48$, $p = .144$ (r between repeated measures = -0.21). Linear mixed effects modelling produced the same results, but suffered some problems with estimation.

Thus, selective exposure to deserved outcomes is reduced when deservingness is otherwise affirmed, lending further weight to the idea that the sorts of effects we have examined are due to people's concerns about seeing that people get what they deserve.

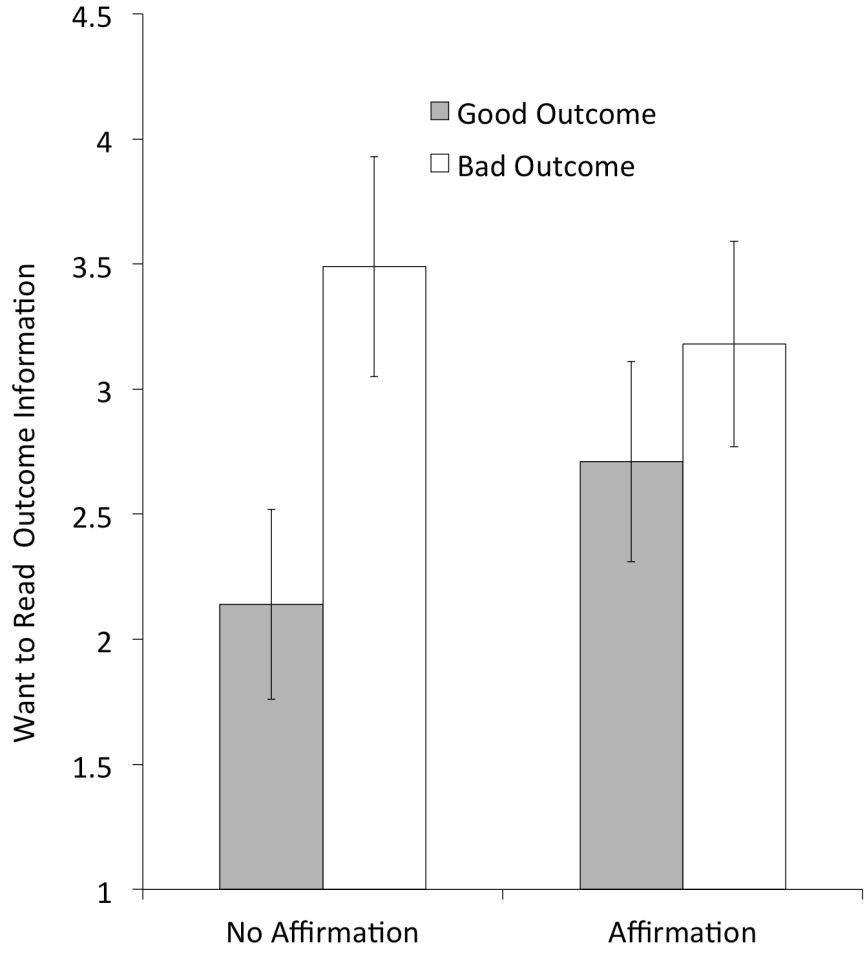

Figure 7. The effect of justice affirmation on the extent to which participants wanted to read good and bad outcome information for bad people. Error bars show 95% CIs of the means.

[3] Adding a between-subjects factor that indicated which scenario included a justice affirmation did not reveal any significant main or interaction effects of scenario (all *p*s > .29).

General Discussion

Employing a range of stimuli and tasks, the present studies provide consistent support for the general hypothesis that people choose to be exposed to information about deserved rather than undeserved outcomes. This effect was mediated by the perceived deservingness of outcomes (Studies 2 and 3), and was not evident when participants knew that wrongdoers had already received just deserts for their transgressions (Study 7). Participants were not simply selectively avoiding information about undeserved outcomes but actively sought information about just outcomes (Studies 3 and 4). Participants invested effort in this pattern of selective exposure, seeking out information about deserved (vs. undeserved) outcomes even when it was more difficult to do so (Studies 5 and 6). Further, response time data showed that participants took longer to search for information about deserved outcomes, and suggested that even participants who chose to view information about undeserved outcomes had first searched for information about deserved outcomes (Study 6).

