MORALITY MATTERS IN THE MARKETPLACE: THE ROLE OF MORAL METACOGNITION IN CONSUMER PURCHASING

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To better understand the seemingly inconsistent influence of consumers' morality on their marketplace behaviors, we apply insights from research on attitude moralization to the consumer domain. That is, rather than pre-defining certain products as "moral," this approach treats morality as the extent to which individual consumers metacognitively perceive their positive product attitudes as rooted in moral (vs. non-moral) considerations. Across multiple studies ($N = 1,105$), a wide variety of product categories, and multiple methodological approaches (i.e., correlational, experimental, and longitudinal), we show how the degree to which consumers perceive a moral basis for their product attitudes robustly predicts their intended and actual marketplace behaviors. Importantly, these findings hold above and beyond overall attitudes, other metacognitive assessments (e.g., certainty and ambivalence), and explicit product quality. By extending prior research in moral social cognition to the consumer domain, we provide a more refined account of morality's role in consumer behavior.

Keywords: morality, metacognition, consumer behavior

Although psychologists are aware of the strong and consistent impact that people's moral beliefs can have on their relevant social and political attitudes and

behaviors (Kovacheff, Schwartz, Inbar, & Feinberg, 2018; Skitka, Washburn, & Carsel, 2015), research in consumer decision-making has questioned morality's influence on marketplace outcomes (see Campbell & Winterich, 2018). Whereas some studies show that people prefer purchasing products when they have attributes that reflect typical domains of ethical consumerism (e.g., Mohan, Schlager, Deshpandé, & Norton, 2018; Peloza, White, & Shang, 2013), a bevy of other work suggests that morality has little to no influence on marketplace behavior (e.g., Paharia, Vohs, & Deshpandé, 2013; Reczek, Irwin, Zane, & Ehrich, 2018). Indeed, some researchers go so far as to argue that "the notion of the ethical consumer is little more than a myth that belies the reality of individual behavior" (Devinney, Auger, & Eckhardt, 2010; p. 4).

In the present work, we draw on attitudes and social cognition research from moral psychology to advance a new framework for examining morality's impact in consumer behavior, which more clearly demonstrates the influential role that morality can have in the marketplace. Specifically, we examine consumer morality through the lens of consumers' individual *moral metacognitions*, whereby the more consumers perceive that their attitude has a moral basis, the more strongly they exhibit corresponding purchase intentions and behavior.

CONSUMER MORALITY

Theorizing in moral psychology often paints morality as a central feature of human life. Indeed, people tend to view moral beliefs as objective (Goodwin & Darley, 2008), and see morality as a trait fundamental to a person's identity (Strohminger & Nichols, 2014). Through these qualities (and others), moral beliefs are distinct from personal preferences and conventional norms (Skitka et al., 2015), comprising judgments of what is ultimately "right" and "wrong."

With these defining features, it may seem that individuals differ in their idiosyncratic sets of moral beliefs; however, much of the consumer research on morality has examined it as a *product-level characteristic* (e.g., Irwin & Naylor, 2009; Paharia et al., 2013; Reczek et al., 2018). That is, to determine whether morality influences consumer behavior, researchers have examined the extent to which consumers prefer products with or without characteristics such as sustainable production or fair-trade certification. However, this approach of pre-defining products as moral or not might be a misleading perspective on consumer morality, for it assumes consumers necessarily and universally agree that certain product characteristics are morally relevant. For example, if someone chooses a conventionally grown strawberry instead of an organically grown one, this may not reflect a rejection of the ethically superior option. Instead, the consumer might simply not consider "organic" a morally relevant characteristic of fruit. Thus, when consumers inconsistently prefer "ethical" options, it is unclear whether this means that morality has an unreliable effect on consumerism (as some consumer researchers have assumed) or whether the presented options unreliably reflect morally relevant considerations.

In addressing this issue, some research has taken an *individual differences* approach to ethical consumerism. However, this perspective can be problematic

for similar reasons. First, some research taking this point of view has treated ethical consumerism as a broad dispositional trait (e.g., Sudbury-Riley & Kohl-bacher, 2016), grouping together different kinds of "moral" considerations (e.g., environmental sustainability, fair trade, etc.) as a single dimension of "consumer morality." However, like pre-defining a product as moral, this approach pre-defines these consumer domains as morally relevant. Other individual difference approaches avoid this issue by looking specifically at one product attribute that may convey morality (e.g., eco-friendliness; Haws, Winterich, & Naylor, 2014) and asking consumers to indicate how *important* these attributes are to themselves and their consumption behavior. However, this introduces its own issues as well because "importance" need not have anything to do with a consumer's morality. For example, whereas some consumers may indeed find environmental sustain-ability important for moral reasons (e.g., protecting the environment is an ethical obligation), others may find it important for purely pragmatic reasons (e.g., we need sustainable resources to provide for our growing population).

Thus, despite the insights gleaned from this previous research, to really under-stand morality's influence in the marketplace, the present work draws on recent innovations in moral psychology to advocate a new perspective for consumer morality research. That is, we propose consumer morality is best construed as an idiosyncratic, *metacognitive* perception that people can have about their consumer attitudes.

ATTITUDE MORALIZATION

A person's attitude toward a product or service (i.e., his or her summary evalua-tion) has long been shown to reliably predict behavior and intentions, especially when that attitude is strong (Luttrell & Sawicki, 2020; Petty & Krosnick, 1995). One reliable way to identify strong attitudes is to measure people's metacogni-tive assessments of their attitudes (Fabrigar, Wegener, & MacDonald, 2009), where metacognition refers to people's evaluations or perceived qualities of their own thoughts (Petty, Briñol, Tormala, & Wegener, 2007).

A wealth of prior research shows that consumers regularly engage in the meta-cognitive assessment of their attitudes and beliefs, which plays a vital role in their purchase intentions and behavior. For example, the more consumers perceive *certainty* in their attitude (i.e., metacognitively appraise their attitude as valid; Rucker, Tormala, Petty, & Briñol, 2014), and the less they perceive *ambivalence* (i.e., metacognitively appraise their attitude as mixed or conflicted; Priester & Petty, 1996), the more likely they are to act on their attitude (Costarelli & Colloca, 2004; Laroche, Kim, & Zhou, 1996). Distinct from these types of secondary evaluations, however, consumers can also metacognitively assess the underlying *basis* of their attitudes (i.e., the underlying factors that contribute to their overall evaluation), which can influence consumer behavior independent of the attitude's true origins (Barden & Petty, 2008; Teeny & Petty, 2018).

