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Ignoring alarming news brings indifference: Learning about the world and the self ☆

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ABSTRACT

The broadcast of media reports about moral crises such as famine can subtly depress rather than activate moral concern. Whereas much research has examined the effects of media reports that people attend to, social psychological analysis suggests that what goes unattended can also have an impact. We test the idea that when vivid news accounts of human suffering are broadcast in the background but ignored, people infer from their choice to ignore these accounts that they care less about the issue, compared to those who pay attention and even to those who were not exposed. Consistent with research on self-perception and attribution, three experiments demonstrate that participants who were nudged to distract themselves in front of a television news program about famine in Niger (Study 1), or to skip an online promotional video for the Niger famine program (Study 2), or who chose to ignore the famine in Niger television program in more naturalistic settings (Study 3) all assigned lower importance to poverty and to hunger reduction compared to participants who watched with no distraction or opportunity to skip the program, or to those who did not watch at all.

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1. Introduction

A predominant theme in behavioral decision research has been the malleability of human attitudes and behavior. According to the classical view, people's beliefs and preferences are expected to be well-calibrated, well-ordered, and impervious to minor – and normatively inconsequential – nuances of presentation or experience. In contrast with this picture, behavioral research has repeatedly documented instances where attitudes, beliefs, and choices can be altered by minor contextual changes, different "frames," and other nuances of the decision problem (Kahneman & Tversky, 2000).

For example, in a study underscoring the ability of subtle situational cues to shape important real-world decisions, Berger, Meredith, and Wheeler (2008) showed that people who were assigned to vote in schools were more likely to support a school funding initiative compared to those assigned to other locations, such as churches. The effect persisted even when controlling for voters' political views and demographics. In a study examining people's attitudes towards a hypothetical international crisis, Gilovich (1981) found people's recommendations to be significantly influenced by similarities between the current crisis and subtly primed historical analogies. Finally, in a study exploring why people are not always good at learning from experience, Schwarz and Xu (2011) show how even simple hedonic experiences (such as how one feels while commuting to work daily) can be reconstructed differently based on subtle and imperceptible changes in how memory is elicited and reconstructed.

This behavioral perspective, we suggest, has important implications for the study of moral learning. Although beliefs and attitudes toward moral issues such as justice or equality might be expected to remain stable over time because of early and prolonged experience and learning (Hamlin, 2014), we hypothesize that moral beliefs and attitudes are subject to subtle influence. If preferences such as ideological or political beliefs, which are shaped by learning and socialization, can be altered by subtle changes in framing or by imperceptible contextual cues such as a time constraint (e.g., Rand, Green, & Nowak, 2012), so too can moral attitudes and judgments be altered by subtle, sometimes imperceptible cues.

In what follows, we show how subtle changes in context can influence people's moral attitudes. Specifically, we test the idea that when vivid news accounts of human suffering (famine in Niger) are broadcast in the background but ignored (by people who are distracted), the very act of ignoring leads people to

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perceive lesser moral urgency toward the issues pertinent to the broadcast. Such implicit inferences, we argue, have important implications for moral learning, as well as for our understanding of the influence of morally-relevant messages such as news broadcasts, which are often ignored.

2. Learning morality from our reactions to media

Raising public awareness of and concern for human suffering in humanitarian crises is a longstanding goal of governments and organizations. The most common tool for generating concern about crises like famines, poverty, earthquakes, or civil conflict is mass media, in particular televised and online news coverage. Research suggests that news media can influence individuals' perceptions of and attitudes toward current events. For example, news coverage has been shown to sway the public's image of the poor (Gilens, 1996; Sotirovic, 2001), evoke strong emotional responses to events like terrorist attacks (Ahern et al., 2002; Slone, 2000), and influence the perceived political importance of crises and other issues (Iyengar & Simon, 1993). When covering humanitarian crises, news media often use vivid imagery and portraits of individual victims in an attempt to overcome the pernicious phenomenon of psychic numbing (Slovic, 2007; Slovic, Zionts, Woods, Goodman, & Jinks, 2013), in which apathy and inaction result from descriptions of victims as faceless, large-N statistics.

The evidence for media influence over moral judgments and perceptions focuses on the reactions of individuals who attend to and consequently are influenced by the news. But much of media exposure occurs at the periphery of attention, while we drive, eat, or engage in conversation. An unexplored question is, what happens when vivid news accounts are present in the background, but largely ignored? In the United States this phenomenon is ubiquitous. In restaurants, bars, airports, and doctors' offices, television provides vivid coverage of horrific crises on a 24/7 loop to people who are otherwise engaged in conversation or dividing their attention with a laptop or a phone. Forty-five percent of American homes leave the television on throughout the course of the day; 59% use the Internet (Nielsen, 2010) and 65% eat dinner as the television plays, and 88% of teenagers distract themselves in multiple ways, from texting to homework, in front of the television (Rideout, Foehr, & Roberts, 2010). Online, videos and notifications pop onto the screen as people simultaneously read, watch video, and chat with online friends.

A large body of work in psychology has shown that a person's behavior can influence their attitudes, often in imperceptible ways (Ariely & Norton, 2008; Bastardi & Shafir, 1998; Bear & Bloom, 2016; Bem, 1972; Kiesler, Nisbett, & Zanna, 1969; Ross & Nisbett, 1991). Thus, slight pressure to mislead others about the inherent interest of an otherwise boring task can bring people to believe the task is more interesting (Festinger & Carlsmith, 1959). Similarly, a gentle encouragement to post a pro-environmental sign on one's lawn raises the resident's perceived interest in environmental issues (Freedman & Fraser, 1966). In short, behaving as if your interest is high or low can lead an individual to develop actually higher or lower interest (Darley & Cooper, 1972).

Existing theories of how behavior subtly influences attitudes lead us to an important, if counterintuitive, moral learning prediction – the possibility that providing exposure to human suffering may decrease caring. When broadcasts occur in everyday settings where people turn their attention to the business of eating, talking to their loved ones, staring at their phones, working, or playing while the ever-present media screen flickers in the background, people may infer from their behavior that they care less about the tragedy being broadcast and ignored. By this account, caring is diminished when coverage of a tragedy is relegated to the background and fails to receive full attention. It is diminished not because individuals try to avoid the negative feelings or sense of responsibility that media coverage evokes. Rather, demands on our attention lead us to ignore something otherwise remarkable, and observing ourselves ignore it can shape how we feel.

In the following three studies, we ask whether the experience of ignoring highly alarming and emotionally charged news can decrease an individual's concern about the topic. The issue of the news broadcast – famine – is considered to be a moral issue for affluent viewers who have the choice to respond politically or materially (Singer, 2015). We hypothesize that just as posting a sign can raise individuals' concern for a topic, tuning out an alarming broadcast can lower it. Over and above their initial attitude, ignoring and thereby behaving as though a news topic were of no concern can lead people to perceive the topic as less important. Ignoring may occur passively, such as when we distract ourselves in front of the television (Studies 1& 3), or actively, such as when we choose to "skip" an online video (Study 2). We test both forms of ignoring in the studies below.

3. Study 1

3.1. Method

Participants. University student participants (N = 237) earned course credit or cash payment for participation in a 30-min study advertised as "Global Attitudes and Mood" conducted by researchers at a policy school. The series of experiments were approved by the Institutional Review Board at Princeton University. All participants signed a written informed consent before the study. Five participants attended but failed to complete the study, and their data were never collected.[1] As a result 232 participants (148 female; 47% white, 26% Asian-American, and 9% black) comprise the sample.

Procedure. Participants arrived one at a time at the lobby of a (non-psychology) campus building, furnished with couches, chairs, a table, and a television. They were randomly assigned in advance to one of three conditions: (1) *attention*, (2) *distraction*, or (3) *control*. Participants assigned to the *attention* and *distraction* conditions arrived to find the television playing commercials at a barely audible level (level 8, where 20 makes for comfortable hearing). In the *control* condition, the television was turned off. The experimenter greeted the participant, invited the participant to sit on the couch facing the television, and placed the participant's belongings on one side of the room (to prevent access to items that could distract during the study).

