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The Theory of Dyadic Morality and Moral Identity Explain the Public's Response to Harm Done by Government and Organizations

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Abstract

Harm functions complexly in moral judgment but has been treated differently in the Social Intuitionist Model (SIM) and the Theory of Dyadic Morality (TDM). Both the SIM and TDM see felt harm as an outcome of experienced negative moral emotions (e.g., disgust), but the SIM regards harm as a kind of epiphenomenon in the sense that it does not affect moral judgement or behavior, whereas the TDM interprets harm as an essential mediator of the link between negative moral emotions and immorality. The TDM also develops an explanation for how harm functions to initiate reactions to triggering events marked by an intentional agent causing injury to a vulnerable social actor. Here norms serve a regulatory function modulating the effects of harm committed by the agent on negative moral emotions. We conduct two experiments on representative samples of adults ($N_1 = 180;\ N_2 = 192$) and address two different moral contexts (companies doing badly and government doing badly with respect to a threatened health crisis), two different normative moderators (moral identity and belief in conspiracies), and two different moral action tendencies (intentions and word of mouth). Harm is found to have direct and contingent mediated effects on moral action tendencies, in accord with the TDM. Please refer to the Supplementary Material section to find the article's Community and Social Impact Statement.

Keywords: morality, social cognition, norms, negative moral emotions, harm, moral identity, conspiracy beliefs

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The Theory of Dyadic Morality and Moral Identity Explain the Public's Response to Harm Done by Government and Organizations

Two influential contemporary theories of moral behavior are the Social Intuitionist Model (SIM) (e.g., Haidt, 2012) and the Theory of Dyadic Morality (TDM) (e.g., Schein & Gray, 2018). Both approaches stress the roles of intuition and affect as initial drivers of moral behavior, and both regard moral judgements and reasoning as occurring largely as later functions of intuition and affect. Further, both theories regard harm as "likely the most important, frequent, and universal moral consideration" (Schein & Gray, 2018, p. 52; Haidt et al., 2015).

One point of departure between the SIM and TDM concerns the function of perceived harm in the theories. Although both theories hypothesize that harm is determined by negative moral emotions (e.g., social disgust), the SIM tends to see harm as an outcome of felt negative emotions, even an epiphenomenon, yet one based on rationalization (Haidt & Hersh, 2001, p. 212), whereas the TDM maintains that harm mediates the influence of negative moral emotions on decisions (Schein, Ritter, & Gray, 2016).

The present research investigates the role of perceived harm in moral behavior in greater depth. Under the SIM, negative moral emotions have a direct effect on moral behavior, with harm not accorded a causal role. But under the TDM, two routes to harm are posited: "the direct perception that an act is harmful, and the indirect perception that an act destroys a value-- which then causes direct harm. This prediction is currently untested…" (Schein & Gray, 2018, p. 47, emphasis added). We manipulate harm in correspondence to the TDM, and propose that its

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effects on negative moral emotions are regulated by norms which induce harm as a synthetic, perceived, intuitive response on a continuum, and harm, in turn, transforms agent-recipient danger through both norms and felt negative moral emotions into moral action tendencies against the offending agent.

Our experiments address two different moral contexts (companies doing badly and government doing badly with regard to a threatened health crisis), two different normative moderators (moral identity and belief in conspiracies), and two different moral action tendencies (intentions and negative word of mouth). In addition, negative moral emotions comprise three facets of the hostility triad (Izard, 1977): contempt, righteous anger, and social disgust (Rozin et al., 1999), and mediate the effects of the manipulations and norms on harm, and through harm, on moral action tendencies (see Figure 1).

[Figure 1 about here]

We chose the two contexts of the public's reactions to company malfeasance and government malfeasance because we desire to study everyday moral violations which fit well the mission of the *Journal of Community and Applied Social Psychology*. Hofmann et al. (2014) point out that most research in morality science uses artificial stimuli and non-natural settings. For example, as discussed below, research has frequently studied unusual moral violations and employed very strong stimuli not common in everyday life. Yet, such moral violations make up perhaps 1% of our moral world, whereas "everyday moral violations (e.g., abuse, cheating, lying)…make up 99% of our moral world" but are understudied (Gray et al., 2022, p. 1206).