In the present research, we consider the effect of attitude *moralization*, or metacog-nitive perceptions that one's attitude is based on moral considerations (Skitka et al.,

2015). For example, two consumers might both have a positive attitude toward fair trade products; however, one might perceive that positivity to stem from non-moral considerations (e.g., it will be a better quality product), whereas the other might perceive their positivity to stem from moral considerations (e.g., it is ethically right to pay workers fair wages). From this example, it is clear that simply buying "fair trade" products does not necessarily connote "ethical consumerism." Indeed, for social and political issues, people vary in how much they perceive a moral basis for their attitudes, and mounting evidence has shown that the more people perceive a moral (vs. non-moral) basis for an attitude, the more they engage in attitude-consistent behavior (see Skitka et al., 2015). Indeed, recent research has emphasized this metacognitive nature of moralization, showing that the mere perception that one's attitude is based in morality can increase the attitude's strength (e.g., enhance its resistance to persuasion; Luttrell, Petty, Briñol, & Wagner, 2016).

Importantly, this metacognitive perspective on the role of morality in one's attitudes offers an advantage over another common measurement approach to morality, one characterized as assessing "moral evaluations" or "moral judgments." In this approach, people are asked to evaluate a stimulus from "morally bad" to "morally good." However, this approach forces respondents to use moral labels even if they do not themselves moralize their attitude and confounds moralization with the person's summary evaluation of the object (i.e., whether they are generally negative or positive toward it). Thus, for any relationship observed between these "moral judgments" and some other variable, one cannot draw any conclusions about whether it is driven by the degree to which the person moralized their attitude, the valence and extremity of the attitude itself, or some combination of these orthogonal dimensions. By considering moralization as a metacognition, however, one can draw conclusions about the effects of basing one's attitude in moral beliefs over and above effects of the evaluation itself. That is, the attitude is a primary cognition (e.g., "I support fair trade products") and the judgment of moral basis is a cognition about the primary cognition—a meta-cognition (e.g., "my pro-fair trade attitude is based on morality").

Although taking this metacognitive perspective on morality has proven valuable for predicting relevant behaviors in various domains (see Skitka et al., 2015), notably, it has not yet been tested in the consumer domain. However, unlike other domains, such as politics, in which attitude moralization seems deeply connected to people's behavior (e.g., Kovacheff et al., 2018), moral considerations—even when assessed metacognitively—might play a minimal role in informing consumers' intentions and behaviors (as evidenced in our earlier literature review). That is, both companies and consumers are encouraged to maximize their self-interest to get the best exchange rate possible (Aggarwal, 2004; McGraw, Schwartz, & Tetlock, 2012), which stands in contrast to morality's function to regulate (or suppress) self-interested motivations (Gino, Schweitzer, Mead, & Ariely, 2011). Therefore, despite mounting evidence that moralized attitudes tend to be particularly predictive of relevant behavior in some domains, it remains possible that they have a negligible impact in the consumer domain, especially in light of other factors more relevant to consumers' self-interest (e.g., the product's quality).

RESEARCH OVERVIEW

The present work is the first to apply the previously discussed insights from moral psychology to consumer behavior in order to better capture the role that moral considerations play in people's purchase decisions. By focusing on people's meta-cognitive perceptions about the moral basis of their consumer attitudes, we refine previous approaches that treated ethical consumerism as an inherent feature of certain types of products. As a result, the present work can test whether there is something unique about moral considerations in the consumer domain or, if not, help account for why morality has previously exhibited an inconsistent influence in the marketplace. Moreover, this research provides a strong test of how impact-ful moralization is for engaging in attitude-relevant behavior by examining the importance of moral attitude bases in the face of other variables shown to critically impact consumer choices (e.g., perceived product quality or other metacognitive evaluations, like certainty and ambivalence). Across six studies, we measure and manipulate perceived moral attitude bases and examine the effects on purchase intentions and future purchase behavior. Moreover, we control for other estab-lished attitude strength attributes, such as certainty and ambivalence, as well as other important consumer factors (e.g., product quality) to determine the unique role that morality can play in the marketplace.[1] Data, analysis scripts, and full stimuli and question wordings are available at this project's page on the Open Sci-ence Framework: https://osf.io/7x95t/.

STUDY 1

As an initial test of attitude moralization's implications for consumer behavior, we identified four product categories, each of which varied in how much peo-ple would perceive their attitudes to be guided by ethical concerns: eco-friendly household cleaners, electric cars, fair-trade coffee, and made-in-America clothing. In pilot testing, people tended to have positive overall attitudes toward these cate-gories, while varying in the extent to which that positivity was perceived to rest on moral beliefs. If consumers do reliably use their morality for determining market-place outcomes, we should expect that greater perceptions of moral attitude bases would correspond to greater intentions to purchase attitude-relevant products.

   We also measured other attitudinal factors with a history of influencing con-sumer behavior: the extremity of consumers' attitudes (Spears & Singh, 2004) and two commonly assessed metacognitive attributes: attitude certainty (Rucker et al., 2014) and subjective ambivalence (Priester & Petty, 1996). It was particularly important to control for these relationships, because they might be more influen-tial than morality in consumer decision-making and/or they might conceptually overlap with moralization. To this latter point, previous research has shown that

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1. Across studies, we focus on product categories for which people tend to have positive attitudes, given the presumed applied interest in increasing purchasing behavior. However, just as perceiving a stronger moral basis for a positive attitude should increase behavioral intentions, perceiving a stronger moral basis for a negative attitude presumably should decrease behavioral intentions. We return to this point in the General Discussion.

although moralization tends to correspond with certainty and ambivalence, its effects are empirically unique from these other constructs (Luttrell, Petty, Briñol et al., 2016; Luttrell & Togans, 2021; Philipp-Muller, Wallace, & Wegener, 2020; Skitka, Bauman, & Sargis, 2005). Therefore, to show that moralization predicts additional variance in purchase intentions beyond these other impactful attributes, we measure and control for them in all analyses.

METHOD

Participants and Design. One-hundred eighty-seven participants (female = 45.5%; M_{age} = 35.2) completed the survey on Amazon's Mechanical Turk (AMT) for $0.75.[2] This sample size allowed 80% power to detect rather small regression effects (f^2 = .04) if we had assessed attitudes toward only one topic; expanding the design to four topics provides additional observations per person.

