

Is a Refrigerator Good or Evil? The Moral Evaluation of Everyday Objects

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Abstract Certain objects such as family heirlooms are often treated as if they have intrinsic moral qualities, including sacredness and infinite value. Other objects such as instruments of torture are often seen as inherently repellent. Do people also evaluate more mundane objects such as refrigerators as morally good or bad? Here we explore the nature and scope of moral object evaluation through two experiments that asked participants to rate how morally good or bad a large set of familiar objects were. We find that (a) everyday objects tend to be seen as morally positive and (b) unlike mere liking, the moral evaluation of objects is positively linked to the age and political conservatism of the participants. These findings are discussed in relation to research on automatic evaluation, mere exposure effects, and the relationship between affective states and moral judgments.

Keywords Morality · Attitudes · Emotions · Individual differences · Judgment

Typically, moral judgments are reserved for people or their actions. But it is also possible that certain objects themselves come to acquire moral qualities. Objects such as the American flag, religious artifacts, family heirlooms, and sentimental items can be treated as sacred, are hence vulnerable to “desecration,” and are protected against utilitarian tradeoffs such as being exchanged for money (Baron & Spranca, 1997; Bartels & Medin, 2007; Eliade, 1957; McGraw, Tetlock, & Kristel, 2003; Tetlock, 2003; Tetlock, Kristel, Elson, Green, & Lerner, 2000). Other objects, such as instruments of torture or the possessions of an evil person (e.g., Hitler’s sweater), might come to be seen as inherently bad, as morally tainted (Nemeroff &

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Rozin, 1994). We explore here the hypothesis that even everyday objects such as refrigerators acquire moral valence.

This hypothesis is motivated in part by research on automatic evaluation (Bargh & Chaiken, 1992; Bargh & Chartrand, 1999; Duckworth, Bargh, Garcia, & Chaiken, 2002; Ferguson, 2006) and mere exposure effects (Bornstein, 1989; Monahan, Murphy, & Zajonc, 2000; Zajonc, 1968, 2001). Such research demonstrates that we unconsciously judge almost all stimuli that we encounter, even meaningless patterns, as positive or negative, and that simply being exposed to such stimuli contributes to their positive evaluation. While the studies thus far explore *affective* evaluation—having to do with liking and positive feelings—it is possible, following recent research on the role of emotion in morality (Greene, Sommerville, Nystrom, Darley, & Cohen, 2001; Haidt, 2001; Valdesolo & DeSteno, 2006; Wheatley & Haidt, 2005), that exposure might have a similar effect on *moral* judgment. To put it differently, we may moralize certain objects as bad or good in part because we have both the tendency to automatically evaluate all stimuli on an affective level *and* to transform affective valence to moral valence. At the same time, however, we suggest that this moral evaluation does not *reduce* to liking. There is a difference between affective evaluation and moral evaluation, and certain factors, particularly a person's political orientation (Haidt & Graham, 2007), might affect one and not the other.

How might political orientation affect moral evaluation? One possibility is that conservatives may be more judgmental or moralistic than liberals in general. One might predict that a “black-and-white” mentality (see Jost, Glaser, Kruglanski, & Sulloway, 2003b) would lead conservatives to give more *extreme* moral evaluations of everyday objects—some more positive and others more negative than liberals. A second alternative is that everyday objects might be viewed as familiar, tangible products of the socioeconomic status quo. Given that conservatives are also more likely to endorse system-justifying attitudes that seek to preserve the status quo (Jost, 2006; Jost et al., 2003b), this perspective would lead one to predict that conservatives would express generally *higher* moral ratings of everyday objects. A third possibility, which may be consistent with both of the above, could be drawn from the work of Haidt and Graham (2007), which suggests that conservatives have a broader set of foundations for morality than liberals. On this view, which object is viewed as morally better or worse by conservatives might depend on which foundation it maps onto. A flag, for example, might map most strongly onto the ingroup/loyalty foundation. Therefore, conservatives, who are presumably more sensitive to such concerns, would rate it as morally better than a liberal.

In this study, we set out to test our general hypothesis about the moral evaluation of everyday objects and to begin to tease apart these different theories of political morality. Experiment 1 asked participants to rate how morally good or bad they thought items in a large set of familiar objects were. One main prediction was that participants would view such objects as having moral valence and hence would give consistent moral evaluations that would span the range of our scale. More specifically, we predicted that for the subset of the items that were everyday objects (e.g., a refrigerator), participants would give moderately positive as opposed to neutral ratings—that is, we would find a moral mere exposure effect in which objects are judged positively because they are common in the environment. In

addition, we asked whether certain demographic attributes of our participants—their political orientation, age, or gender—would influence their ratings of these items. Our goal was not to directly pit different theories of political morality against one another but simply to explore the relationship between political orientation and the moral evaluation of everyday objects.