We address the question how moral emotions and harm matter in moral judgment. The framing of the initiation of moral behavior has been done somewhat differently under the SIM

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and the TDM. The SIM construes moral behavior broadly and triggered by moral wrongs that may be objectively harmful or objectively harmless (Haidt, 2001). So-called objectively harmless wrongs have been studied extensively with regard to such uncommon cases as "secret, loving, consensual incest" (Haidt, Bjorklund, & Murphy, 2000), buying a chicken, having sex with it, then cooking and eating it (Haidt, 2012, pp. 3-4), using one's national flag to clean the bathroom; eating one's dog after it dies in a car accident (Haidt et al., 1993), and masturbating while cuddling one's favorite teddy bear (Haidt & Hersh, 2001). Such uncommon, but shocking, acts are frequently powerful enough on their own to induce main effects, leading respondents to condemn such acts, despite being seemingly "victimless" (Haidt et al., 1993) or "harmless" (Eibach, Libby, & Ehrlinger, 2009). We study how violations of everyday moral behavior influence moral judgments through felt moral emotions and their contingency on norms and through felt harm.

According to the SIM, "harmless" wrongs can lead directly to negative moral emotions because they violate moral codes (Rozin et al., 1999). This can happen even presumably after being instructed by experimenters that the acts are harmless, yet participants later judge the acts as immoral and are unable to explain their reactions, in a process labeled, "moral dumbfounding" (Haidt et al., 2000). However, moral dumbfounding may confound objective harm with perceived harm (Schein & Gray, 2018, p. 44; see also Royzman, Kim, & Leeman, 2015).

Schein and Gray (2018) criticize research on "harmless" wrongs for ignoring the perceptions of respondents and failing to analyze harm and morality intuitively. They conclude that "judgements of harmlessness…require effortful reasoning, because harm and morality are naturally fused together…[and] the presence of perceived harm…distinguishes immoral acts from those that are merely bad…or disgusting…" (Schein & Gray, 2018, p. 34). Judgements of

harm do not necessarily require deliberative processing and can occur automatically and intuitively (Gray et al., 2014).

In comparison to the SIM, the TDM specifies moral judgment as a single process, where triggering events follow a well-defined process. Namely, dyadic morality arises from norm violations when an intentional agent causes injury to a vulnerable individual. Schein and Gray (2018) term this a "harm-based cognitive template" which happens intuitively in the mind of a vulnerable individual and is perceived on a continuum. Unlike harm, which plays a limited role in the SIM, harm under the TDM is specifically represented in the triggering event. Further, the cognitive harm template does not directly lead to moral judgment, as under the SIM, but rather follows an etiology whereby an act becomes immoral through a particular combination of normative, affective, and harm responses. As one reviewer noted, under a norm violation, people make a moral judgment by comparing an act to a harm-based template, with a closer match (i.e., more apparent harm in the act) leading to a stronger categorization of the act as immoral.

Norms

Moral wrongs under the SIM directly affect negative moral emotions (Rozin et al., 1999). Although intuition and affect are distinct from reasoning (e.g., Zajonc, 1980), the TDM proposes that negative moral emotions are contingent on a violation of norms, where norms are broadly interpreted to reflect beliefs, expectancies, rules, or values concerning how people act or should act (Schein & Gray, 2018).

In our experiments, two specific norms are taken to regulate the occurrence of negative moral emotions, following a triggering event. Study 1 investigates the role of moral identity in

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terms of the public's reaction to companies acting irresponsibly during a health crisis by failing to protect workers (see Method).

Moral identity is a person's cognitive schema of his/her moral virtue or character, and is manifest as "a complex knowledge structure consisting of moral values, goals, traits, and behavioral scripts" (Aquino et al., 2009, p. 124). Through various life experiences, people acquire a moral identity that becomes part of one's self-conception and regulates his/her moral self-schema and behavior (Aquino & Reed, 2002; Blasi, 2004; Narvaez et al., 2006). The more central one's moral identity, the more accessible one's moral knowledge structure (Higgins, 1996), and the greater moral identity guides information processing (Higgins & Brendl, 1995).