Procedure. Each participant responded to all four product categories. For each one, participants first reported their attitudes and then their perceptions of ambivalence, certainty, and moral bases. Finally, they reported their purchase intentions. They completed all questions about one product category before moving to the next, and the order in which product categories were presented was randomized for each participant.

Measured Variables. Attitudes toward each product category (i.e., eco-friendly household cleaners, electric cars, fair-trade coffee, and made-in-America clothing) were assessed using four semantic differential scales anchored at –5 (Negative, Bad, Unfavorable, and Dislike) and +5 (Positive, Good, Favorable, and Like). Internal reliability was good for these four items in each product category (αs > .97), so we averaged them to form indices for each type of product.

Next, participants reported how much they perceived their attitudes to be ambivalent by rating how conflicted they were about each product category on a 5-point scale anchored at "Not at all conflicted" and "Extremely conflicted." They reported their degree of certainty by rating how sure they were that their opinions about each product category were correct, using a 5-point scale anchored at "Not sure at all" and "Extremely sure." They reported how much they perceived a moral basis for their attitude by rating the extent to which their attitude about each product category was "a reflection of your core moral beliefs and convictions" on a 5-point scale anchored at "Not at all" and "Extremely." These measures were adapted from prior research measuring these three variables together (Luttrell, Petty, Briñol et al., 2016).

Purchase intentions were assessed with three items adapted from Spears and Singh (2004): "To what extent do you intend to buy [product category] in the

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2. For AMT studies, we exclude observations from IP addresses appearing more than once in the dataset (1% to 11% of responses). All reported sample sizes reflect the number of participants after implementing this exclusion.

TABLE 1. Means and Standard Deviations for Measured Variables in Study 1

	Attitude	Moralization	Certainty	Ambivalence	Importance	Purchase Intentions
Study 1						
Eco-Friendly Household Cleaners	3.18 (1.91)	3.25 (1.15)	3.58 (1.01)	1.61 (0.93)	—	3.75 (0.94)
Electric Cars	3.04 (2.20)	3.13 (1.19)	3.66 (0.99)	1.70 (0.93)	—	3.21 (1.02)
Fair Trade Coffee	2.41 (1.98)	2.84 (1.19)	3.13 (1.22)	1.52 (0.88)	—	3.17 (1.07)
Made-in-America Clothing	2.98 (1.93)	3.05 (1.14)	3.58 (1.05)	1.55 (0.89)	—	3.76 (0.87)
Study 2						
Made-in-America Clothing	3.26 (1.69)	3.39 (1.14)	3.68 (1.05)	2.37 (1.38)	3.34 (1.20)	3.94 (0.71)
Organic Food	2.95 (1.96)	3.31 (1.20)	3.70 (0.99)	2.57 (1.39)	3.28 (1.23)	3.76 (0.93)

future?"; "How likely are you to buy [product category] in the future?"; and "How interested are you in purchasing [product category]?" The first two questions' response scales were anchored at "Definitely will not" (1) and "Definitely will" (5), and the third was anchored at "Very low interest" (1) and "Very high interest" (5). Responses to these three questions showed good internal reliability across topics (αs > .89) and were thus averaged to form composite purchase intention indices. Descriptive statistics for all variables are presented in Table 1.

RESULTS AND DISCUSSION

In the following analyses, both for this study and the subsequent studies, the nature of the survey software allowed respondents to proceed even if their responses were incomplete. We assume that the few missing responses were random, and so we present the results in entirety for which we have the data. In testing models with multiple variables, we present results for participants who provided responses to all variables in that model.

Overall Effect on Purchase Intentions. In order to generalize across the four product categories, data were analyzed using mixed effects models, using the R packages, lme4 (Bates, Mächler, Bolker, & Walker, 2015) and lmerTest (Kuznetsova, Brockhoff, & Christensen, 2017), which conducts t-tests using Satterthwaite approximations for degrees of freedom. Predictor variables were mean-centered within product type.[3] Reported results are the fixed effect coefficients.

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3. Leaving the predictors uncentered does not change the statistical significance of the results, nor does allowing the slope of moral bases to vary randomly by product category.

To test whether moral attitude bases predicted purchase intentions over and above the effects of attitudes and other attributes, we submitted the data to a model entering moralization, attitudes, certainty, and ambivalence as simultaneous predictors of purchase intentions. The model specified random intercepts for product category and participants. As expected, perceiving one's attitude to have a more moral basis was uniquely associated with stronger purchase intentions, $B = .23$, $t(664.9) = 8.09$, $p < .001$ (Figure 1).[4] Results of this model also supported a unique positive effect of attitude extremity, $B = .22$, $t(683.5) = 13.70$, $p < .001$, and certainty, $B = .13$, $t(679.7) = 4.73$, $p < .001$, but not ambivalence, $B = -.01$, $t(604.4) = -.25$, $p = .80$.

Together, these results provide initial evidence that viewing one's product attitudes as based on moral concerns is consistently associated with greater intentions to purchase those products, independent of other important attitude features (such as extremity, certainty, and ambivalence), suggesting that even in the consumer domain, morality has a reliable relationship with intentions when considered from this metacognitive perspective.[5]

STUDY 2

Having established that perceived moral bases for consumer attitudes are associated with purchase intentions, Study 2 aimed to clarify two key points. First, although Study 1 demonstrated the role for perceived moral bases over and above certainty and ambivalence, another commonly measured attitude attribute may ultimately be responsible for the moralization effect: perceived importance (Krosnick, 1989). Although prior research has found effects of attitude moralization when controlling for importance (e.g., Aramovich, Lytle, & Skitka, 2012; Skitka et al., 2005), in the consumer domain, it may be that perceiving a greater moral basis for one's attitude toward a product ultimately means the person considers that product to be more *important*, which is why they would express stronger purchase intentions. We thus included a measure of perceived importance alongside certainty and ambivalence in Study 2.

One may also wonder whether the effects in Study 1 are simply attributable to social desirability biases. That is, people who have a tendency to give socially desirable responses may be more likely to report moral bases for these types of products and also to report intentions to purchase those products, producing what appears

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4. Because this study included multiple product types, we could conduct additional analyses to see whether the reported effects of product-specific moralization might be better construed as stemming from a broader disposition to moralize consumer products. Although there is a slight tendency for general consumer moralizing to predict product-specific purchase intentions, product-specific moral bases remain the stronger predictor (see Skitka et al., 2005, for similar evidence that effects of perceived moral bases for specific attitudes are robust when controlling for generalized moralization across political issues). See the online supplement for a full report of these analyses.