Experiment 1

Method

Forty-four passersby (primarily students; age: $M = 29.9$, $SE = 2.0$; political orientation: $M = 3.2$, $SE = 0.2$ on a 1 to 7 scale from very liberal to very conservative) were recruited on the Yale campus and 30 passengers (age: $M = 37.7$, $SE = 3.3$; political orientation: $M = 3.1$, $SE = 0.4$) were recruited at Grand Central train station in New York City.

Participants in the two groups were given identical questionnaires asking them to rate “how morally bad or good” they thought a list of 70 items were on a scale from “1 (Extremely bad) to 7 (Extremely good) with 4 as Undecided or Neutral.” The items were primarily consumer products to ensure that they were sufficiently familiar and were classified into 7 ad hoc categories of 10 items each: (1) ethically charged items (e.g., hybrid cars, SUVs), (2) items associated with social class (e.g., limousine, RV), (3) everyday items (e.g., desk, refrigerator), (4) everyday items associated with self-control (e.g., chocolate, treadmill), (5) extremely charged items (e.g., handgun, life vest), (6) items associated with therapy or artificial enhancement (e.g., allergy medicine, steroids), and (7) other socially loaded items (e.g., high heels, condoms). In general, we tried to balance the items so that participants would see a variety of objects that they could rate as morally good, bad, or neutral. For instance, in category (5) there was an equal number of extremely positively charged items and extremely negatively charged items (see Appendix A for the full list of items organized by category). Note that the set of items did not just include specific objects but also included kinds or categories of objects (e.g., cosmetics, classical music).

The list of items was presented in a pseudo-random order created by randomly drawing items from their categories and keeping any member of that category distant from another by cycling through the set of 7 categories in the same order 10 times. None of the participants were made aware of these ad hoc categories but simply saw a list of 70 items to rate. These categories carried no theoretical weight in the experimental design or analysis of our study aside from helping to structure the order of presenting the items and serving as a broad set of items that we expected undergraduate and lay participants to be familiar with. Half of the items were presented with the items in the reverse order. After rating the items, participants were also asked to rate their political orientation on a scale from “very liberal (1) to very conservative (7).” Although this is an imperfect measure of political orientation, such single-item scales have been shown to be associated with more complex measures of ideology in past work (Farwell & Weiner, 2000; Jost, 2006; Skitka & Tetlock, 1993).

Results and Discussion

Participants' mean moral evaluation ratings of the items were highly correlated across the two sample groups ($r(68) = .96, p < .01$) and presentation orders ($r(68) = .94, p < .01$) and so were collapsed in subsequent analyses.

As predicted, the item ratings spanned the entire range of our moral evaluation scale (from $M = 1.75, SE = 0.15$ for “heroin” to $M = 6.13, SE = 0.13$ for “child car seat”). In addition, participants rated the subset of everyday objects (categories 3 and 4) as moderately positive rather than neutral ($M = 4.93, SE = 0.15$ with 4 as neutral: $t(19) = 6.23, p < .01, d = 1.39$), consistent with “moral mere exposure.”

A multiple regression model analysis of participants' overall rating means on our demographic measures (with $R^2 = .15, p < .01$) also revealed a significant and positive main effect for political orientation ($\beta = 0.34, B = 0.10, SE = 0.03, t(70) = 3.03, p < .01$) and a marginally significant and positive effect for age ($\beta = 0.21, B = 0.01, SE = 0.00, t(70) = 1.83, p = .06$) with no effect for gender ($\beta = 0.02, B = 0.02, SE = 0.11, t(70) = .14, p = .89$). We considered the possibility that the overall effect of political orientation may have been partly driven by certain politically charged items (e.g., handgun) and hence performed a subsequent regression analysis focusing only on participants' overall rating means for the 20 everyday items (categories 3 and 4 and leaving out gender with $R^2 = .10, p = .02$). This showed the same significant pattern of results for both political orientation ($\beta = 0.23, B = 0.10, SE = 0.05, t(71) = 2.01, p < .05$) and also age ($\beta = 0.23, B = 0.01, SE = 0.01, t(71) = 2.07, p = .04$).