After a consent form was signed, the experimenter explained that she needed baseline skin conductance data prior to the survey portion of the study, and applied three sensors to the participant's arm. (No conductance data were ever collected.) Participants were told that measurement would take 5 min, during which they would need to sit quietly while the information was recorded.

Participants in the *control* condition simply waited, with no television broadcast in the background. In the *attention* and *distraction* conditions the experimenter gave participants brief written instructions before leaving, while the TV was still playing commercials. In the *attention* condition, participants were told they were free to watch TV while they waited. In the *distraction* condition, we employed an illusion-of-choice instruction paradigm to induce distraction that participants would perceive to be self-induced. Participants' feeling of responsibility for self-distraction is central to our prediction that participants will infer attitudes from self-

[1] Reasons for failure to complete the study included allergy to petroleum jelly used in (bogus) skin conductance measure, lack of English fluency, bad hearing, or having signed up for wrong experiment.

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directed action, and in this way our paradigm parallels the logic of classic dissonance and self-perception studies (Bem, 1972; Festinger & Carlsmith, 1959; Kiesler et al., 1969). In the illusion-of-choice instructions, participants were told they were free to watch TV while they waited, but that at some point before leaving they would need to complete a brief task on the laptop placed on the coffee table in front of them. The instructions stressed that participants could do the task while they waited, or else at the conclusion of the study.

As we expected, all but two participants engaged in the optional, distracting task in front of the television when given the opportunity, rather than devoting their full attention to the television and completing the task at the end of the study.[2] The task on the laptop was designed to mimic the experience of a conversation in front of the television. Participants were asked to converse with an Artificial Intelligence bot (http://www.titane.ca/main.html) and to guide it to say a specific word without using the word directly or making the conversation nonsensical.

In the *attention* and the *distraction* conditions, soon after the experimenter left the room the television began broadcasting actual prerecorded news reportage featuring the CNN emblem, about a famine in the African country of Niger. The volume continued at a barely audible level while captions at the bottom of the screen informed viewers of the main facts of interest. The news program displayed scenes of a crying emaciated baby with a swollen stomach and flies on his eyes, mothers on feeding lines, and a child with bony limbs crying as a doctor inserted feeding tubes. It is noteworthy that famine was considered a highly important issue by our sample of control participants (in Studies 1 and 3) who were not exposed to any media: They rated famine an average 6.1 or higher on a 7-point "importance" scale; and they ranked "famine" and "poverty reduction" as the two most important, over seven other issues, including "abortion," "war in Afghanistan," and "ethnic nationalism."

Five minutes after leaving, and before the news program ended, the experimenter re-emerged from a door behind the television, and without looking at the screen, used the remote to turn off the TV explaining that it was time to take the survey. She removed the skin conductance sensors and asked participants to complete the survey and inform her when they were done.

3.1.1. The survey

Perceived importance of hunger, poverty, and "political issues." Participants rated "the importance of political issues" (1 = Extremely unimportant, 7 = Extremely important) in random order. The issues directly related to famine were "Reducing hunger" and "Poverty reduction" ($\alpha = 0.88$). Famine-unrelated issues ($\alpha = 0.40$) were "Preserving wildlife regions," "Environmentally-responsible corporate regulation," "War in Afghanistan," "Ethnic nationalism," and "Abortion rights debate."

Budget. Participants were asked to allocate a proposed percentage of the total US budget among five issues: "Poverty and malnutrition," "Education and arts," "Foreign and crisis relief aid," "Defense and intelligence," and "Bio-diversity and environment."

Mood. Given the highly emotional nature of our stimulus, and because we wanted to gauge whether participants experienced distress as a result of attending to or choosing to ignore it (Kiesler et al., 1969), we inquired about participants' emotions. Mood was described by 26 adjectives taken from the PANAS (Watson, Clark, & Tellegen, 1988), using a five-point scale (1 = not at all, 5 = extremely). Positive adjectives included 15 items such as "content" and "excited" ($\alpha = 0.88$); negative adjectives included 11 items such as "upset" and "guilty" ($\alpha = 0.86$).

4.1. Results

In all experimental comparisons, we use the randomly assigned treatment as the independent variable (i.e., an "intent-to-treat" analysis), and not the extent to which participants complied with the treatment. In the *distraction* condition, for example, mean outcomes include all participants randomly assigned to that condition, including those who may have completed the self-distraction task only partially or not at all, and who may have watched the famine program on the television.[3] This is the unbiased and conservative method for analyzing our data and it is used in all analyses (see Appendix A for a specification excluding those who did not follow instructions). We present all results with and without the covariates of gender and mood. (See Appendix C for model comparisons demonstrating a significantly improved model fit with covariates.)

Supporting our prediction, participants who were distracted during the news broadcast about a famine cared less about famine-related political issues ($n = 89$, $M = 5.92$, $SD = 1.10$; $M_{log} = 1.76$, $SD_{log} = 0.23$) compared to those who watched the broadcast without distraction ($n = 89$, $M = 6.12$, $SD = 0.92$; $M_{log} = 1.80$, $SD_{log} = 0.17$; $B = 0.05$, $SE = 0.03$, $t(226) = 1.80$, $p = 0.07$, $d = 0.24$), and compared to *control* participants who had no exposure ($n = 54$, $M = 6.21$, $SD = 0.82$, $M_{log} = 1.82$, $SD_{log} = 0.14$; $B = 0.07$, $SE = 0.03$, $t(226) = 2.13$, $p = 0.03$, $d = 0.28$), controlling for mood and gender. By contrast, issues unrelated to famine were not rated any differently. These treatment differences are present but become statistically significant in regressions with as opposed to without covariates (see Table 1 for both specifications). There were no significant differences between *attention* and *control* participants in attitudes towards either famine related or unrelated issues. Fig. 1 compares the pattern of effects between conditions for the composite of items related and unrelated to famine; effects are consistent for each individual item.

Differences between conditions in proposed budget allocations to political issues were not statistically significant, although they were in the predicted direction: participants in the *distraction* condition allocated less to "poverty and malnutrition" than did participants in either the *attention* or *control* conditions.

Consistent with the idea that attention to distressing news would depress mood, participants in the *attention* condition reported significantly more negative mood ($M = 1.72$, $SD = 0.60$) than those in the *distraction* ($M = 1.54$, $SD = 0.49$; $t(229) = 2.24$, $p = 0.03$) and *control* conditions ($M = 1.50$, $SD = 0.59$, $t(229) = 2.31$, $p = 0.02$). There were no significant differences in reported positive mood among participants in the three conditions.

One question we could pose is whether the relative indifference towards famine-related issues observed after ignoring the news coverage might be moderated by people's initial attitudes. To avoid priming participants, we did not measure their attitudes toward famine-related issues prior to the experimental treatment. However, we have an indirect measure of the student participants' attitudes, via a listing of their extra-curricular activities. We coded these activities as "service-minded" vs. not: service activities were those that in some way addressed inequality or suffering in the world (e.g., working at a soup kitchen or interning for an anti-war non-governmental organization). We found no moderation

[2] Data from all are included in the analyses. Results do not change when the two participants are excluded, or when the 32 people who engaged in but failed to complete the distracting task are excluded, see Appendix A.

[3] From our survey we were able to determine that 87% of distraction participants vs. 97% of all full-attention participants answered all three questions correctly about "what was on the television" – only 3% of distraction participants did not answer any correctly. Thus, participants who were distracted knew the general nature of the content they were ignoring.