5. In a separate sample, we wanted to replicate these findings with a new population and slightly altered product categories. Consequently, 316 undergraduate students participated in a procedure nearly identical to that of Study 1. Once again, consumer attitude moralization significantly predicted purchase intentions, $B = .15$, $t(1091.4) = 7.50$, $p < .001$ above and beyond attitudes, certainty, and ambivalence. See the online supplement for details.
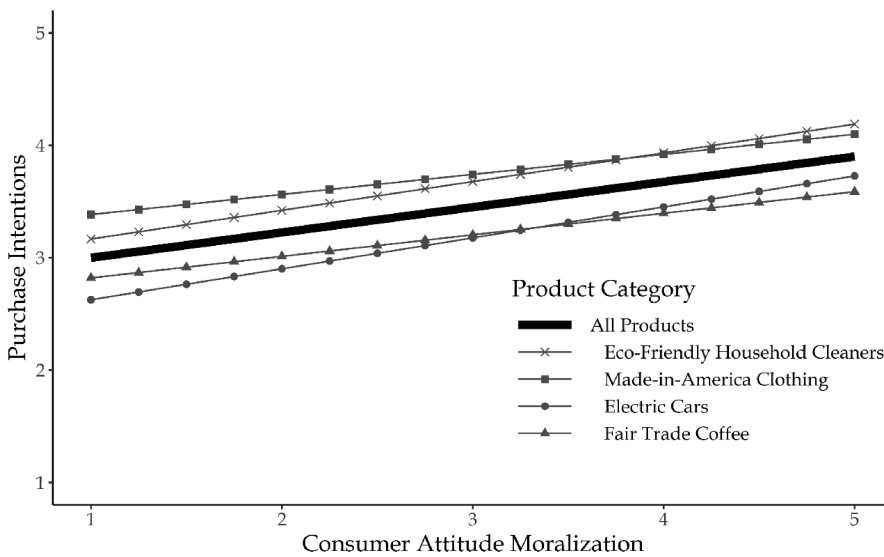
FIGURE 1. Consumer attitude moralization and purchase intentions. The dark, solid regression line is the overall estimated fixed effect of moralization. The narrower, gray lines are plotted from the random intercept and slope coefficients from a mixed effects model estimating the effect of moralization at the mean levels of attitudes, certainty, and ambivalence toward each type of product.

to be a direct relationship between moralization and product intentions. This seems relatively unlikely because we showed in Study 1 that perceived moral bases for a *specific* product attitude were uniquely predictive of purchase intentions when controlling for each person's average tendency to express moral attitude bases (see footnote 4). That is, if the hypothesized effects were due primarily to socially desirability biases, the individual differences would have been more predictive. Nevertheless, to further rule out this potential confound, we included a measure of socially desirable responding in Study 2 to use both as a covariate and to test as a moderator (i.e., perhaps evidence for our hypotheses only emerges among people with a relatively strong tendency to give socially desirable responses).

METHOD

Participants and Design. Two-hundred participants (female = 45.5%; M_{age} = 35.2) completed the survey on AMT for $0.45, and this sample size allowed for 80% power to detect rather small regression effects (f^2 = .04).

Procedure. The procedure was modeled closely on Study 1. Each participant responded to two product categories: organic food and made-in-America clothing. For each one, participants first reported their attitudes and then their perceptions of ambivalence, certainty, importance, and moral bases. Finally, they reported

their purchase intentions. Participants completed all questions about one product category before moving to the next, and the order in which the product categories were presented was randomized for each participant. Finally, all participants completed a questionnaire designed to measure socially desirable responding.

Measured Variables. Attitudes, ambivalence, certainty, and moral bases were measured as in Study 1. Internal reliability was again good for both attitudes (αs > .93) and purchase intentions (αs > .80).

For the novel measures in this study, we assessed participants' perceived importance for each product category as well as their dispositional tendency to provide socially desirable responses. To assess perceived importance, we asked: "How important is [topic] to you personally?" Participants responded using a 5-point scale anchored at "Not at all important" and "Extremely important." See Table 1 for summary statistics. To assess socially desirable responding, we included Reynolds's (1982) 13-item version of the Marlowe-Crowne questionnaire (Crowne & Marlowe, 1960). All items are simple True/False questions for which one response is more socially desirable than the other but is also relatively unlikely to be objectively accurate if the person is being honest. For example, one item is: "I am always courteous, even to people who are disagreeable." In this case, responding "True" puts oneself in the best light but is unlikely to be strictly true of the person (i.e., no one is "always" courteous). To compute an index of socially desirable responding, we counted the number of items on which a participant provided the socially desirable response with scores ranging from 0 to 13 ($M = 5.89$; $SD = 2.76$).

RESULTS AND DISCUSSION

To begin, we first assessed whether our novel items (i.e., perceived importance and socially desirable responding) were related to perceptions of moralization. Indeed, the more people perceived their attitudes as important, $r = .80$, $p < .001$, and the more likely they were to report socially desirable responses, $r = .22$, $p = .003$, the more they tended to report moral bases for their attitudes. We thus included these measures as additional covariates in our model to test whether moral bases were associated with purchase intentions over and above these other variables.

We submitted the data to the same mixed-effects model as Study 1, entering socially desirable responding and perceived importance in addition to moralization, attitudes, certainty, and ambivalence as simultaneous predictors of purchase intentions. Because socially desirable responding is an individual-level characteristic, we only allowed intercepts to randomly vary by product category. In these analyses, we once again found that perceiving one's attitude to have a more moral basis was uniquely associated with stronger purchase intentions, $B = .11$, $t(382.0) = 3.05$, $p < .001$. Results of this model also supported independent effects of attitude extremity, $B = .25$, $t(382.0) = 14.64$, $p < .001$, ambivalence, $B = -.05$, $t(382.0) = -2.40$, $p = .02$, and importance, $B = .15$, $t(382.0) = 4.34$, $p < .001$. There was no independent effect of certainty, $B = .03$, $t(382.0) = .90$, $p = .37$, nor of socially desirable responding, $B = -.01$, $t(382.0) = -1.03$, $p = .31$. Thus, these analyses provide further evidence that the

moralization of one's attitude predicts purchase intentions above and beyond other relevant attitude features and social desirability.