Blasi (2004) argues that moral identity is an origin of motivation and furthers self-consistency. When an agent performs an act that a vulnerable actor or observer perceives damages or erodes a moral value he/she prizes, this threatens one's self-concept and activates negative feelings toward the perpetrator, to the extent that one holds a strong moral identity. Negative moral emotions in response to a triggering event are thus contingent on moral identity.

Study 2 examines the role of beliefs in conspiracy theories with respect to the public's reaction to government downplaying the possibility of danger and shirking responsibility during a health crisis (see Method). Conspiracy theories are "attempts to explain the ultimate causes of significant social and political events and circumstances with claims of secret plots by two or more powerful actors" (Douglas et al., 2019, p. 4). Beliefs in conspiracies are particularly operative when a danger or threat occurs, but for cases where no action has been taken with regard to a health crisis by a powerful agent, such as the government, feelings of negative moral emotions toward the government should increase as beliefs in conspiracy theories increase (Bagozzi et al., 2023). By contrast, for cases where the government explicitly downplays the

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consequences of health risks in times of a health crisis, respondents already have a reason to react negatively toward the government, irrespective of their beliefs in conspiracy theories. As a consequence, we predict a negative interaction between manipulated malfeasance by the government vs control and belief in conspiracy theories on negative moral emotions. This is consistent with the claim made by Schein and Gray (2018, p. 41) that "initial intuitive perceptions of harm can be modified by additional conscious reasoning", such as found in moral identity or beliefs in conspiracies as a cognitive schema.

Negative moral emotions

The SIM hypothesizes a main effect of perceived moral wrongs on negative moral emotions, whereas the TDM posits that moral wrongs contingently affect negative moral emotions, depending on normative beliefs. In both cases, felt negative moral emotions are intuitive responses, not deliberative ones.

But what are negative moral emotions? Unlike basic emotions (e.g., happiness, sadness, fear) or self-conscious emotions (e.g., pride, shame, guilt, embarrassment), which are self-directed, negative moral emotions are toward another person, group, or institution and "must bear on the interest or welfare of a society as a whole or at least of persons other than the judge or agent" (Gerwirth, 1984, p. 978, emphasis added). Negative moral emotions are thus strongly other-regarding, rather than self-regarding (Tangney et al., 2007), and couple a person to norms and the larger culture or social structure in which the norms are embedded (Turner & Stets, 2005, 2006).

Three negative moral emotions have received considerable scrutiny in recent years: contempt, (righteous) anger, and (social) disgust. Rozin et al. (1999) treated these three

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emotions as discrete emotions, and showed that each individually was connected to either the ethics of autonomy, community, or purity, respectively (Shweder et al., 1997). However, in their tests of these conditions, Rozin et al. (1999) did not demonstrate whether discriminant validity of the three negative moral emotions was established in the sense that contempt, anger, and disgust are uniquely determined by the respective ethics without spilling over into the other negative moral emotions.

An alternative view of negative moral emotions was developed by Izard (1977) who proposed that contempt, anger, and disgust comprise parallel aspects of a singular construct, which he termed the hostility triad. Support for shared commonality across the three facets can be found in empirical analyses of the emotional lexicon (Shaver et al., 1987). Likewise, several studies support considerable commonalities between contempt and disgust (Hutcherson and Gross, 2011), anger and disgust (Simpson et al., 2006), and disgust and anger action tendencies (Nabi, 2002). Finally, some evidence exists showing that people blur anger with disgust, as well as contempt with disgust in their reactions (Shiori et al., 1999).

Are contempt, anger, and disgust discrete emotions, or do they represent parallel facets of a single hostility reaction? Emerging research supports the point of view that contempt, anger, and disgust connote both discrete variance and considerable shared variance, depending on what level of abstraction one focuses upon. Grappi et al. (2013) found that measures of contempt, anger, and disgust exhibited uniqueness in the sense of attaining discriminant validity among themselves, but when specified as first-order factors loading on a single second-order factor, the measures supported an interpretation of the negative moral emotions as composing one higher-order concept. Thus, contempt, anger, and disgust constitute discrete emotions, as Rozin et al. (1999) proposed, when treated as measures of correlated first-order factors, yet comprise a single

overall emotion, as Izard (1977) posited for the hostility triad, when handled as an abstraction capturing shared variance across the measures of the three negative moral emotions. These findings have been replicated by Xie et al. (2015).