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Table 1
Study 1 results. Study 1 demonstrates that perceived importance of famine-related issues is higher for participants who give their attention to the media coverage of a famine in Niger, and even for participants not exposed to the coverage, compared to participants assigned to be distracted in front of the coverage.

	(1) Famine- related issues	(2) Famine-related issues	(3) Famine- related issues	(4) Famine- unrelated issues	(5) Famine-unrelated issues	(6) Famine- unrelated issues
Distract condition	−0.0613†	−0.0616†	−0.0679*	−0.0367	−0.0356	−0.0387
	(0.0332)	(0.0333)	(0.0320)	(0.0283)	(0.0284)	(0.0280)
Attention condition	−0.0189	−0.0193	−0.0171	−0.0342	−0.0311	−0.0299
	(0.0288)	(0.0339)	(0.0282)	(0.0246)	(0.0289)	(0.0247)
Positive mood		−0.00870	0.0101		0.0183	0.0277
		(0.0209)	(0.0204)		(0.0178)	(0.0179)
Negative mood		−0.00590	−0.00277		0.00233	0.00390
		(0.0229)	(0.0220)		(0.0195)	(0.0193)
Female			0.117**			0.0587**
			(0.0254)			(0.0222)
Constant	2.449**	1.848**	2.231**	1.554**	1.540**	1.380**
	(0.0204)	(0.0686)	(0.0829)	(0.0174)	(0.0584)	(0.0727)
N	232	232	232	232	232	232
R-squared	0.017	0.018	0.103	0.0084	0.0131	0.043
Adjusted R^2	0.0084	0.00074	0.087	−0.00023	−0.00427	0.026

Note: the *control* condition is the baseline condition to which *attention* and *distraction* are compared. Standard errors are in parentheses.
* $p < 0.05$.
** $p < 0.01$.
† $p < 0.1$.

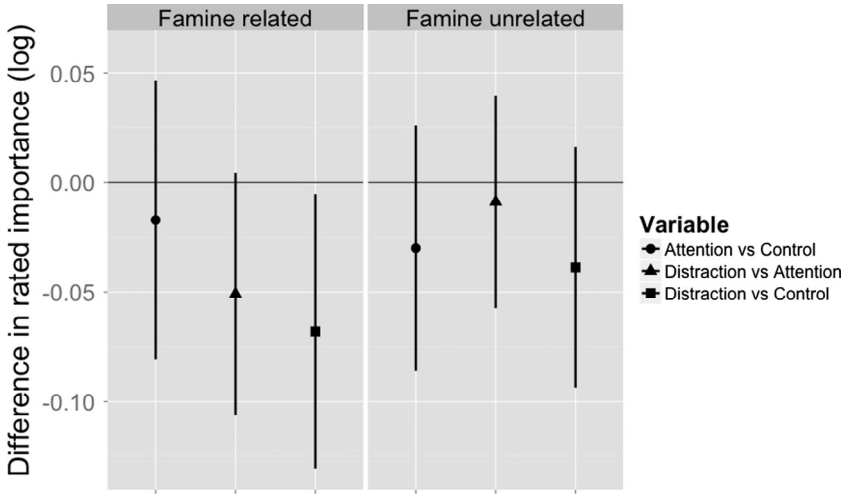

Fig. 1. Difference in rated importance in Study 1. Perceived importance of famine-related issues, but not famine-unrelated issues, is diminished when participants distract themselves in front of media coverage of famine. NOTE: Error bars represent 95% confidence intervals and point estimates are adjusted by covariates listed in Table 1.

effect of one's initial attitudes on attitudes expressed after ignoring the news (see Appendix D).

5. Study 2

In Study 2 we replicate the observed phenomenon in a different media context. The effects of ignoring news media are likely to reach beyond television broadcasts to online media as well. Sixty-one percent of Americans now receive at least some of their news programming online (Pew Research Center, 2013). In the online viewing space, "clicking-away" videos (i.e., pressing a "Skip" button in order to proceed to other desired video content) has become a prevalent form of ignoring messages. To test whether this alternate form of ignoring media might have a similar effect on people's concerns, we extended our television distraction paradigm to a general non-student population of online media viewers, and offered them the opportunity to dismiss an online promotional video for a CNN news special. Study 3 thus explored whether the decision to dismiss an online news video about famine has the same depressing effect on attitudes toward poverty and hunger reduction as the choice, investigated in the previous two studies, to distract oneself in front of the same news on TV.

5.1. Method

Participants. Amazon Mechanical Turk participants (N = 311) signed up for a paid 10-min "Visual processing" study (all US residents; 171 women; 47.42% white; mean age = 30). Sample size was estimated from the effect sizes of Studies 1 and 2.

Stimuli and procedure. The experiment was a 2 (*attention* vs. *dismissal*) × 2 (*promotional video content: CNN famine news promotion vs. Dell computers promotion*) independent factorial design. This design results in random assignment to four distinct experimental

groups (*attention-famine, attention-computers, dismissal-famine, dismissal-computers*).

First, to bolster the visual processing study cover story, participants were asked to view a visual illusion for 15 s and to answer a few questions about the image. Next, participants were asked to watch videos as part of a test of online visual processing. They were presented with a choice of three entertaining 1-min videos[4] accompanied by short descriptions, and were invited to select the video of their choice. Simulating video play on online media platforms, once participants pushed "play" on their chosen video a brief promotional video appeared. In the *famine* condition, the promotional video was a 30-s montage promoting the CNN news special about famine in Niger featured in Studies 1 and 2. In the *computers* condition, the promotional video was a 30-s promotion for Dell computers, which was selected as a neutral comparison unlikely to elicit concern or emotion toward humans.

Half of the participants in each of the two conditions were randomly assigned to the *attention* condition and the rest to the *dismissal* option. For the latter, a button immediately appeared in the lower-right hand corner of the screen, reading "Skip to Video in 8 s." Pressing the button after the passage of 8 s moved participants on to the video they had selected to watch. The promotional famine video was edited so that the first 8 s contained a highly concentrated montage of alarming images and sounds that encapsulated the full news story from Studies 1 and 2. Thus, participants who chose to skip the news video in this study, like those in the distraction conditions of Studies 1 and 2, were aware of the nature of the content they chose to ignore. The dismissal button did not appear for participants assigned to the *attention* condition, who watched the promotional video in its entirety.

Following the video-watching task, all participants filled out the same outcome survey used in Studies 1 and 2, though with a shortened PANAS mood scale and with an extended list of covariates that reflected the fact that the online Mturk population is more diverse in terms of age, income, political ideology and engagement, and education. To make the survey task consistent with the rationale for the study, participants were instructed to detect letters in red font embedded within the survey and to press the corresponding letter on the keyboard whenever they saw a letter in red.[5]

5.2. Results

As predicted, participants in the *dismissal-famine* condition ($n = 96$, $M = 5.58$, $SD = 1.19$, $M_{log} = 1.69$, $SD_{log} = 0.27$) reported less concern for famine-related political issues than those in the *attention-famine* condition ($n = 67$, $M = 6.05$, $SD = 0.89$, $M_{log} = 1.79$, $SD_{log} = 0.16$; $B = 0.11$, $SE = 0.04$, $t(303) = 2.92$, $p = .004$, $d = 0.34$), the two computer conditions combined ($n = 148$, $M = 5.77$, $SD = 1.11$, $M_{log} = 1.73$, $SD_{log} = 0.23$; $B = 0.05$, $SE = 0.03$, $t(303) = 1.92$, $p = 0.055$, $d = 0.27$), and the corresponding *dismissal-computers* condition ($n = 75$, $M = 5.85$, $SD = 1.11$, $M_{log} = 1.75$, $SD_{log} = 0.21$; $B = 0.07$, $SE = 0.03$, $t(290) = 2.04$, $p = 0.04$, $d = 0.24$). A 2×2 ANOVA, another way of looking at these data, shows no main effect of either attention or promotional content, and only an interaction effect of skipping (ignoring) and the topic of famine, where participants presented with the famine promotional video assigned less importance to famine-related issues when they had the option to skip, $F(1,307) = 6.25$, $p = 0.01$ (see Appendix B for the four-condition breakdown and the interaction plot). There were no differences in reported attitudes toward issues unrelated to famine among any of the conditions. As before, we controlled for mood and gender, and due to the wider variety of participants in this sample, we added indicators for income, education, age, and political attentiveness (results were consistent but weaker without these covariates; see Table 2). Fig. 2 compares the pattern of effects between conditions for the composite of items related and unrelated to famine; effects are consistent for each individual item.