It would seem functionally important for people to take a balanced, utilitarian approach to seeking information about the good and bad things that can happen. This would enable people both to hope for and work towards the best while avoiding and preparing for the worst. People clearly deviate from this accuracy motivation in the present studies. Of note, in Study 4, participants sought out positive rather than negative outcomes in the life of a person whose moral status they did not know. This positivity bias is consistent with theoretical models of selective exposure as a mood regulating process that helps people construct "positive illusions" about the world (Oliver, 2003; Zillman, 1988; more generally, Taylor & Brown, 1988). Of more interest, however, is that this tendency was accentuated when participants thought the outcomes happened to good people, but reversed when they thought they happened to bad people. Thus, the preference to learn about hedonically positive outcomes was trumped by the desire to learn about deserved outcomes:

horrific car crashes and terminal illnesses were more attractive than dazzling strokes of luck and social triumphs, so long as they were more deserved.

The present findings build upon the eye-tracking findings of Callan et al. (2013). The anticipatory bias of participants' eye-movements they found can be interpreted as a preference to see deserved rather than undeserved outcomes, broadly consistent with the present results. However, they can also be interpreted as a preconscious expectation that the outcome will be just, consistent with how such predictive eye-movements are interpreted in the literature on reading and story comprehension. Moreover, Callan et al. were not able to differentiate between people's expectations of deserved outcomes and the *deliberate* choices people make to receive information consistent with the view that people get what they deserve. The present results therefore provide the first unambiguous evidence that participants, even at the expense of their time, actively and deliberately choose to encounter information consistent with what is deserved.

The present findings uncover a theoretically important, hitherto unexplored means by which people preserve the belief that the world is a just place from disconfirmatory evidence. Other well-known strategies such as immanent justice reasoning, ultimate justice reasoning, and victim derogation have been shown to play an important role in preserving the psychological benefits of just-world beliefs (Ellard, Harvey, & Callan, 2016), including the ability to delay gratification (Callan, Harvey, & Sutton, 2014; Callan, Harvey, Dawtry, & Sutton, 2013). However, these strategies involve processing of information *after* it has been encountered, and run into important psychological constraints. For example, derogating innocent victims of misfortune may run counter to people's moral standards (Hafer & Bègue, 2005), and immanent justice reasoning runs counter to reality constraints because it is incompatible with people's knowledge of how the physical world operates (Callan et al., 2014).

In contrast, selective exposure allows people to expose themselves to biased samples of outcome information in a manner that is free from these constraints. In principle, even if people reason in an unbiased manner, through selective exposure they may draw the biased conclusion that

the world is a relatively fair place in which people get what they deserve. Such selective exposure to deserved outcomes might have important implications for how people sustain and cultivate beliefs about deservingness and communicate those beliefs to others. For example, we can expect that if people selectively expose themselves to deserved more than undeserved outcomes, then they might be more likely remember events as more just and fair than a balanced, unbiased assessment of the objective circumstances might have indicated (cf. Callan et al., 2009). That is, if people selectively expose themselves to information that elaborates on deserved outcomes, then the logical outcome is that they have an opportunity to rehearse that information. Such memory biases might have further consequences for information retransmission (Cappella, Kim, & Albarracín, 2015)—people might communicate to others that events were just and fair precisely because they selectively chose and remember them in that way. Exploring this interplay between selective exposure, memory biases, and social communication remains an important avenue for future research.