These results are consistent with the view that familiar objects benefit from a moral mere exposure effect and they suggest as well that older and more conservative participants tend to rate such objects as more moral than younger or more liberal participants. One important qualification needs to be made here on our occasional use of the term “familiar” objects. The classic mere exposure effect is predicted by *objective* exposure to the stimulus rather than a participant's *subjective* familiarity with it; that is, objects are liked because they are seen frequently, not because they seem familiar (Zajonc, 2001). As this is a correlational study, we do not have any direct measures of participants' objective exposure to our different items. However, the importance of objective exposure is another reason why we focus our attention on our effects with the 20 everyday objects. It seems fairly uncontroversial to claim that undergraduate and lay participants have had a long history of objective exposure to common items such as a desk, bed, and chair. Therefore, we can more confidently propose that our participants' relatively high moral ratings of those items at least may be due to a moral mere exposure effect.

But there are two limitations to this study. First, the participants were not politically diverse—participants on the liberal side of our self-report scale outnumbered conservatives by almost 3 to 1. Second, and more centrally, it is unclear whether these were bona fide *moral* evaluations. Our question was about “how morally bad or good” the items were, but it is possible that our participants found the moral aspect of the question to be confusing and therefore answered based on how much they liked the objects, independent of any moral evaluations.

To address these two concerns, we ran a second study using the same items but drawing on a more representative sample and asking each of the 3 groups of participants a different question: (1) some were asked to rate the *items* on how morally bad or good they thought they were (henceforth, the “MO” group for “moral object”). This is identical to the question asked in Experiment 1. (2) Others were asked to rate how morally bad or good they thought a *person* who liked those items would be (henceforth, the “MP” group for “moral person”). (3) A third group was asked to rate the items on how much they liked or disliked them (henceforth, the “LO” group for “like object”).

The main focus here was to explore the contrast between MO and LO. If the ratings in Experiment 1 reflect moral evaluations, then the positive effects of conservatism and age should be replicated in the MO condition but not in the LO condition. The MP condition was also included to explore the extent to which the MO ratings are truly moral—if an object is judged to be morally good or bad, then it is possible that a person who likes that object will be correspondingly judged as morally good or bad. Hence we predicted that MP and MO would be highly correlated with one another, more so than either of them would be correlated with the LO ratings.

Experiment 2

Method

Forty-eight attendees (primarily students; age: $M = 19.1$, $SE = 0.2$; political orientation: $M = 3.6$, $SE = 0.2$) of a talk by the well-known conservative William F. Buckley, Jr., were recruited on the Yale campus and 66 passersby (age: $M = 39.8$, $SE = 2.0$; political orientation: $M = 4.3$, $SE = 0.2$) were recruited in front of a local Department of Motor Vehicles registry for participation in Experiment 2. Participants at each location were randomly assigned to one of the three conditions: MO, MP, or LO.

The questionnaire in the MO condition was identical to that of Experiment 1. In the MP condition, participants were given the same items and scale but were asked: “For each of the following items, imagine there is a person who likes that item. Please rate how morally bad or good you think that person would be.” In the LO condition, participants were instead asked: “Please rate the following items on how much you dislike or like them. The scale is from 1 (Extremely dislike) to 7 (Extremely like) with 4 as Undecided or Neutral.”

After rating the items, all participants were also asked to record their political orientation on a scale from “very liberal (1) to very conservative (7),” as in Experiment 1. In addition, we added two more scales for libertarianism from “not at all libertarian (1) to very libertarian (7)” and for religiosity from “very secular (1) to very religious (7)” to see whether they might be driving the effect of political ideology in Experiment 1. Using the wording of <http://www.libertarian.org>, libertarianism was defined for participants as “the view that everyone should be free to do as they choose, so long as they don’t infringe upon the equal freedom of others.”

There were no significant effects for either libertarianism or religiosity, however, so these are not discussed further.

Results and Discussion

Once again, participants' mean item ratings were highly correlated across the two sample groups (Yale and DMV) for the three conditions (MO, MP, and LO: $r(68)$'s all $>.71$, $p < .01$) and so were collapsed in subsequent analyses.

Item ratings from the MO condition were highly correlated with those in Experiment 1 ($r(68) = .94$, $p < .01$), suggesting that we had successfully replicated those findings in a more heterogeneous sample (there were 42 conservatives, 42 liberals, 26 moderates, and 4 who did not give their political orientation across the three conditions; see below for an explanation of these labels). Furthermore, we replicated the finding that everyday objects are positively judged ($M = 4.9$, $SE = 0.12$ with 4 as neutral: $t(19) = 7.93$, $p < .01$, $d = 1.77$), as predicted by moral mere exposure.