Participants in the *attention-famine* condition reported more concern for famine-related political issues than those in the control conditions, and significantly more compared to the *attention-computers* condition ($B = -0.08$, $SE = 0.04$, $t(290) = -2.22$, $p = 0.03$, $d = 0.26$). Though we found a pattern like this in Study 1, it is only significant in this study. Also similar to Study 1, the difference in budget allocation, although not statistically significant, was in the expected direction, with those in the distraction condition allocating less funding to hunger and poverty issues.

Participants in the *attention-famine* condition reported more negative mood and less positive mood than participants in the *dismissal-famine* condition and the dismissal-computer and attention-computers conditions. The differences were not statistically significant. This may be because exposure to the promotional videos was briefer than before, and was followed, in all conditions, by entertaining videos that the participants chose.

One data point of note is how many participants clicked "skip" when given the option. The skip rates for the computer and famine content conditions suggest that participants exposed to the famine content were not, relatively speaking, trying harder to avoid depressing content. In fact, 59% of participants assigned to the famine advertisement chose to skip, compared to 74% of participants assigned to the computers content. (Appendix A shows that analyzing the data based on those who clicked skip rather than those who were assigned to skip does not change the basic results.)

6. Study 3

Study 3 introduced a more naturalistic context intended to mimic everyday distraction in front of the television. Instead of a carefully choreographed illusion of choice paradigm, we simply placed fun and attractive gadgets on a table near a television set, leaving participants free to self-distract. We contrast this distraction situation with a pure control (no exposure) condition.

6.1. Method

Participants. Participants (N = 194) from the same university student subject population (137 female, 37% white) signed up for a 30-min study on "Global Attitudes and Mood".

Procedure. Participants were randomly assigned in advance to one of two conditions: *distraction* and *control*. Participants arrived for a few minutes of leisurely waiting in a room designed to look like a creative working space, with gadgets and magazines spread out across a group meeting table.[6] The experimenter seated each participant at a table, in view of a TV that was positioned in a corner

[4] All videos, featuring entertaining content like animation and robot dancing, were piloted and selected for their equivalence in a separate sample of Mturker ratings of how funny, entertaining, serious, sad, boring, and exciting they found the videos.

[5] There was no significant difference among conditions in participants' answers to "how difficult was it for you to concentrate on the questions while you were looking for red letters?" No red letters appeared in the items measuring the main dependent variables.

[6] Items included Etch-a-Sketch, skee ball, a pile of optical illusion cards, and magazines like *The New Yorker* and *People*.

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Table 2
Study 2 results. Study 2 demonstrates that perceived importance of famine-relevant issues is higher for participants who attend to media coverage of a famine in Niger, and who attend to and who dismiss a comparison promotional video, compared to participants given the option to dismiss a video about the famine in Niger through a "skip" button.

	(1) Famine related issues	(2) Famine related issues	(3) Famine related issues	(4) Famine unrelated issues	(5) Famine unrelated issues	(6) Famine unrelated issues
Dismissal-famine	−0.0414	−0.0503†	−0.0546*	−0.0134	−0.00618	−0.0143
Condition	(0.0293)	(0.028)	(0.0284)	(0.0263)	(0.0256)	(0.0253)
Attention-famine	0.0574†	0.0596†	0.0696*	0.0289	0.0426	0.0370
Condition	(0.0329)	(0.032)	(0.0332)	(0.0296)	(0.0289)	(0.0296)
Positive mood		0.0159	0.0215		0.0573**	0.0541**
		(0.014)	(0.0149)		(0.0130)	(0.0132)
Negative mood		−0.071**	−0.0701**		0.00794	−0.00257
		(0.016)	(0.0169)		(0.0147)	(0.0151)
Political attentiveness			0.0409†			0.0141**
			(0.0213)			(0.00381)
Conservative			−0.0221**			−0.0128*
			(0.00573)			(0.00511)
Income			−0.0167**			−0.00881
			(0.00636)			(0.00566)
Education			−0.00749			0.0164
			(0.0138)			(0.0123)
Age			−0.0274*			−0.0113
			(0.0107)			(0.00948)
Number of clicks			0.0208			−0.00603
			(0.0276)			(0.0246)
Female			0.0130			0.0637**
			(0.0244)			(0.0217)
Constant	1.731**	1.778**	1.960**	1.562**	1.365**	1.217**
	(0.0184)	(0.065)	(0.0932)	(0.0165)	(0.0486)	(0.0830)
N	311	311	311	311	311	311
R-squared	0.0245	0.0833	0.176	0.0057	0.0687	0.172
Adjusted R^2	0.0182	0.0682	0.145	−0.0007	0.0565	0.141

Note: Baseline is two comparison *computer* conditions, combined into one condition. Standard errors are in parentheses.
* $p < 0.05$.
** $p < 0.01$.
† $p < 0.1$.

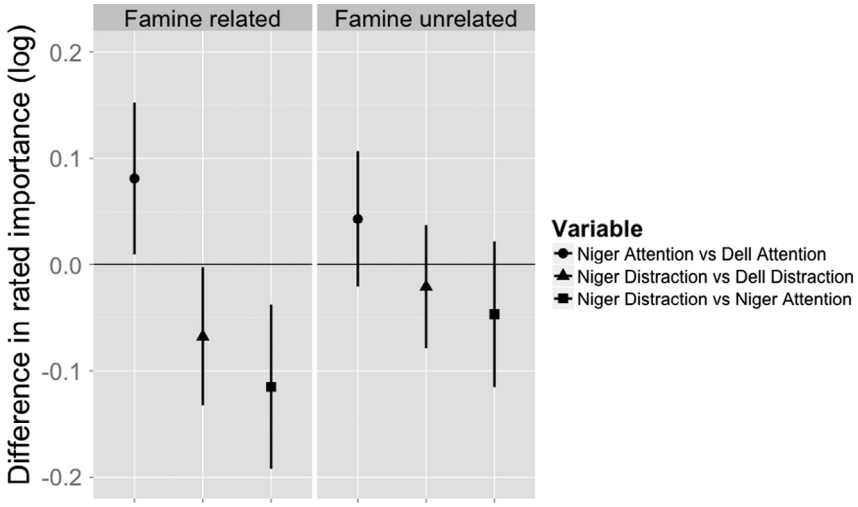

Fig. 2. Difference in rated importance in Study 2. Perceived importance of famine-relevant issues diminishes when participants choose to click-away media coverage of a famine. NOTE: Error bars represent 95% confidence intervals, and point estimates are adjusted by covariates listed in Table 2.

of the room. The TV and the table's contents were positioned on opposite sides of the participants' line of vision, so that participants would have to choose between watching the TV and turning their head to look at the gadgets and magazines. In the *distraction* condition the volume on the TV (volume level 7 out of 20) was fairly low but high enough to allow participants to catch the gist of the programming even if their focus was elsewhere; participants were free to play with the gadgets and read magazines, thus ignoring the TV.[7] This condition presents a true and natural choice between the tele-

[7] According to inspection after they left the room, all but 24 participants rearranged and looked through several magazines and/or played with several gadgets while they waited in the room. Analyses that exclude the few participants in the distraction condition who appear not to have distracted themselves do not change the reported outcomes; see Appendix A.