The diverging perspectives on contempt, anger, and disgust have implications somewhat parallel to that found in the debate between the role of modules in moral foundations theory and the constructionism alternative (Schein & Gray, 2018, pp. 53-56). Similar to the possibility that certain acts can activate multiple modules under moral foundations theory, and that moral foundations might be better interpreted as genres that pose challenges for construct validity, the effects of dyadic morality and norms on negative moral emotions should be represented in appropriate ways, taking into account convergent and discriminant validity of measures of the emotions (see Results).

Unlike the study of uncommon, extreme moral harms (e.g., having sex with a dead chicken and then cooking and eating it), where direct main effects have been found on the moral emotion of disgust, our research investigates more common moral harms perpetrated by companies or the government, where, consistent with the TDM, the effects of perceived harm by the public are contingent on norms, specifically in our case moral identity and beliefs in conspiracies. Thus, we hypothesize that (see Figure 1):

> H1a: Perceptions of a company acting badly so as to harm its workers, by not taking actions to protect them from consequences of the pandemic, will lead to hostility triad emotions (contempt, righteous anger, social disgust) to the degree that perceivers have a strong moral identity.

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H1b: Perceptions of the government acting badly, by downplaying the negative consequences of a health crisis, will lead uniformly to high levels of hostility triad emotions (contempt, righteous anger, social disgust), independent of beliefs in conspiracy theories, but will induce higher levels of hostility emotions, the greater the belief in conspiracy theories, for respondents not exposed to information concerning the government downplaying negative consequences of a health crisis.

Moral harms

Contra to predictions under the SIM, where moral emotions directly impinge on moral judgments, the TDM posits that harm mediates the effects of moral emotions. This concurs with one review, where it is concludes that "current evidence is insufficient to support the hypothesis that emotional processes mediate our intuitive moral judgments" (Huebner et al., 2009, p. 5).

Consistent with the TDM, we experimentally manipulate two routes to felt harm: indirectly through negative moral emotions and contingent on expressed moral identity (Study 1), or contingent on beliefs in conspiracy theories (Study 2), and directly on felt harm, as a function of an intentional agent causing harm to a vulnerable actor where observers intuitively perceive the harm. The harm-based cognitive schema expresses essential elements of harm that are integrated synthetically under the TDM.

We can think of the harm-based cognitive schema in terms of four elements organized in a particular way. Harm originates (1) when an intentional agent (2) acts purposively so as to (3) injure a perceiving vulnerable actor (patient), and (4) the vulnerable actor or observer reacts intuitively to the threat. In our experiments, the intentional agent is either a company acting irresponsibly to a health crisis by failing to protect its workers (Study 1) or the government

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downplaying the threat of the health crisis thereby endangering the public (Study 2). Subjects in the experiments are adult members of the public who vicariously experience the perils described in each study.

By intuitive reaction, we mean an automatic, subjective response without the actor necessarily experiencing conscious deliberative thought (Schein & Gray, 2015). It is important to point out that harm in the cognitive schema is not, per se, an objective attribute of an act but rather is perceived subjectively by a vulnerable actor. The agent precipitating the harm-based cognitive schema acts or fails to act so as to endanger a vulnerable actor, based on reasoning or decision making by the offending agent, hence the agent is regarded by the vulnerable actor or observer to have acted intentionally. Moral judgments depend on processing of harm via dyadic harm-based template, which is a kind of harm-as-information schema (Schein & Gray, 2018). Although experienced harm is an intuitive perception, and does not involve extensive information processing, it does entail some subjective evaluative appraisal.