As an additional way to assess the potential role of social desirability biases in these findings, we also tested whether the tendency to give socially desirable answers moderated the unique relationship between moralization and purchase intentions. That is, perhaps it is only people with a general tendency to give socially desirable survey responses who demonstrate correspondence between reporting moral attitude bases and reporting intentions to purchase a given product. To test this, we submitted the data to another mixed-effects model predicting purchase intentions, entering moralization, mean-centered socially desirable responding, and the corresponding two-way interaction term as predictors. As before, we also controlled for attitudes, certainty, ambivalence, and importance. Results from this model do not support a moralization × socially desirable responding interaction, $B = -.001$, $t(381.0) = -.17$, $p = .87$.

Together, these results provide additional evidence for a relationship between moralizing one's attitudes toward consumer products and intentions to purchase those products. This relationship was not due to the perceived importance of participants' attitudes nor was it reducible to a simple social desirability bias.

STUDIES 3A AND 3B

In the previous studies, we showed that people's perceptions of a moral basis for their attitudes toward specific product categories was associated with how much they intended to make related purchases—even above and beyond their attitude's extremity and perceptions of certainty, ambivalence, and importance. However, this evidence was correlational, limiting our ability to make strong causal claims about the unique effects of consumers' moralized attitudes. Thus, in the next set of studies, we adapt a procedure used to experimentally manipulate perceptions of moral attitude bases (Luttrell, Petty, Briñol, & Wagner, 2016). By randomly assigning participants to view their attitudes as having a moral or non-moral basis, we not only test the causal impact of moralization, but we can also more strongly test whether the mere metacognitive perception of one's attitude as morally based is sufficient to produce more attitude-congruent behavior.

As a secondary interest, because prior research has established concrete versus abstract construal as a meaningful distinction for both attitudes (e.g., Ledgerwood, 2014) and moral judgments (e.g., Eyal & Liberman, 2012), we also explored whether the influence of attitude moralization depended on the abstractness of the product category in question. To that end, we used a relatively concrete, specific attitude object ("eco-friendly household cleaners") in Study 3a and a relatively more abstract attitude object ("recycling") in Study 3b.

METHOD

Participants and Design. Both studies drew on samples from AMT and paid $0.60 for participating. In Study 3a, there were 124 participants (female = 44.4%;

M_{age} = 36.8). In Study 3b, there were 186 participants (female = 45.7%; M_{age} = 34.5). Combining data from these studies provides 80% power to detect between-group t-test effect sizes as small as d = .32. Because both Studies 3a and 3b used identical methods (differing only in the focal topic), their procedures will be described jointly below.

Procedure. Participants read a brief description of the study's topic ("eco-friendly household cleaners" in Study 3a and "recycling" in Study 3b) in order to provide an equivalent foundation for all participants' responses. Afterward, participants were asked to list as many thoughts as they could about their specific topic using text-boxes provided to them (up to a maximum of ten) before they advanced to a new page. Here, participants learned their responses in the previous text boxes would be digitally analyzed and compared to other participants who had completed this survey. Once the computer had finished this "processing," participants were randomly provided one of two canned responses.

To manipulate perceived attitude basis, half of the participants learned that their thoughts about the topic were based much more on the dimension of *morality* than others who had taken the survey. The other half learned that their thoughts were based much more on the dimension of *practicality* in comparison to others. We chose "practicality" as the control feedback because it reflects a non-moral, but important basis for consumer attitudes that has been used in previous studies (e.g., Kreps & Monin, 2014). By using control feedback that can be considered a legitimate, self-interested basis for consumer opinion, we allowed a stricter test of moral attitude bases' unique effects on purchase intentions.

Finally, participants completed the dependent measures: attitudes toward the topic, purchase intentions, and the perceived basis of their attitude (i.e., the manipulation check). In line with previous work that has used this type of manipulation on AMT's less naïve sample (Luttrell, Petty, Briñol et al., 2016; Teeny & Petty, 2018), we also included a measure to determine the extent to which participants believed the false feedback provided to them. Concluding the study, participants were debriefed and provided their code for payment.

Measured Variables. In Study 3a, participants' attitudes toward eco-friendly household cleaners were measured with three semantic differential scales anchored at –5 (Negative, Bad, Unfavorable) to +5 (Positive, Good, Favorable). In Study 3b, participants responded to the same questions, albeit about their attitudes toward recycling and on 9-point scales. Because different scale lengths were used, these measures were standardized and averaged within each study (3a: α = .96; 3b: α = .93) and then combined for joint analysis.

After reporting overall attitudes, participants responded to the same three measures as in Study 1 capturing their intentions to purchase eco-friendly household cleaners (Study 3a) or consumer products made with recycled resources (Study 3b). The internal reliability of these measures was high (3a: α = .94; 3b: α = .90), so we formed individual composites that were later combined for an overall analysis.

Finally, we included several measures to test the effectiveness of our manipulation. Two measures were used to assess how well the manipulation affected participants' perceived attitude bases, worded in a way meant to reduce demand effects: "Regardless of your feedback, to what extent were your thoughts about [focal topic] related to your [moral beliefs and convictions/practical concerns]" (anchored at 1 "Not at all" to 9 "Extremely"). On a separate page, to determine the extent to which participants believed the crucial false feedback, we also asked: "To what extent would you say that the feedback we provided was accurate?" (1 = "Extremely inaccurate"; 9 = "Extremely accurate").

RESULTS AND DISCUSSION

We combined the samples from each study (total $N = 310$; practical condition = 158; moral condition = 152) and included Study (3a vs. 3b) as a covariate to account for any differences between samples or product type. Across all outcome measures, no significant interactions with Study emerged (i.e., the effects were statistically equivalent between samples/topics, $ps > .25$), so effects of this variable will not be discussed further.

Before examining the primary outcome measures, we submitted the data to a 2 (Attitude basis: Moral vs. Practical) × 2 (Study: 3a vs. 3b) between-subjects ANOVA on participants' belief in the feedback they received. Results showed an unintended effect such that those receiving practicality feedback ($M = 6.97$; $SD = 1.61$) reported believing that information somewhat more than those receiving morality feedback ($M = 6.22$; $SD = 2.27$), $F(1, 306) = 14.32$, $p < .001$, $\eta^2 = .040$. To ensure that our key results were not reducible to mere differences in feedback belief, we mean-centered this variable and entered it as a covariate in the following analyses, thus testing the manipulation's effects controlling for levels of perceived feedback accuracy. As such, we report the estimated marginal means in the following results.

To check whether the feedback manipulation unintentionally affected the extremity of participants' attitudes, we submitted attitudes to a 2 (Attitude basis) × 2 (Study) ANCOVA as described above. As anticipated and consistent with prior work using this manipulation (Luttrell, Petty, Briñol, & Wagner, 2016), we found no significant differences ($M_{moral} = .08$ vs. $M_{practical} = -.06$), $F(1, 305) = 1.58$, $p = .21$, $\eta^2 = .005$.