One limitation of the present research is our reliance on samples from Amazon's Mechanical Turk. Research has highlighted some of the strengths of MTurk compared to traditional sampling, including MTurk participants being more demographically diverse than standard undergraduate samples, the rapid and inexpensive nature of recruitment, and the sometimes superior quality of data (e.g., Buhrmester, Kwang, & Gosling, 2011; Clifford, Jewell, & Waggoner, 2015; Hauser & Schwarz, 2016). Although MTurk samples are more diverse than traditional samples, Paolacci and Chandler (2014) warned that they are not representative of the general population. They also highlighted that participants who frequently use MTurk may become familiar with commonly used procedures, materials, and measures and therefore their responses may not be "organic," whereas other workers might not be fully attentive or respond honestly. We tried to limit these concerns by using novel materials, screening participants for multiple responses, and removing participants who were clearly not attending to and reading the materials. Nonetheless, future research should consider replicating and extending our findings using more representative and non-Western samples.

Conclusions

Lerner's (1980) just world theory was impelled by a paradox: despite all the evidence to the contrary, people appear to believe that the world is a just place. It proposed two resolutions of this paradox. First, it portrayed the 'just world' as a fiction constructed and defended in the mind of the perceiver. Thus, when they encounter injustice, people derogate victims and find other cognitive ways of preserving their faith in justice. Second, it framed the 'just world' as an idyllic blueprint that motivates people to behaviorally redress innocent suffering, and so reduce the disparity between their idyll and reality. The present studies provide a complementary perspective. They suggest that the 'just world' does not only exist in the mind of the perceiver, but can also be understood as a handpicked region of the objective world. Within (vs. beyond) its deliberately limited horizons, injustice is rare and justice commonplace, such that even an unbiased observer might find just-world beliefs to be empirically warranted. Indeed, research informed by the cognitive-ecological approach to social cognition (Fiedler, 2000) has shown that sampling from biased information may lead unbiased observers to draw biased conclusions about the fairness of their society (Dawtry, Sutton, & Sibley, 2015). The present studies show that people are prepared to invest time and effort to constrain their experience in this way. By doing so, they may save themselves considerable effort and discomfort in the longer run—In a world that seldom contains injustice, cognitive and behavioral strategies to minimize injustice are seldom required.

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Supplementary Materials

Study 1

The four short stories and the additional outcome information used in Study 1. Good outcome information is numbered 1 and bad outcome information is numbered 2.

Good person	Bad person
Last Summer, Luke was on holiday in the Caribbean. He decided to have lunch in a restaurant near his hotel recommended by locals. Although the restaurant was very busy, Luke thought the service was excellent and greatly enjoyed the food. Despite his waiter being tied up with another customer, Luke decided to wait until he was available to offer him great praise and a large tip. Later on that evening, Luke decided go for a swim in the ocean.	**Steve was riding on the London Underground to St. James's park to meet his girlfriend for a pleasant outdoor picnic in the park. Earlier that day, the weather forecast had warned of a 50/50 chance of thunderstorms. While at a stop, a frail old lady entered the same carriage occupied by Steve. Instead of getting up and offering his seat, Steve scowled at the old lady and refused to give up his seat.**
Additional outcome information:	***Additional outcome information:***
1. While swimming, Luke found a $100 bill buried in the sand at the beach.	**1. When Steve emerged from the Underground, he looked up and observed that the sky was clear and the sun was shining.**
2. While swimming, the current carried Luke away and he drowned.	**2. When Steve emerged from the Underground, he looked up and observed a grey, cloudy sky from which rain was pouring down.**
A week ago, Jenny was walking along the River Wye when she spotted a puppy drowning in the river. Risking her own life, Jenny dived into the river and saved the puppy from drowning.	**Last week, Sally was in a greengrocers buying fruit and vegetables. After paying, she made sure that no one was looking, and stole all the change from a charity collection that was on display at the counter.**
Additional outcome information:	***Additional outcome information:***
1. One week later, Jenny was sitting in her living room when she received news that she had won a new car in a sweepstake she had entered.	**1. On her way out of the greengrocers, Sally was approached by a man who offered her free samples of the food on offer in his delicatessen across the road.**
2. One week later, Jenny was sitting in her living room when she received news that her husband was in a terrible car accident.	**2. On her way out of the greengrocers, Sally was approached by a man who mugged her, stealing her bag containing her purse and phone among other possessions.**