The mean item ratings in the MO and MP conditions were more tightly correlated with one another ($r(68) = .93$, $p < .01$) than they were with those in the LO condition (MO and LO: $r(68) = .85$, $p < .01$; MP and LO: $r(68) = .86$, $p < .01$; see Fig. 1). The differences between these correlations were statistically reliable, as

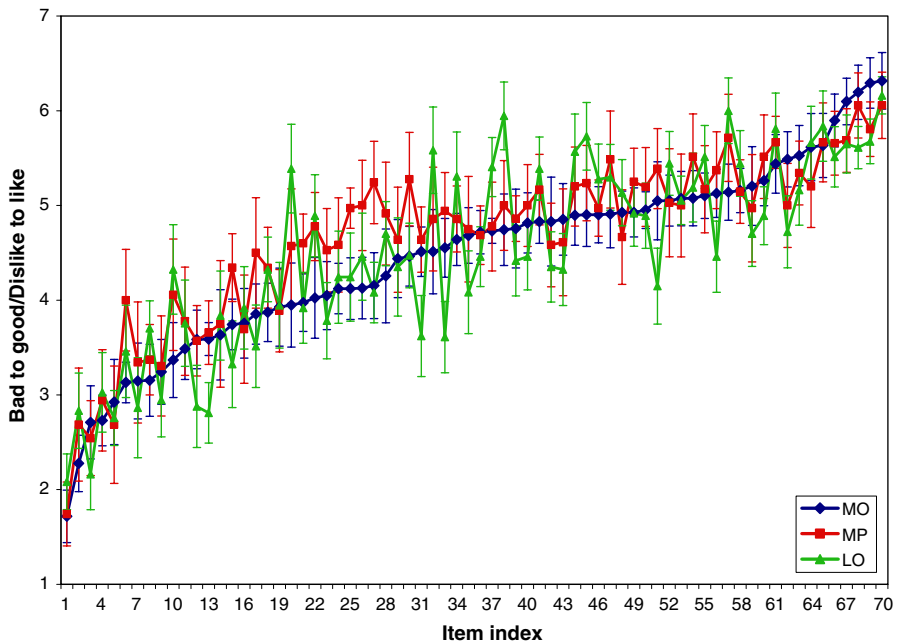


Fig. 1 Mean item ratings in the three conditions (MO, MP, and LO) of Experiment 2 for the 70 items, ranked in order from lowest to highest rating in the MO condition. See Appendix B for a list of the item labels (omitted for clarity). Depending on the condition, the vertical scale is from 1 (extremely bad or dislike) to 7 (extremely good or like). Error bars indicate $+1 SE$

confirmed by the Fisher's Z-transformation (MO/MP r vs. MO/LO r : $p = .02$; MO/MP r vs. MP/LO r : $p < .05$; but not MO/LO r vs. MP/LO r : $p = .80$).

Most relevant here, the positive effects of conservatism and age on overall item means were replicated in the MO condition (political orientation: $\beta = 0.32$, $B = 0.11$, $SE = 0.05$, $t(38) = 2.28$, $p = .03$; age: $\beta = 0.35$, $B = 0.01$, $SE = 0.01$, $t(38) = 2.49$, $p = .02$; $R^2 = .28$, $p < .01$). However, they did not occur in either the MP condition (political orientation: $\beta = 0.07$, $B = 0.05$, $SE = 0.12$, $t(31) = .39$, $p = .70$; age: $\beta = 0.16$, $B = 0.01$, $SE = 0.01$, $t(31) = .90$, $p = .38$; $R^2 = .03$, $p = .63$) or the LO condition (political orientation: $\beta = 0.00$, $B = 0.00$, $SE = 0.04$, $t(29) = -.01$, $p = 1.00$; age: $\beta = 0.11$, $B = 0.00$, $SE = 0.01$, $t(29) = .59$, $p = .56$; $R^2 = .01$, $p = .84$; see Fig. 2).