Next, we tested the effect of attitude basis on the manipulation checks. First, those who received moral ($M = 6.35$; $SE = .18$) versus practical ($M = 5.77$; $SE = .18$) feedback reported greater moral attitude bases, $F(1, 305) = 5.22$, $p = .02$, $\eta^2 = .02$. Similarly, those who received the practical ($M = 7.37$; $SE = .14$) versus the moral ($M = 6.83$; $SE = .14$) false feedback perceived their attitude to be more based on practicality, $F(1, 305) = 7.39$, $p = .007$, $\eta^2 = .02$.

Most central to our hypotheses, we found that those led to view their attitudes as morally based reported greater intentions to purchase these products ($M = 3.94$; $SE = .07$) than those led to perceive a practical attitude basis ($M = 3.72$; $SE = .07$), $F(1, 305) = 4.69$, $p = .03$, $\eta^2 = .02$. To determine whether the influence of

moral (vs. practical) feedback on purchase intentions can be explained through perceptions of moral attitude bases, a mediation pattern was tested using the statistical package *mediation* (Tingley, Yamamoto, Hirose, Keele, & Imai, 2014), entering study and feedback belief as covariates. In this model, and replicating the previous study, the more people reported a moral basis for their attitude, the more they reported intentions to purchase the relevant type of products, $B = .17$, $t(305) = 8.15$, $p < .001$. Most relevant to documenting mediation, however, a significant indirect effect of the manipulation on purchase intentions via reported moral attitude bases emerged, tested with a bootstrapping method with 10,000 iterations, $B = .05$, 95% CI: [.01, .10]. It is worth noting that the effect of the manipulation on purchase intentions became nonsignificant when self-reported attitude moralization was included in the model, $B = -.05$, $t(305) = -1.01$, $p = .31$. Moreover, the effects of perceived moral attitude bases remained significant when adding perceived practical attitude bases to the model, and there was no unique indirect effect of the manipulation on purchase intentions via perceived practical bases, $B = .00$, 95% CI: [−.02, .02].

Overall, this study provides causal evidence for the unique influence of moral metacognitions on attitude-relevant purchase intentions. Even when participants had the same degree of positivity toward a product, the perception that their attitude was based on moral (vs. non-moral) qualities increased their likelihood of purchasing relevant products.

STUDY 4

Thus far, we have provided both correlational and experimental evidence for the impact of people's perceived moral attitude bases on consumer outcomes, but we have so far only demonstrated morality's influence on purchase *intentions*. Although intentions tend to be strongly correlated with actual behavior (Ajzen, 2008), some have emphasized that intention-behavior relationships are imperfect (Sheeran & Webb, 2016), especially in the domain of ethical consumerism as it is typically studied (Carrington, Neville, & Whitwell, 2014).

In Study 4, we wanted to extend the prior findings, examining whether attitude moralization also predicts people's reports of their actual purchasing behaviors at some point in the future. Although there is some evidence that perceived moral bases for political attitudes are associated with reports of one's actual behavior (Skitka & Bauman, 2008) and that more moralized attitudes tend to be more stable over time (Luttrell & Togans, 2021), we are not aware of any prior evidence directly showing that attitude moralization prospectively predicts behavioral reports at some point in the future. Thus, we employed a longitudinal design in which we used people's reported degree of moral basis for their attitudes toward organic food at Time 1 to predict reports of whether they had purchased organic food two months later. Not only does this allow us to measure the extent to which consumer morality predicts self-reported behavior, but it also allows us to test for the first time the ability of attitude moralization at one moment to predict later instances of

consumer behavior—even in the face of other important attitude dimensions (e.g., certainty, ambivalence, etc.).

METHOD

Participants and Design. In total, 575 students (female = 46.6%, M_{age} = 19.4) responded to an initial survey during an online mass testing session at the beginning of an academic semester at a large Midwestern university, and 110 of those participants responded to an email follow-up survey two months later.[6] Participants received research participation credit in their class for their involvement. The final dataset provided 80% power to detect an effect of moralization as small as f^2 = .07 A multiple logistic regression analysis showed that none of our predictor variables were associated with whether or not a participant completed the follow-up survey, ps > .30.

Procedure. Survey 1 was administered online and included measures of respondents' attitudes toward organic food, how much they perceived a moral basis for those attitudes, and other important attitudinal features. Two months later, participants received an email invitation to complete a follow-up online survey. Embedded in this follow-up survey was a measurement of how often participants had purchased organic food over the previous month.

Measured Variables. Time 1 attitudes toward organic food were measured using three 7-point semantic differential scales anchored at "bad," "negative," and "against" at the low end and "good," "positive," and "in favor" at the high end. Good internal reliability (α = .92) allowed us to average these measures to form a composite index of participants' attitudes.

In strengthening the reliability of the items of Study 1, we used more robust measures of certainty and subjective ambivalence, drawn from prior research. That is, we used seven items to capture participants' certainty (Petrocelli, Tormala, & Rucker, 2007) and three items to capture participants' ambivalence (Priester & Petty, 1996), all on 7-point scales. Both question sets had high internal reliability (α = .92 and α = .74 respectively) and were thus averaged to form indices of these attitude perceptions. Additionally, we measured another predictor of an attitude's impact: the consumer's perceived knowledge (Kallgren & Wood, 1986). This dimension was captured with a single question asking people how "well informed" they were about organic food (7-point scale). Perceived moral attitude bases were assessed using the same measure as in Study 1, albeit on a 7-point scale.

Because these data come from a larger project examining the effects of attitude dimensions on various outcomes, we had just one question assessing the extent to

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6. These data are from a larger study on organic food attitudes. Unrelated analyses using the same dataset were reported by Luttrell, Petty, and Briñol (2016) and by Wallace and colleagues (2020), neither of which examined moralization.

which people purchased organic food at Time 2: "How much organic food have you purchased in the past month?" Responses were provided on a 4-point scale anchored at "None" and "A lot." Prior work using a similar approach to assessing self-reported consumer behavior has shown that responses to such questions are generally accurate when compared to objective indicators of purchase behavior (e.g., Chan, 2001).

RESULTS AND DISCUSSION

First, correlation analyses revealed that greater purchase behavior was associated with more positive attitudes, greater perceptions of moral bases, greater certainty, less ambivalence, and more knowledge (Table 2).