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Table 3
Study 3 results. Study 3 demonstrates that perceived importance of famine-relevant issues is higher for participants who are not even exposed media coverage of a famine in Niger, compared to participants assigned to be distracted in front of the coverage.

	(1) Famine-relevant issues	(2) Famine-relevant issues	(3) Famine-relevant issues	(4) Famine-irrelevant issues	(5) Famine-irrelevant issues	(6) Famine-irrelevant issues
Distraction condition	−0.0345	−0.0260	−0.101*	−0.00672	−0.000926	−0.0529
	(0.0306)	(0.0307)	(0.0488)	(0.0254)	(0.0257)	(0.0404)
Positive mood		−0.00288	0.00523		0.0250	0.0347†
		(0.0250)	(0.0253)		(0.0210)	(0.0209)
Negative mood		−0.0783*	−0.0693*		−0.0292	−0.0199
		(0.0305)	(0.0304)		(0.0256)	(0.0252)
Noticed TV content			−0.0629†			−0.0446†
			(0.0321)			(0.0266)
Female			0.0575†			−0.0818**
			(0.0331)			(0.0274)
Constant	1.806**	1.898**	1.935***	1.585***	1.565**	1.546***
	(0.0231)	(0.0841)	(0.123)	(0.0192)	(0.0705)	(0.102)
N	194	194	194	194	194	194
R-squared	0.0066	0.0399	0.0732	0.00036	0.0153	0.072
Adjusted R^2	0.0014	0.0247	0.0485	−0.0048	−0.00021	0.048

Note: The *control* condition is the baseline condition to which *distraction* is compared. Standard errors are in parentheses.
* $p < 0.05$.
** $p < 0.01$.
† $p < 0.1$.

vision and other distractions, in contrast to the more constrictive illusion-of-choice paradigm used in Study 1. We expected, given the attractiveness of the distractions on the table, that most participants would self-distract at least part of the time during the 6 min of television programming. Beyond that, participants were free to choose and were given no encouragement in either direction.

In the *control* condition, the TV was turned off. In both conditions, the experimenter returned to the room after 6 min, with a laptop that she had ostensibly gone to fetch in order to start the survey. All participants completed the same survey on the laptop, with the TV turned off, as in Study 1. In the survey, we evaluated whether participants noticed the content of the program (which we could not observe given the naturalistic setup of the study), with the expectation that any effects would be conditional upon participants noticing the broadcast.

6.2. Results

There were 111 participants in the *distraction* condition and 83 participants in the *control* condition. As in Study 1, we used intention-to-treat analyses, and mood and gender as covariates. We also covaried the mean of three questions testing recognition of the broadcast content to control for whether participants in the distraction condition actually attended to the TV broadcast [8]. In contrast with the preceding studies, the present study's more naturalistic paradigm meant that participants could plausibly never even look at the TV screen. Thus, we included the TV content questions as covariates because we did not expect to observe any effect on attitudes among participants who failed to register the content of the TV broadcast in this highly relaxed paradigm.

Supporting our overall prediction, political issues unrelated to famine were not rated any differently between the *distraction* and *control* conditions (see Table 3), whereas participants in the *distraction* condition rated the famine-related issues as significantly less important ($M = 6.02$, $SD = 1.12$, $M_{log} = 1.77$, $SD_{log} = 0.24$) compared to participants in the *control* condition ($M = 6.15$, $SD = 0.85$; $M_{log} = 1.81$, $SD_{log} = 0.15$), $B = 0.10$, $SE = 0.05$, $t(188) = 2.09$, $p = 0.04$, $d = 0.30$. The latter, however, was observed only when controlling for our list of covariates; as was to be expected, the simple contrast between distraction and control participants did not reach significance without controlling for whether participants in the distraction condition actually noticed the TV broadcast.

Participants in the *distraction* condition ($M = 20.71$, $SD = 7.36$) also proposed to allocate significantly less of the U.S. budget to poverty & malnutrition than did participants in the *control* condition ($M = 23.54$, $SD = 7.81$), $B = 4.99$, $SE = 1.78$, $t(188) = 2.80$, $p = 0.006$, $d = 0.41$. There were no differences between conditions in allocation to the other four issues unrelated to famine.

Again, consistent with the idea that some exposure (vs. no exposure) to a sad news program would depress mood, participants in the *distraction* condition (who had just engaged – between gadgets and magazines – in what could be considered fun distraction) reported less positive mood ($M = 2.58$, $SD = 0.62$) than those in the *control* condition ($M = 2.75$, $SD = 0.57$; $t(192) = 1.97$, $p = 0.05$). There was no significant difference in reported negative mood between conditions.

6.3. Discussion

Whereas much social research and commentary have focused on media programming that people attend to (e.g., Iyengar & Simon, 1993; Postman, 1985), psychological analysis suggests that what goes unattended can have its own impact (Wilson, 2002). In this paper, we examined the influence of media broadcasts concerning issues of moral and societal import that are ignored due to simple distraction or to a decision to engage elsewhere. Three studies support our hypothesis that ignoring alarming news about human suffering can lead to diminished concern for issues related to the suffering. Although the size of the documented effects is not large, the effects proved significant for morally-laden issues after only minutes or seconds of exposure in settings that mimicked real world conditions of media consumption. Of course, in real-world settings such exposure is typically more protracted. The finding

[8] Participants answered three multiple-choice questions pertaining to whether they had noticed the TV content: "How would you describe the program that was running on the television?" "Was the program you watched of something current/recent or older/historical?" "Was the program a happy or unhappy program?" ($\alpha = 0.84$). Correct answers were awarded a 1, vs. a 0, and were summed for a score. Distraction participants scored a mean of 1.78.

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Table 4
Pooled results. Pooling the three studies together with a fixed effect for each study, finds that the perceived importance of famine-related issues is significantly lower among participants assigned to the treatment of being distracted in front of the news coverage (study 1 and 3) or choosing to "skip" the video (study 2), compared to all participants who were not in the treatment.

Variables	(1) Famine related issues	(2) Famine unrelated issues
Distraction condition	−0.0492**	−0.0157
	(0.0162)	(0.0141)
Study 2 fixed effects	−0.0593**	−0.0002
	(0.0183)	(0.0159)
Study 3 fixed effects	0.00898	0.0272
	(0.0207)	(0.0180)
Constant	1.805**	1.569
	(0.0152)	(0.0132)
N	737	737
R-squared	0.029	0.0049

Note: All non-distraction (attention) and non-famine (no TV, or computers programming) conditions are combined into the contrast against which all distraction treatments across the three studies are compared. We used fixed effects for each study; Study 1 is the baseline to which Study 2 and Study 3 is compared. Standard errors are in parentheses.
* $p < 0.05$.
** $p < 0.01$.
† $p < 0.1$.

is robust to various manipulations of distraction: as shown in Table 4, pooling data across all three studies (and using no covariate adjustment except for study fixed effects) shows that participants in the distraction conditions cared significantly less about hunger and poverty compared to participants in the full attention and control conditions. This observed decrease in caring cannot simply be attributed to a strategic choice to ignore the broadcast, for then those in the attention condition – who differed from the distraction condition only in that we did not provide them with an explicit distractor -- could presumably have done at least as effective a job at strategically ignoring. The data further suggest that the decrease in caring cannot be attributed to a simple lack of attention: participants who chose to ignore the media content clearly noted the topic of coverage— their care apparently diminished as a result of their observed choice momentarily to ignore the depiction of human suffering.