The same general pattern of results holds for the subset of 20 everyday items. In the MO condition, political ideology ($\beta = 0.25$, $B = 0.13$, $SE = 0.06$, $t(38) = 2.03$, $p < .05$) and age ($\beta = 0.58$, $B = 0.03$, $SE = 0.01$, $t(38) = 4.78$, $p < .01$) predict mean ratings ($R^2 = .47$, $p < .01$). In the LO condition, neither conservatism nor age predicts mean ratings ($R^2 = .02$, $p = .77$). In the MP condition, there is no effect of political ideology, but there is a marginal effect of age ($\beta = 0.31$, $B = 0.02$, $SE = 0.01$, $t(31) = 1.88$, $p = .07$; $R^2 = .13$, $p = .12$).

To further explore the effect of political ideology on moral object ratings, we used our 7-point self-report scale from 1 (very liberal) to 7 (very conservative) to divide participants in the MO condition ($n = 41$) into three groups: liberals (1–3 on the scale; $n = 14$), moderates (4 on scale; $n = 12$), and conservatives (5–7 on scale; $n = 15$). We found a linear increase in mean ratings for both the overall ($F(1, 38) = 7.53$, $p = .01$, $\eta^2 = .16$) and everyday ($F(1, 38) = 5.56$, $p = .02$, $\eta^2 = .13$) set of items from liberals (overall: $M = 4.25$, $SE = 0.09$; everyday: $M = 4.56$, $SE = 0.14$) to moderates (overall: $M = 4.41$, $SE = 0.17$; everyday: $M = 4.99$, $SE = 0.22$) to conservatives (overall: $M = 4.76$, $SE = 0.14$; everyday: $M = 5.24$, $SE = 0.25$; see Fig. 3).

General Discussion

Our findings suggest that people can view objects as having moral valence. In Experiments 1 and 2, participants asked to judge the moral value of a large set of familiar objects gave consistent evaluations that spanned the range of our scale. Common everyday objects such as a refrigerator tended to receive moderately positive rather than neutral ratings, consistent with the notion of a moral mere exposure effect. In both experiments, there was a positive effect of age and conservatism on the moral ratings of objects. Experiment 2 explored this finding further by asking for a different sort of moral rating—a rating of a person who liked the specific item—as well as general liking ratings. The results suggest that the moral ratings of objects do not reduce to liking ratings, as only the former were reliably predicted by the political orientation and age of participants.

The lack of a relationship between the moral ratings of people who liked the items and political orientation is further evidence that the effects of our predictors seem to be specific to the moral evaluation of the *objects* themselves. In addition, although the moral and liking ratings of objects were highly correlated with one