Next, the data were submitted to a multiple linear regression model predicting Time 2 reports of having purchased organic food. Time 1 attitudes, perceived moral bases, certainty, ambivalence, and knowledge were submitted as simultaneous predictors. Results showed that greater perceptions of morality underlying one's attitude at Time 1 were uniquely associated with greater reports of having purchased organic food two months later, $B = .11$, $t(88) = 2.51$, $p = .01$. Results also supported unique effects of attitude extremity, $B = .19$, $t(88) = 2.79$, $p = .01$, and certainty, $B = .18$, $t(88) = 2.37$, $p = .02$; however, ambivalence and knowledge did not emerge as unique predictors of Time 2 purchase reports, ps $> .20$. Thus, these results further support the independent relationship between perceived moral attitude bases and subsequent consumer behavior.

STUDY 5

Across correlational, experimental, and longitudinal designs, we have provided consistent evidence that metacognitions about the moral bases of individuals' attitudes are associated with purchase intentions and behavior. Thus, with this final study, we wanted to pit morality's effects against an especially important dimension in consumer choice: perceived product quality (e.g., Bao, Bao, & Sheng, 2011). In reporting their purchase intentions in Studies 1–3 or completed purchases in Study 4, participants may have been assuming that the products they intended to purchase or did purchase would be reasonably high in quality and thus morality added additional motivation once quality needs were satisfied. Alternatively, people may assume that more "ethical" products are also higher in quality. Thus, in Study 5, we provided participants with a consumer product that varied in whether it had received poor, average, or favorable online reviews in order to manipulate perceptions of product quality independent of a product's morally relevant attributes. This approach allowed for the possibility that the effects of attitude moralization are moderated by perceived product quality. Whereas the positive effects of moralization on purchase intention perhaps occur only when the product seems reasonably high in quality, an explicitly low-quality product may nullify the otherwise positive impact of moral concerns.

TABLE 2. Descriptive Statistics and Raw Correlations for All Measured Variables in Study 4

Variable	1	2	3	4	5	6
1. Attitudes	1.00	–	–	–	–	–
2. Moralization	0.12	1.00	–	–	–	–
3. Certainty	0.54**	0.12	1.00	–	–	–
4. Ambivalence	–0.29**	0.23*	–0.36**	1.00	–	–
5. Knowledge	0.34**	0.04	0.66**	–0.32**	1.00	–
6. Purchase Behavior	0.47**	0.25**	0.49**	–0.22*	0.33**	1.00
M	5.33	2.78	4.13	2.92	3.53	2.14
SD	1.34	1.74	1.50	1.22	1.67	0.89

Note. *$p < .05$; **$p < .01$. These correlations are tested only for participants who completed both waves of data collection.

The study's design also allows us to extend our prior findings by looking at purchase intentions toward a *specific* product, rather than more general product categories. That is, perhaps moralized attitudes are especially influential at the level of product type, guiding consumer intentions toward general product categories without being able to predict reactions to any particular product (cf. Davidson & Jaccard, 1979). Using the same measures from the previous studies, we examined whether perceived moral bases for attitudes toward a product category predict purchase intentions toward a specific product within that category. Importantly, in addition to measuring self-reported purchase intentions, we included a behavioral measure of participants' interest in purchasing this product by offering them the option to (ostensibly) join a mailing list with promotional offers.

METHOD

Participants and Design. One hundred and eighty-two participants (female = 39.0%; M_{age} = 32.08) were drawn from AMT and were paid $0.30 each for their responses. This sample size provided 80% power to detect regression effects as small as f^2 = .05.

Procedure. Participants began the study by rating their attitude and perceived moral basis toward eco-friendly consumer products. Subsequently, participants learned they would be participating in an online shopping scenario, where they were introduced to a real company called "*Canvaspop*," whose organization was said to be environmentally friendly. Participants learned that they would be evaluating a specific product (a wallet) from *Canvaspop*, and they indicated whether they would be more interested in purchasing men's or women's wallets. They then saw information about a congruently gendered item in a format closely mimicking online shopping webpages: They saw an image of the wallet, its specifications

(e.g., its size), its cost ($26.00), and its star-ratings/reviews—the latter feature serving as our experimental manipulation.[7]

Although the product summary always featured the same name, description, and picture of the wallet, the product's average review was either listed as 1.5 stars, 3 stars, or 4.5 stars out of 5. Additionally, a sample review was provided in full, whose product quality content was congruent with the average star rating displayed on screen. For example, in the 1.5-star version, the reviewer commented that there were few things s/he liked about the wallet, and after a month, the stitching was already in poor shape. In the 3-star version, the reviewer liked some aspects of the wallet and found the stitching to be in OK shape. For the 4.5-star version, the reviewer liked nearly every aspect of the wallet and commented on how the stitching was still in great shape. At the end of each review, its author mentioned the wallet's eco-friendly construction. After reading about the product, participants completed the primary outcome measures, after which participants were debriefed and given their code for payment.

Measured Variables. At the outset of the study, participants provided their attitude and moral basis for three product categories (to reduce initial suspicions about the study's focus), one of which was relevant to the consumer good they would shortly learn more about: eco-friendly products. To assess attitudes, participants responded to two semantic differential scales anchored at –3 (Dislike, Oppose) to +3 (Like, In Favor). These two measures were highly correlated ($r = .84$, $p < .001$) and were averaged to form a composite. To measure perceived moral attitude bases for this product category, we used the same measure as in our previous studies.

After reading about the wallet and its reviews, participants' intentions to purchase that specific *Canvaspop* wallet were measured with the same three questions used in prior studies (tailored to this attitude object), averaged to form an index of purchase intentions ($\alpha = .94$). Additionally, as a manipulation check, participants reported the perceived quality of the wallet on a 5-point scale anchored at "Very low quality" (1) and "Very high quality" (5).

For our behavioral measure, after participants believed the study had ended (i.e., immediately prior to the debriefing page and after the demographics survey), we asked: "In the future, would you be interested in receiving a one-time email about *Canvaspop* wallets? It would include further information and a discount to purchase some of their products." Participants responded with "Yes, I would like an email" or "No, I would not like an email."

RESULTS AND DISCUSSION

As an initial test of whether our manipulation properly affected the perceived quality of the wallet, we submitted the three conditions (1.5-star vs. 3-star vs.

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7. Although the men's and women's wallets differed in both images and specifications, all other information was held constant. Importantly, purchase intentions did not differ by wallet type, $t(180) = .62$, $p = .53$. However, we still entered the wallet's target gender as a covariate in all analyses, but results remain significant without this covariate.