The malleability of attitudes is partly a function of their strength and of how deeply they were processed (Erber, Hodges, & Wilson, 1995 and references therein). Issues that loom large and that have been carefully considered, such as attitudes towards abortion, become more coherent, more resistant to counterarguments, and thus typically more stable. Other topics, such as the relative importance of foreign aid, have been less thoroughly considered by most people, and thus are likely to prove more malleable. In the current studies, we measured attitudes that are likely to be somewhat malleable, including attitudes toward foreign aid. A simple contextual manipulation – distraction during the transmission of informative messages – brought about a change in this reported attitude. We also manipulated reported attitudes toward the reduction of poverty and hunger more generally, which we further noted in an exploratory analysis did not seem to differentiate between participants who reported involvement in activities dedicated to lessen human suffering and those who did not engage in such activities. Future research can test the extent to which this malleability is suggestive of individuals who have not fully clarified their own attitudes toward such morally laden topics. Alternatively, if some of these attitudes have, in fact, been thought through, what are the moral implications of the fact that they can nonetheless be swayed, even if only temporarily, by minor contextual nuance?

It is worth noting that we took pains to set this study in a realistic context, using three different choice paradigms. Participants had the option to engage in a distracting task while waiting in an actual lobby with a televised news broadcast of human suffering (Study 1); participants had the option to click away (after at least 8 s of exposure) a promotional clip advertising the broadcast (Study 2); and participants found themselves in a context where they could freely distract themselves in front of this same broadcast (Study 3). The data in each study suggest that participants who self-distracted or clicked away from news about a famine reported caring less about issues of hunger and poverty, compared to participants who were not offered easy distraction or a dismissal option, and even compared to participants who watched no programming at all. Furthermore, diminished caring was suggestive of altered decision-making – specifically, advocating for smaller budget allocations for poverty and malnutrition, though this effect was only significant in Study 3.

People who watched the program did not consistently feel worse emotionally. Participants exposed to the program without distraction felt more negative affect than those in the remaining conditions of Study 1, whereas those exposed without a chance to ignore the program did not differ in mood compared to participants exposed to a neutral program in Study 2. In Study 3, those exposed even with a chance to distract felt less positive affect than those not exposed at all. Reminiscent of research on psychic numbing (Slovic, 2007; Slovic et al., 2013), which has documented a remarkably muted response to messages of human suffering, we have observed here a diminished responsiveness to the plight of human suffering once it has been willfully ignored. In some sense, both effects are attributable to our inability to generate a consistent and proportional response to suffering. Feelings do not compound coherently, and inferences can distort. In fact, to the extent that participants arrive already caring for a topic, reducing the level of care may be easier than raising it.

Although the predictions of self-perception and dissonance theories are notoriously difficult to tease apart, our present results strike us as lending themselves more naturally to a self-perception account. According to cognitive dissonance theory, attitude and judgment changes induced by dissonance are typically generated by counter-attitudinal acts yielding negative affect (Cooper & Fazio, 1984). Our mood results do not clearly support the mechanism by which dissonance theory anticipates change, nor is it clear that our subjects engaged – by clicking away or playing with gadgets – in what may be considered genuinely counter-attitudinal actions. On the other hand, the patterns appear consistent with self-perception theory, which predicts that individuals observe their own behavior and mildly adjust their attitudes and judgments accordingly, without experiencing related emotional discomfort (Bem, 1972).

Bombarding individuals with emotionally charged television footage had no consistent impact on their emotional state, nor, most importantly, on how much they cared about the issue. In contrast, broadcasting the television report in a context that induced distraction resulted in diminished caring about the issue. Questions about emotional responses to televised images notwithstanding, the present study, relying on brief and non-repetitive messaging, found it difficult to increase the perceived importance of hunger and poverty, and easier to diminish it.

Related work (Cameron & Payne, 2012) has shown that when people are instructed to suppress compassion this forces tradeoffs in their moral self-concepts, potentially leading to a change in moral identity. The present study, by contrast, introduced a subtle manipulation that was neither explicit nor demanded by an experimenter. We deliberately constructed choice situations that were intended to mirror the demands of divided attention in everyday life. Our studies did not instruct, or even suggest, that partici-

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pants self-distract or ignore the broadcast information. Because of this, participants' purported indifference to human suffering portrayed in the broadcasts, and the inferences that ensued, were attributable to their own choices. A major lesson of attribution research is that people do not infer attitudes or judgments from behaviors that seem to have been forced on them (Bem, 1972). Had participants possessed a compelling account for why they were led to ignore the broadcast not of their own accord, this literature predicts there would have been no need to adjust their attitudes. Instead, perceiving themselves willfully ignoring a news report apparently led to reliable attitude adjustment,

Other work on "strategic ignorance" (Dana, Cain, & Dawes, 2006; Grossman, 2014) shows that avoiding a moral decision or a situation in which prosocial behavior will be requested (Exley & Petrie, 2016) leads to decreased prosocial behavior in the future. This literature focuses on active avoidance – such as going out of one's way to avoid a donation request on the street or to avoid the opportunity to share with a game partner, as opposed to the current focus on passive ignoring, as might occur when having to divide one's attention between a television broadcast and setting the dinner table or texting with a friend. How passive distraction compares with strategic ignorance is a topic worthy of further study. Theoretically at least, strategic avoidance may have opposite effects. Actively avoiding dogs, for example, does not suggest indifference. Straining to avoid an issue might inform an individual that they care a great deal about it – otherwise, they would not expend much energy attempting to avoid it.

Might we end up diminishing the perceived importance of anything that is in the background and passively ignored? We expect not. What may be required for our effect to occur are at least two important ingredients: the perception that one was free to attend to the message, and the belief that the topic mattered enough not to be ignored. The attempt to make sense of our actions arises when the actions matter, and are noticeable. When we ignore cars parked on the street, we think little of it. But when we ignore a car crash, that requires some rationale. When we ignore daily updates about stock market fluctuations this does not lead us to infer we care less about the economy; although ignoring reports about alarming stock market crashes might. And while big news are reported with some regularity, it is the morally charged ones that are likely, when ignored, to generate some adjustment to one's attitudes in order to account for the lack of attending.

Modern 24/7 news cycles emanating from a rich variety of sources all around us while we try to conduct our daily lives create a great deal of opportunity for exhibiting and misinterpreting apparent indifference, and may thus contribute to the troublesome phenomenon of people's failure to respond to great human suffering and to moral crises of conscience (Singer, 2015; Slovic, 2007). Transmitting difficult news to a fully engaged audience may or may not have the intended effect. By contrast, when it is relegated to the background or is easily "skipped", then the transmission of alarming and morally relevant news may actually decrease caring. All else being equal, our data suggest that presenting news of human suffering in a context in which they are likely to be ignored may be worse than providing no news at all. When not paying attention to background news about human suffering, turning off the news may conserve not just energy but concern with suffering as well.

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Appendix A

See Tables A1–A3.

Table A1
Study 1 results. The perceived importance of famine-related issues is higher among participants who attend to media coverage of a famine in Niger, and among participants not exposed to the coverage, compared to participants assigned to be distracted in front of the coverage.

Variables	(1) Famine- related issues	(2) Famine- related issues	(3) Famine- unrelated issues	(4) Famine- unrelated issues
Distraction condition	−0.0920*	−0.0985**	−0.0391	−0.0442
	(0.0381)	(0.0366)	(0.0321)	(0.0316)
Attention condition	−0.0354	−0.0351	−0.0356	−0.0396
	(0.0363)	(0.0357)	(0.0305)	(0.0308)
Positive mood		0.0111		0.0261
		(0.0224)		(0.0193)
Negative mood		−0.00163		0.0313
		(0.0238)		(0.0205)
Female		0.1239**		0.0692**
		(0.0274)		(0.0236)
Constant	1.834**	1.609**	1.592**	1.3680**
	(0.0299)	(0.0926)	(0.0251)	(0.0797)
N	198	198	198	198
R-squared	0.0318	0.127	0.00883	0.0626

Note: the *control* condition is the baseline condition to which *attention* and *distraction* are compared. Standard errors are in parentheses.
We removed 2 participants who did not engage in the bot chat and 32 participants who did not complete it (was not successfully distracted) in the first 5 min for whatever reason.
* $p < 0.05$.
** $p < 0.01$.
† $p < 0.1$.