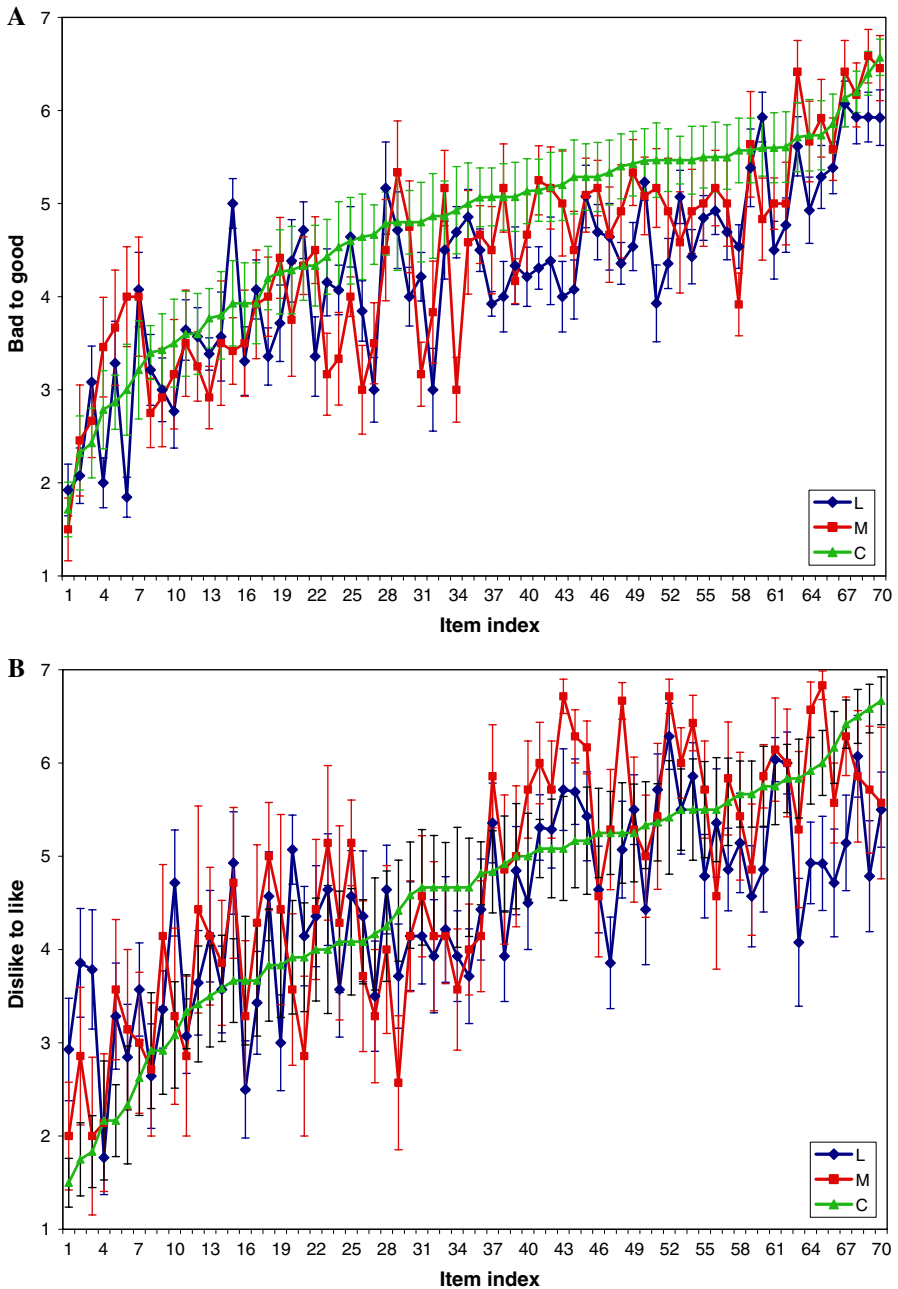


Fig. 2 Mean item ratings in the MO (a) and LO (b) conditions of Experiment 2 for the 70 items, grouped by the political orientation of participants. Participants were divided into three groups based on their self-ratings on a scale from 1 (very liberal) to 7 (very conservative): liberals (1 to 3 on the scale), moderates (4), and conservatives (5 to 7). The item means are ranked in order from lowest to highest rating among conservatives. See Appendix B for a list of the item labels (omitted for clarity). Depending on the condition, the vertical scale is from 1 (extremely bad or dislike) to 7 (extremely good or like). Error bars indicate +1 SE

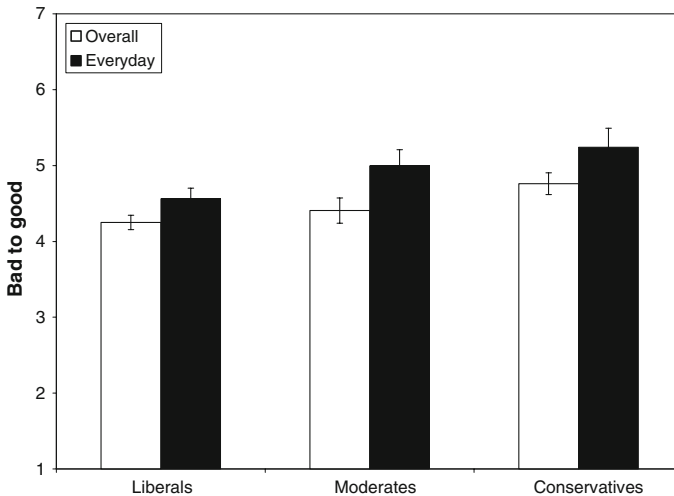


Fig. 3 Mean moral evaluation ratings in the MO condition of Experiment 2 for all 70 or the subset of 20 everyday items, grouped by the political orientation of participants. Participants were divided into three groups based on their self-ratings on a scale from 1 (very liberal) to 7 (very conservative): liberals (1 to 3 on the scale), moderates (4), and conservatives (5 to 7). The vertical scale of moral evaluation is from 1 (extremely bad) to 7 (extremely good). Error bars indicate $+1 SE$

another, the two kinds of moral ratings were still more tightly correlated with one another than with the liking ratings, suggesting that they are indeed valid measures of moral judgments.

What determines the moral value that an object receives? One possibility is a moral version of the mere exposure effect—all other things being equal, positive moral attitudes toward these everyday objects are the result of exposure to them (for correlational evidence of a mere exposure effect on moral judgment in business contexts, see Weeks, Longenecker, McKinney, & Moore, 2005). This might in turn be parasitic on an affective mere exposure effect: positive emotions toward objects might lead to positive moral evaluations. Such a claim is supported by the effect of age; older participants might rank objects higher simply because they have had, on average, more exposure to them (but see Bornstein, 1989, on the limits of increased exposure).