4.5-star) to a one-way ANOVA on perceived quality. Results showed an overall effect, $F(2,178) = 38.11$, $p < .001$. Tukey's post-hoc tests revealed that those who saw the 3-star wallet ($M = 3.36$; $SD = .93$) rated it to be of higher quality than those who saw the 1.5-star wallet ($M = 2.52$; $SD = 1.15$), $p < .001$; and similarly, those who saw the 4.5-star wallet ($M = 4.05$; $SD = .84$) rated it to be of higher quality than those who saw the 3-star wallet, $p = .001$.

Turning next to the effects of product reviews and moral bases on purchase intentions, we submitted the data to two multiple regression models. To account for the three conditions, we used indicator coding, creating two new dummy-coded variables, treating the 4.5-star condition as the reference group. These two dummy-coded variables, mean-centered attitudes toward eco-friendly products, mean-centered attitude moralization, and the type of wallet (i.e., for men vs. women) were entered in the first model. Interaction terms were computed for moralization and the two dummy-coded condition variables and entered in the second model.

In the first model, attitude moralization emerged as a significant predictor such that the more people perceived morality to underlie their attitude toward eco-friendly products, the more they intended to purchase the product, $B = .26$, $t(174) = 2.97$, $p = .003$. In addition, people reported lower purchase intentions for the 1.5-star product than the 4.5-star product, $B = -1.25$, $t(174) = -6.44$, $p < .001$. No other effects emerged as significant. Most importantly, the effect of moralization was not moderated by an overall interaction with the product's review/rating, as indicated by a nonsignificant change in the model's R^2 after adding the two interaction terms, $F(2,172) = 1.79$, $p = .17$, R^2 change = .01. Together, these results indicate that greater moralization predicts greater purchase intentions regardless of the product's explicit quality as conveyed via reviews.

Next, we used multiple logistic regression models to examine the likelihood that participants signed up to receive a future email regarding the product. Here, we entered the same variables from the previous models as simultaneous predictors of agreeing to future contact from the company. The only significant effect to emerge from the first model was that the more participants perceived a moral basis for their attitudes toward eco-friendly products, the more likely they were to sign up for a future email from the company, $B = .53$, $SE = .21$, $Z = 2.55$, $p = .01$. This effect also was not moderated by condition; a likelihood ratio test compared logistic regression models with and without the interaction terms, showing that including the interaction terms did not significantly improve the model, $X^2 = 1.12$, $P = .57$.

GENERAL DISCUSSION

Across many types of products and product categories, the more people perceived morality to underlie their attitudes, the more likely they were to report intentions to purchase those products in the future, to report having actually purchased those products, and to choose to receive additional product-related information. Importantly, these relationships held when controlling for the degree of people's

favorability toward the product type (all studies), controlling for other metacognitive attitude features, such as certainty, ambivalence, knowledge, and importance (Studies 1–4), and at various levels of apparent product quality (Study 5). Thus, by treating morality as a metacognitive basis that some individuals perceive to underlie their attitudes, we present consistent evidence for its reliable impact on consumer outcomes.

By applying insights from attitudes and social cognition studies within moral psychology, we address concerns in consumer psychology regarding the mixed evidence of morality's effects. That is, rather than treating some consumer behaviors (e.g., buying fair trade products) as intrinsically "ethical," we emphasize that people differ in whether they view a given type of product as morally relevant. It is worth noting that although the products used in our research were all potentially connected to morality or ethical purchases in some way (e.g., fair trade, eco-friendly), they varied considerably in their relationship with participants' idiosyncratic moral concerns about them (e.g., some participants saw fair trade products as highly morally relevant, whereas others did not see them as morally relevant at all; see the supplementary materials online). Moreover, even when we exclusively used products where our data indicated lower levels of moralization (i.e., organic food and made-in-America clothing; Study 2), the effect of moral metacognitions on purchase intentions remained consistent. In other words, so long as moral considerations are at least somewhat possible for the product category, the idiosyncratic extent to which people moralize their attitudes toward those product categories should reliably contribute to their purchases and purchase intentions.

Relevant to this prior discussion, we believe the present work can help to inform marketing strategies. First, this research suggests a simple, easy-to-use measure for assessing consumers' attitude moralization (cf. Skitka et al., 2015), one whose predictive utility was demonstrated across a variety of topics, outcomes, and designs. Thus, marketers could use this measure in surveys to identify the kinds of consumers in their target market with moralized attitudes toward a product and leverage this insight to promote ethical purchasing. Second, these data suggest that marketers can instill the perception that a product's benefits are morally relevant, thus encouraging purchase behavior. In line with this, we showed that guiding people to perceive a moral basis for their existing product attitudes led to stronger purchase intentions (Study 3). To this point, relatively little research has tested how people come to moralize their attitudes (cf. Feinberg, Kovacheff, Teper, & Inbar, 2019; Skitka, Wisneski, & Brandt, 2018), and future research should seek to better understand what relevant consumer messages or contexts might lead people to perceive moral bases for their product attitudes

Although the present work demonstrated the robustness of attitude moralization's role in increasing consumers' purchasing intentions and behaviors, there are likely to be conditions under which people neglect options that even they deem morally virtuous. In the consumer domain, price is likely to be one such condition. For example, people's preference for environmentally sustainable products drops as their price increases (Anderson & Hansen, 2004). More generally, then, when

situational demands impose external constraints or strongly emphasize instrumental goals, the role of moral evaluations may be attenuated.

As a final consideration, it is worth noting that our studies focused on products for which people had generally positive attitudes. We did so intentionally, believing marketers would find moral metacognitions a valuable means of *encouraging* purchase behavior. But, when people perceive moral bases for *negative* consumer attitudes, would such moralization prompt lower purchase intentions? This indeed seems plausible, and some prior research suggests that morally based, negative attitudes are associated with important consumer behaviors, namely, protest (Cronin, Reysen, & Branscombe, 2012; van Zomeren, Postmes, & Spears, 2012). In extending our application of attitude moralization to consumer behavior, future moral and consumer psychology research should continue to consider moral opposition as well as moral support.

In closing, even with the aforementioned boundary conditions in mind, these studies provide convergent evidence that the more people perceive their positive attitudes toward a product category to be based on moral concerns, the more they intend to purchase products from that category. Thus, the truly "conscious consumer" may also be one of the most consistent consumers in communicating their product preferences with their dollar.

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