Table A2
Study 2 results. The perceived importance of famine-relevant issues is higher among participants who attend to media coverage of a famine in Niger, and those who "skip" an unrelated promotional video, compared to participants given the option to "skip" a video about the famine in Niger.

Variables	(1) Famine related issues	(2) Famine related issues	(3) Famine unrelated issues	(4) Famine unrelated issues
Dismissal-famine condition	−0.0308	−0.0740*	−0.00779	−0.0179
	(0.0366)	(0.0403)	(0.0289)	(0.0310)
Attention-famine condition	0.0590†	0.0875*	0.0340	0.0393
	(0.0344)	(0.037)	(0.0272)	(0.0285)
Positive mood		0.0219**		0.0484**
		(0.0173)		(0.0133)
Negative mood		−0.0803**		−0.0154
		(0.0194)		(0.0149)
Political attentiveness		0.0602*		0.0826**
		(0.0239)		(0.0183)
Conservative		−0.0168*		−0.0115*
		(0.00652)		(0.00501)
Income		−0.0216**		−0.00996 +
		(0.00716)		(0.00551)
Education		−0.00965		0.0174
		(0.0156)		(0.0120)
Age		−0.0405**		−0.0128
		(0.0129)		(0.00988)
Female		0.00795		0.0548*
		(0.0277)		(0.0213)
Constant	1.729**	1.978**	1.557**	1.241**
	(0.0202)	(0.1076)	(0.0160)	(0.0827)
N	253	253	253	253
R-squared	0.0202	0.194	0.000825	0.176

Note: The two comparison *computer* conditions, combined into one condition, is the baseline to which *attention-famine* and *dismissal-famine* are compared, for ease of interpretation. Standard errors are in parentheses.
We removed 58 participants who did not click the "skip" button in the dismissal condition.
* $p < 0.05$.
** $p < 0.01$.
† $p < 0.1$.

Table A3
Study 3 results. The perceived importance of famine-relevant issues is higher among participants not exposed to media coverage of a famine in Niger, compared to participants assigned to be distracted in front of the coverage.

Variables	(1) Famine-relevant issues	(2) Famine-relevant issues	(3) Famine-irrelevant issues	(4) Famine-irrelevant issues
Distraction condition	−0.0514	−0.115*	−0.0328	−0.0657
	(0.0334)	(0.0519)	(0.0264)	(0.0410)
Positive mood		−0.0141		0.0183
		(0.0290)		(0.0229)
Negative mood		−0.0895**		−0.0355
		(0.0332)		(0.0262)
Noticed TV content		−0.0593†		−0.0344
		(0.0334)		(0.0264)
Female		0.0547		0.0905**
		(0.0356)		(0.0281)
Constant	1.810**	1.576**	1.609**	1.646
	(0.0250)	(0.0177)	(0.0198)	(0.110)
N	170	170	170	170
R-squared	0.0139	0.0943	0.00906	0.0651

Note: The *control* condition is the baseline condition to which *distraction* is compared. Standard errors are in parentheses.
We removed 24 participants who did not move any toys or magazines by physical inspection after participants left the room.
* $p < 0.05$.
** $p < 0.01$.
† $p < 0.1$.

Appendix B

See Table B1 and Fig. B1.

Appendix C

Model selection.

R-square changes.
For Study 1.
$\Delta R^2 = 0.001$ between model (1) and (2) ($F = 0.12$, $p = 0.89$).
$\Delta R^2 = 0.085$ between model (2) and (3) ($F = 21.42$, $p < 0.001$).
$\Delta R^2 = 0.09$ between model (1) and (3) ($F = 7.58$, $p < 0.001$).
For Study 2,
$\Delta R^2 = 0.06$ between model (1) and (2) ($F = 9.08$, $p < 0.001$).
$\Delta R^2 = 0.07$ between model (2) and (3) ($F = 4.32$, $p < 0.001$).
$\Delta R^2 = 0.13$ between model (1) and (3) ($F = 6.32$, $p < 0.001$).
For Study 3,
$\Delta R^2 = 0.03$ between model (1) and (2) ($F = 3.29$, $p = 0.04$).
$\Delta R^2 = 0.03$ between model (2) and (3) ($F = 3.381$, $p = 0.04$).
$\Delta R^2 = 0.07$ between model (1) and (3) ($F = 3.38$, $p = 0.01$).

Consistent with the analysis on the R-square changes, we also compared AIC (Akaike information criterion) and BIC (Bayesian

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Table B1
Study 2 results with four-condition breakdown. The perceived importance of famine-relevant issues is higher among participants who attend to a promotional video about famine in Niger, or who attend to or dismiss a neutral promotional video, compared to participants given the option, through a "skip" button, to dismiss the promotional video about famine in Niger.

Variables	(1) Famine related issues	(2) Famine related issues	(3) Famine unrelated issues	(4) Famine unrelated issues
Dismissal-famine condition	−0.0558+	−0.0676*	−0.0159	−0.0209
	(0.0344)	(0.0331)	(0.0310)	(0.0295)
Attention-famine condition	0.0431	0.0474	0.0264	0.0257
	(0.0375)	(0.0441)	(0.0338)	(0.0393)
Attention-computers condition	−0.0289	−0.033793	−0.00506	−0.0172
	(0.0367)	(0.0442)	(0.0331)	(0.0394)
Positive mood		0.021725		0.0542**
		(0.0149)		(0.0133)
Negative mood		−0.0703**		−0.00270
		(0.0169)		(0.0151)
Political attentiveness		0.0398+		0.0706**
		(0.0214)		(0.0191)
Conservative		−0.0223**		−0.0130*
		(0.00575)		(0.00512)
Income		−0.0169**		−0.00889
		(0.00637)		(0.00567)
Education		−0.00692		0.0167
		0.0138		(0.0123)
Age		−0.0286**		−0.0119
		(0.0108)		(0.00960)
Number of clicks		0.00503		−0.0140
		(0.0345)		(0.0307)
Female		0.0128		0.0636**
		(0.0244)		(0.0218)
Constant	1.745**	1.989**	1.557**	1.232**
	(0.0258)	(0.101)	(0.0160)	(0.0899)
N	311	311	311	311
R-squared	0.0265	0.178	0.00581	0.173

Note: Dismissal-computers is the baseline to which *attention-famine, dismissal-famine,* and *attention-computers* are compared, for ease of interpretation. Standard errors are in parentheses.
* $p < 0.05$.
** $p < 0.01$.
† $p < 0.1$.

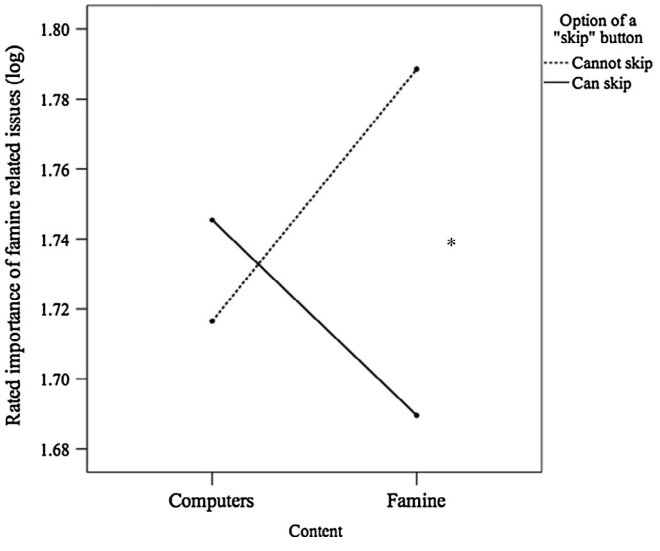

Fig. D1. Study 2 interaction plot. A 2 × 2 ANOVA shows no main effect of either attention or promotional content - only an interaction effect of skipping (ignoring) and the topic of famine, where participants presented with the famine promotional assigned less importance to famine-related issues when they had the option to skip.

information criterion) in each regression model specified in Table 1, 2, and 3. The augmented models (model 3) significantly improve the overall model fit across all three studies.