Another possibility, consistent with the above, is that participants relied on a utilitarian calculus in which objects were judged to be morally good when they were viewed to be useful or beneficial and morally bad when they were viewed to be harmful. Vaccines are morally good because they generally bring about benefits to those who use them, and an heroin is morally bad because it generally brings about harm to those who use it. Everyday objects such as a desk fall somewhere in between these two extremes and are moderately good rather than neutral because objects that we see and keep around us everyday tend to be objects that perform some useful function. In other words, what might be leading to both high moral ratings and exposure for everyday objects is our tendency to value and surround ourselves with useful objects.

Neither of the above accounts is fully adequate, however, as neither explains the effects of all our predictor variables. Age did not predict the ratings in the LO condition, suggesting that it is not a factor in affective evaluation more generally. And there is no reason to expect conservatives to be more likely than liberals either to have had experience with items such as refrigerators or to be able to appreciate the utility of their functions. Moreover, neither account explains the tight correlation between ratings of the moral value of objects and the ratings (by a different group of participants) of the morality of people who like these objects.

Consider finally the effects of political orientation. One possibility that we had entertained was that conservatives may be more judgmental than liberals and hence would give more *extreme* moral evaluations of everyday objects—some more positive and others more negative than liberals. This did not occur. Rather, there was a simple monotonic effect, with conservatives judging objects as more morally good than moderates, who judged objects as more morally good than liberals (Fig. 3). In addition, Haidt and Graham's (2007) moral foundations theory appears to be unable to account for why conservatives morally favored a desk or refrigerator more than liberals because such common, everyday objects do not cleanly map onto the three foundations that conservatives are presumed to be more sensitive to (i.e., ingroup/loyalty, authority/respect, and purity/sanctity).

Our results are consistent, then, with the status quo theory discussed earlier, namely that everyday objects are viewed as tangible products of the status quo and therefore may be more morally favored by conservatives who tend to endorse system-justifying ideologies (Jost et al., 2003b; Jost, Nosek, & Gosling, 2008). Instead of seeing things in black and white, it may be that conservatives approach moral evaluations of everyday objects with rose-colored glasses.

A more specific explanation for our political findings—not inconsistent with the status quo account—is that conservatives and liberals have differing intuitions as to the moral value of consumer goods. Almost all of our items are objects that are manufactured and sold for profit, and it might be that our conservative participants are more likely than liberals to endorse free-market capitalism and hence tend to have a more morally positive attitude toward such objects—even though they do not necessarily *like* these objects more than liberals (see Jost, Blount, Pfeffer, & Hunyady, 2003a, for more on conservative endorsement of market ideology). If this were the case, however, one might have expected the participants who rated themselves as more libertarian on our scale—and who would consequently be more likely to endorse free-market capitalism—to also show the positive effect in their moral evaluations of consumer goods. Yet we did not observe any effects of libertarianism on moral or affective evaluation.

These hypotheses about the relationship between political orientation and moral evaluation can be explored in a number of ways. Our ad hoc selection of consumer goods did not allow us to systematically test to what degree conservatives' moral approval of certain individual objects corresponded to the predictions of Haidt and Graham's (2007) moral foundations theory. Pre-testing items in future work to align them with different moral foundations will provide a more direct test of that theory. Further work will also explore whether our findings extend to items that are not consumer goods, such as trees, clouds, and ducks. Although we did not observe

effects of religiosity here, perhaps people who are more religious see such natural kinds as morally better than those who are less religious because they are examples of God's creation. More generally, we see these experiments as the first steps in exploring the nature, origins, and scope of the moral evaluation of everyday things.

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Appendix A

Ad hoc Item Categories

Ethically charged items (category 1): genetically modified foods, organic foods, SUVs, hybrid cars, gasoline, natural gas, fair trade coffee, independent movies, Hollywood movies, rap music.

Class items (category 2): pop music, classical music, Toyota, Lexus, limousine, RV, pickup truck, gold, New York Times, People magazine.

Everyday items (category 3): chicken, bottled water, tap water, chair, desk, bed, jeans, cell phone, television, toilet paper.

Everyday items associated with self-control (category 4): paper, chocolate, pizza, fast food, vegetables, couch, treadmill, refrigerator, weight scale, alarm clock.