Table S1. Ratings of deservingness of outcomes by a separate sample of MTurk participants (N = 49, n = 1 removed for having a duplicate IP address; 36.70% females; M_{age} = 34.55; SD_{age} = 9.62) for each of the outcomes by scenario we used in Study 1 (presented in a random order). Participants made ratings for each of the outcomes and scenarios (cf. Study 1 in the main text), and their ratings of deservingness were made on a 7 point scale (e.g., "To what extent do you believe Jenny deserves to win a new car in a sweepstake she enters?"; 1 = *not at all deserving* to 7 = *very deserving*).

Scenario	Good Outcome *M (SD)*	Bad Outcome *M (SD)*	*t* (*p*)	*dz*
Luke left a tip	4.39 (1.38)	1.31 (0.98)	11.61 (< .001)	1.66
Jenny saved puppy	4.69 (1.49)	1.41 (1.12)	11.68 (< .001)	1.67
Steve mean to lady	1.98 (0.99)	4.57 (1.51)	-8.98 (< .001)	-1.28
Sally stole change	1.60 (1.07)	3.13 (1.75)	-4.76 (< .001)	-0.68

Study 2

The short stories and the additional outcome information used in Study 2 . Good outcome information is numbered 1 and bad outcome information is numbered 2.

Good person	Bad person
A week ago, Geoff was walking along the River Wye when he spotted a puppy drowning in the river. Risking his own life, Geoff dived into the river and saved the puppy from drowning.	**A week ago, Geoff was walking along the River Wye when he spotted a puppy along the bank of the river. With no regard for its life, Geoff picked up the puppy and threw it in the river.**

Additional outcome information:

1. Geoff was sitting in his living room when he received news that he had won a new car in a sweepstake he had entered.

2. Geoff was in a terrible car accident that left him in hospital in a serious condition.

Study 3

The short stories and the additional outcome information used in Study 3.

Good person	Bad person
A week ago, Chris was walking along the River Wye when he spotted a puppy drowning in the river. Risking his own life, Chris dived into the river and saved the puppy from drowning.	**A week ago, Chris was walking along the River Wye when he spotted a puppy along the bank of the river. With no regard for its life, Chris picked up the puppy and forcefully drowned it in the river**

Additional outcome information:

Good outcomes	Bad outcomes
• Chris's stocks and shares skyrocketed • Chris won $100,000 playing a scratchcard lottery ticket • Chris was given a major promotion at work • Chris won a luxury cruise trip	• Chris was injured in a car accident • Chris was fired from his job • Chris contracted a major illness • Chris's ground-floor apartment was destroyed by flooding

Study 4

The short stories and additional outcome information used in Study 4.

Good person	Bad person
Last week, Sally was in a corner store buying bread and milk. After paying, she made sure that no one was looking and put all of her spare change into a charity collection that was on display at the counter.	**Last week, Sally was in a corner store buying bread and milk. After paying, she made sure that no one was looking and stole all the change from a charity collection that was on display at the counter.**

Additional outcome information:

Good outcomes	Bad outcomes	Neutral outcomes
• Sally's stocks and shares skyrocketed	• Sally was injured in a car accident	• **Sally went to a concert**
• Sally won $1,000 playing a scratch card lottery ticket	• Sally's ground-floor apartment was flooded	• **Sally started writing a new blog**
• Sally was given a major promotion at work	• Sally came down with a serious illness	• **Sally tidied up her office**

Study 5

The short stories and additional outcome information used in Study 5. Good outcome information is numbered 1 and bad outcome information is numbered 2.