Appendix D

See Table D1.

Table D1
Attitudes toward the reduction of poverty and hunger more generally do not differentiate between participants who reported involvement in activities dedicated to lessen human suffering and those who did not engage in such activities.

Variables	(1) Study 1	(2) Study 1	(3) Study 3	(4) Study 3
Distraction condition	−0.066*	−0.070*	−0.102*	−0.114*
	(0.032)	(0.034)	(0.049)	(0.049)
Attention condition	−0.014	−0.003		
	(0.033)	(0.035)		
Volunteer	−0.025	0.007	−0.008	0.074
	(0.034)	(0.097)	(0.050)	(0.076)
Positive mood	0.010	0.014	0.005	0.009
	(0.020)	(0.021)	(0.025)	(0.025)
Negative mood	−0.004	−0.005	−0.069*	−0.072*
	(0.022)	(0.022)	(0.030)	(0.030)
Female	0.119**	0.119**	0.058	0.060
	(0.025)	(0.026)	(0.033)	(0.033)
Noticed TV content			−0.063	−0.062
			(0.032)	(0.032)
Volunteer * Distraction		0.008		0.146
		(0.110)		(0.101)
Volunteer * Attention		−0.078		
		(0.110)		
Constant	1.608**	1.596**	1.935**	1.921**
	(0.084)	(0.085)	(0.104)	(0.104)
Observations	232	232	194	194
R-squared	0.105	0.111	0.073	0.084
Adjusted R^2	0.081	0.079	0.044	0.049

Note: the *control* condition is the baseline condition to which *attention (Study 1 only)* and *distraction* are compared. Standard errors are in parentheses.
* $p < 0.05$.
** $p < 0.01$.
† $p < 0.1$.

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References

Ahern, J., Galea, S., Resnick, H., Kilpatrick, D., Bucuvalas, M., Gold, J., & Vlahov, D. (2002). Television images and psychological symptoms after the September 11 terrorist attacks. *Psychiatry, 65*, 289–300.

Ariely, D., & Norton, M. I. (2008). How actions create–not just reveal–preferences. *Trends in Cognitive Sciences, 12*(1), 13–16.

Bastardi, A., & Shafir, E. (1998). On the pursuit and misuse of useless information. *Journal of Personality and Social Psychology, 75*(1), 19.

Bear, A., & Bloom, P. (2016). A simple task uncovers a postdictive illusion of choice. *Psychological Science, 27*(6), 914–922.

Bem, D. J. (1972). Self-perception theory. In L. Berkowitz (Ed.). *Advances in experimental social psychology* (Vol. 6, pp. 1–62). New York: Academic Press.

Berger, J., Meredith, M., & Wheeler, S. C. (2008). Contextual priming: Where people vote affects how they vote. *Proceedings of the National Academy of Sciences, 105*(26), 8846–8849.

Cameron, C. D., & Payne, B. K. (2012). The cost of callousness: Regulating compassion influences the moral self-concepts. *Psychological Science, 23*, 225–229.

Cooper, J., & Fazio, R. (1984). A new look at dissonance theory. In L. Berkowitz (Ed.). *Advances in experimental social psychology* (Vol. 17, pp. 229–262). Hillsdale, NJ: Erlbaum.

Dana, J., Cain, D. M., & Dawes, R. M. (2006). What you don't know won't hurt me: Costly (but quiet) exit in dictator games. *Organizational Behavior and Human Decision Processes, 100*(2), 193–201.

Darley, S. A., & Cooper, J. (1972). Cognitive consequences of forced noncompliance. *Journal of Personality and Social Psychology, 24*, 321–326.

Erber, M. W., Hodges, S. D., & Wilson, T. D. (1995). Attitude strength, attitude stability, and the effects of analyzing reasons. *Attitude Strength: Antecedents and Consequences, 5*.

Exley, C. L., & Petrie, R. (2016). Finding excuses to decline the ask. *Harvard business school NOM unit working paper*, (pp. 16–101).

Festinger, L., & Carlsmith, J. M. (1959). Cognitive consequences of forced compliance. *Journal of Abnormal and Social Psychology, 58*(2), 203–210.

Freedman, J., & Fraser, S. (1966). Compliance without pressure: The foot-in-the-door technique. *Journal of Personality and Social Psychology, 4*, 195–202.

Gilens, M. (1996). Race and poverty in America: Public misperceptions and the American news media. *Public Opinion Quarterly, 60*, 515–541.

Gilovich, T. (1981). Seeing the past in the present: The effect of associations to familiar events on judgments and decisions. *Journal of Personality and Social Psychology, 40*(5), 797.

Grossman, Z. (2014). Strategic ignorance and the robustness of social preferences. *Management Science, 60*(11), 2659–2665.

Hamlin, J. K. (2014). Context-dependent social evaluation in 4.5-month-old human infants: The role of domain-general versus domain-specific processes in the development of social evaluation. *Frontiers in Psychology, 5*, 614.

Iyengar, S., & Simon, A. (1993). News coverage of the gulf crisis and public opinion: A study of agenda-setting, priming, and framing. *Communication Research, 20*, 365–383.

Kahneman, D., & Tversky, A. (2000). *Choices, values, and frames*. Cambridge University Press.

Kiesler, C. A., Nisbett, R. E., & Zanna, M. P. (1969). On inferring one's beliefs from one's behavior. *Journal of Personality and Social Psychology, 11*, 321–327.

Nielsen (2010). *Three screen report: Television, internet and mobile usage in the US.* Vol. 8, 1st Quarter: The Nielsen Company.

Postman, N. (1985). *Amusing ourselves to death: Public discourse in the age of show business*. USA: Penguin.

Rand, D. G., Green, J. D., & Nowak, M. A. (2012). Spontaneous giving and calculated greed. *Nature, 498*, 427–430.

Rideout, V., Foehr, U., & Roberts, D. (2010). *Generation M2: Media in the lives of 8-to 18-year-olds*. Kaiser Family Foundation.

Ross, L., & Nisbett, R. E. (1991). *The person and the situation: Perspectives of social psychology*. New York: McGraw-Hill.

Schwarz, N., & Xu, J. (2011). Why don't we learn from poor choices? The consistency of expectation, choice, and memory clouds the lessons of experience. *Journal of Consumer Psychology, 21*(2), 142–145.

Singer, P. (2015). *Famine, affluence, and morality*. Oxford University Press.

Slone, M. (2000). Responses to media coverage of terrorism. *The Journal of Conflict Resolution, 44*, 508–522.

Slovic, P. (2007). "If I look at the mass I will never act": Psychic numbing and genocide. *Judgment and Decision Making, 2*, 79–95.

Slovic, P., Zionts, D., Woods, A. K., Goodman, R., & Jinks, D. (2013). Psychic numbing and mass atrocity. In E. Shafir (Ed.), *The behavioral foundations of public policy* (pp. 126–142). Princeton, NJ: Princeton University Press.

Sotirovic, M. (2001). Media use and perceptions of welfare. *Journal of Communication*, 750–774.

The Pew Research Center for the People and the Press (2013). The state of the news media 2013: an annual report on American journalism Retrieved from http://stateofthemedia.org/2013/overview-5/.

Watson, D., Clark, L., & Tellegen, A. (1988). Development and validation of brief measures of positive and negative affect: The PANAS scales. *Journal of Personality and Social Psychology, 54*, 1063–1070.

Wilson, T. (2002). *Strangers to ourselves: Discovering the adaptive unconscious*. Cambridge: Harvard University Press.

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