Extreme items (category 5): fur, heroin, marijuana, AK-47, handgun, antibiotics, vaccines, child car seat, smoke detector, life vest.

Therapy or enhancement items (category 6): coffee, cosmetics, herbal supplements, steroids, Advil, smart pills ("increase intelligence" was included in parentheses next to this item to clarify its meaning for participants), Prozac, Ritalin, allergy medicine, caffeine pills.

Other loaded items (category 7): mirror, high heels, suit ("clothing" was included in parentheses next to this item to clarify its meaning for participants), cigarettes, alcohol, Playboy magazine, condoms, birth control pills, PC computers, Mac computers.

Appendix B

Item Indices for Figures 1 and 2

Figure 1: heroin (1), cigarettes (2), steroids (3), handgun (4), AK-47 (5), fur (6), caffeine pills (7), smart pills (8), marijuana (9), fast food (10), alcohol (11), Prozac (12), Ritalin (13), Playboy magazine (14), rap music (15), genetically modified foods (16), People magazine (17), gasoline (18), SUVs (19), limousine (20), high heels (21), Lexus (22), RV (23), pop music (24), Mac computers (25), New York Times (26), tap water (27), Toyota (28), fair trade coffee (29), independent movies (30), cosmetics (31), gold (32), herbal supplements (33), Hollywood movies (34), weight scale (35), natural gas (36), television (37), pizza (38), desk (39), birth control pills (40), cell

phone (41), coffee (42), pickup truck (43), chair (44), couch (45), PC computers (46), bottled water (47), chicken (48), alarm clock (49), mirror (50), treadmill (51), chocolate (52), Advil (53), suit (54), jeans (55), organic foods (56), bed (57), paper (58), allergy medicine (59), classical music (60), toilet paper (61), hybrid cars (62), condoms (63), antibiotics (64), refrigerator (65), vegetables (66), vaccines (67), smoke detector (68), life vest (69), child car seat (70).

Figure 2a: heroin (1), cigarettes (2), steroids (3), handgun (4), marijuana (5), AK-47 (6), rap music (7), caffeine pills (8), fur (9), smart pills (10), Prozac (11), alcohol (12), fast food (13), Playboy magazine (14), New York Times (15), Ritalin (16), high heels (17), People magazine (18), pop music (19), tap water (20), independent movies (21), RV (22), limousine (23), Lexus (24), fair trade coffee (25), gasoline (26), genetically modified foods (27), birth control pills (28), alarm clock (29), cosmetics (30), Mac computers (31), SUVs (32), coffee (33), Toyota (34), cell phone (35), desk (36), gold (37), pizza (38), herbal supplements (39), weight scale (40), chair (41), bottled water (42), television (43), Hollywood movies (44), paper (45), chocolate (46), PC computers (47), couch (48), jeans (49), classical music (50), pickup truck (51), chicken (52), Advil (53), mirror (54), organic foods (55), allergy medicine (56), suit (57), natural gas (58), condoms (59), hybrid cars (60), treadmill (61), bed (62), vegetables (63), toilet paper (64), refrigerator (65), antibiotics (66), smoke detector (67), vaccines (68), life vest (69), child car seat (70).

Figure 2b: steroids (1), caffeine pills (2), marijuana (3), heroin (4), Ritalin (5), cigarettes (6), Prozac (7), AK-47 (8), herbal supplements (9), alcohol (10), rap music (11), smart pills (12), genetically modified foods (13), People magazine (14), New York Times (15), handgun (16), Playboy magazine (17), pop music (18), fur (19), coffee (20), cosmetics (21), tap water (22), birth control pills (23), SUVs (24), fast food (25), Mac computers (26), RV (27), organic foods (28), high heels (29), fair trade coffee (30), gasoline (31), pickup truck (32), desk (33), treadmill (34), weight scale (35), independent movies (36), Advil (37), natural gas (38), hybrid cars (39), allergy medicine (40), Hollywood movies (41), bottled water (42), couch (43), gold (44), chocolate (45), classical music (46), Toyota (47), limousine (48), television (49), Lexus (50), cell phone (51), bed (52), jeans (53), vaccines (54), suit (55), condoms (56), PC computers (57), vegetables (58), mirror (59), chicken (60), antibiotics (61), pizza (62), alarm clock (63), chair (64), life vest (65), paper (66), refrigerator (67), child car seat (68), smoke detector (69), toilet paper (70).

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