Good person	Bad person
Last Summer, Luke was on holiday in the Caribbean having lunch in a restaurant near his hotel. Although the restaurant was very busy, Luke thought the service was excellent and greatly enjoyed the food. Despite his waiter being tied up with another customer, Luke decided to wait until he was available to offer him great praise and a large tip.	Steve was riding on the London Underground to St. James's park to meet his girlfriend for a pleasant outdoor picnic in the park. While at a stop, a frail old lady entered the same carriage occupied by Steve. Instead of getting up and offering his seat, Steve scowled at the old lady and refused to give up his seat.
Additional outcome information:	***Additional outcome information:***
1. While swimming, Luke found $100 bill buried in the sand at the beach.	**1. When Steve emerged from the Underground, he looked up and observed that the sky was clear and the sun was shining.**
2. While swimming, the current carried Luke away and he drowned.	**2. When Steve emerged from the Underground, he looked up and observed a gray, cloudy sky from which rain was pouring down.**
A week ago, Jenny was walking along the River Wye when she spotted a puppy drowning in the river. Risking her own life, Jenny dived into the river and saved the puppy from drowning.	**Last week, Sally was in a greengrocers buying fruit and vegetables. After paying, she made sure that no one was looking, and stole all the change from a charity collection that was on display at the counter.**
Additional outcome information:	***Additional outcome information:***
1. Jenny was sitting in her living room when she received news that she had won a new car in a sweepstake she had entered.	**1. On her way out of the greengrocers, Sally was approached by a man who offered her free samples of the food on offer in his delicatessen across the road.**
2. Jenny was in a terrible car accident that left her in hospital in serious condition.	**2. On her way out of the greengrocers, Sally was approached by a man who mugged her, stealing her bag containing her purse and phone among other possessions.**

Study 6

The short story, instructions, and the additional outcome information used in Study 6.

Bad person
A week ago, Geoff was walking along the River Wye when he spotted a puppy along the bank of the river. With no regard for its life, Geoff picked up the puppy and threw it in the river.

Instructions:

On the next page you will see a busy array of different shapes - including the two below.

The two shapes below represent different pieces of information you can receive later in this survey about the narrative above (please read it again, just to be sure).

Please REMEMBER and then, on the following page, search for and CLICK on the shape which represents the information you want to receive additional details about later in the survey.

Which piece of additional information would you like to read more about concerning the above story?

Note that both shapes can actually be found in the visual array, so it's important that you search for and click on the shape you want.

Please click the next button to search for and select the shape associated with the additional information you want to review about this story.

Additional outcome information (associated either with an easy- or hard-to-find shape):

1. Geoff was sitting in his living room when he received news that he had won a new car in a sweepstake he had entered.

2. Geoff was in a terrible car accident that left him in hospital in a serious condition.

Study 7

The short stories and additional outcome information used in Study 7. Good outcome information is numbered 1 and bad outcome information is numbered 2.

Deservingness not affirmed	Deservingness affirmed
Last week, Sally was in a corner store buying bread and milk. After paying, she made sure that no one was looking, and stole all the change from a charity collection that was on display at the counter.	**Last week, Sally was in a corner store buying bread and milk. After paying, she made sure that no one was looking, and stole all the change from a charity collection that was on display at the counter.** **On her way out of the store, Sally was approached by a man who mugged and assaulted her, smashing her face to the ground and stealing her purse containing her cell phone and other valuable possessions.**

Additional outcome information:

1. Sally won a luxury cruise trip in an online sweepstakes she entered
2. Sally came down with a serious illness

Deservingness not affirmed	Deservingness affirmed
Steve was riding on the subway. While at a stop, a frail old lady entered the same carriage occupied by Steve. Instead of getting up and offering his seat, Steve scowled at the old lady, called her names, and refused to give up his seat.	**Steve was riding on the subway. While at a stop, a frail old lady entered the same carriage occupied by Steve. Instead of getting up and offering his seat, Steve scowled at the old lady, called her names, and refused to give up his seat.** **Steve was crossing the street after leaving the subway when he was struck by a taxi running a red light. Steve survived the incident but lost the use of his legs.**

Additional outcome information:

1. Steve won $10,000 playing a scratch-card lottery ticket
2. Steve's ground floor apartment was destroyed by flooding