Harm is subjectively experienced by a vulnerable actor on a continuum. Expression of harm in this sense is a type of evaluation, which is "a careful examination or overall appraisal of something, particularly to determine its worth, value, or desirability" (American Psychological Association Dictionary of Psychology). An evaluation can occur automatically and intuitively, but also might involve a certain amount of reflection or deliberation, depending on the circumstances (e.g., De Siroli et al., 2012). As a continuum, harm can be measured by unipolar (e.g., "No harm" to "Great harm") or bipolar (e.g., "Much benefit" to "Much harm") scales. The effects of the manipulation on harm are tested as direct effects (from the manipulation) and indirect effects (though moral emotions and contingent on norms. The latter requires

examination of models of moderated mediation, wherein the effect of the manipulation on moral emotions are conditional on norms, and moral emotions, in turn, affect felt harm.

Consistent with the aforementioned reasoning, we hypothesize that (see Figure 1):

H2a: Perceptions of a company acting badly so as to harm its workers, by not responding responsibly to a pandemic health crisis, will lead directly to experienced harm.

H2b: Perceptions of the government acting badly, so as to harm the public by downplaying a pandemic health crisis, will lead directly to experience harm.

H3a: The greater the felt hostility triad emotions, the more the experienced harm, for the condition of a company acting badly so as to harm its workers by not responding responsibly to a pandemic health crisis.

H3b: Ther greater the felt hostility triad emotions, the more the experienced harm, for the condition of the government acting badly so as to harm the public by downplaying a pandemic health crisis.

Transformations of felt harm

Several studies have examined implications of felt moral harm on immorality (e.g., Schein, Ritter, & Gray, 2016). Immorality has most often been operationalized by such judgements as not immoral-extremely immoral, not wrong at all - wrong, and not blameworthy - blameworthy.

We wish to examine the effects of felt harm on moral reactions. Our focus is on action readiness or action tendencies, because these seem to be the most automatic and proximal responses to a wide range of moral reactions such as negative judgements, moral condemnation

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or opposition to corruption, depravity, iniquity, or vice. "Action readiness is what links experience and behavior: felt readiness can be considered a reflection of the actual state of behavioral readiness… [a state of readiness] is defined as the individual's readiness or unreadiness to engage in interaction with the environment" (Frijda, Kuipers, & Ter Schure; 1989, p. 213). The terms, action readiness and action tendency, are generally used interchangeably (Frijda, 1987).

We can think of action readiness as a tendency to be antagonistic (e.g., to oppose or hurt an offender), avoid (e.g., to desire to have nothing to do with a transgressor), distance oneself (e.g., to keep something out of one's way), be reactant (e.g., to move against a violator of norms), or seek personal protection (e.g., to defend or shield oneself from danger). Action tendencies might be intuitive responses, unconscious, or supraliminal (Morsella & Bargh, 2011).

In our experiments, we investigate two generic action tendencies. For companies acting irresponsibly, we examine intentions to purchase or not purchase the wares of the company. This is a volition or conation related to supporting, not supporting, or even injuring the company. For government acting irresponsibly, we study the urge to transmit negative word of mouth against the government. Here the volition or conation expresses antagonism or reactance.

Following the above logic, we hypothesize that (see Figure 1):

H4a: The greater the experienced harm to employees due to a company acting badly, by not responding responsibly to consequences of a pandemic health crisis, the less the intention to purchase products from the company.

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H4b: The greater the experienced harm to employees due to the government acting badly, by downplaying the consequences of a pandemic health crisis, the more the transmission of negative word of mouth concerning the government.

Study 1

Method

Participants and procedure. Sample size was determined before any data analysis. To estimate the sample size needed to test our models in both studies, we used GPower to determine the a priori sample size for our interaction. The power analysis suggested that 82 participants in each group would be needed to detect medium effect sizes (d = .30) with a power of .80. We chose a sample of 200 participants in Study 1 and 200 participants in Study 2, where each study had separate experimental and control groups.

Participants were randomly assigned to manipulation and control conditions. Because the samples, which were randomly selected across the US, were adults between 20 and 65 years old inclusive, and included people not likely to be experienced taking questionnaires requiring relatively involved information processing, we created scenarios expressed in narrative form so as to engage and involve respondents as deeply as possible. Each scenario was introduced with an introductory paragraph saying that a new viral pandemic was developing world-wide with a threat to public health. Then, depending on the condition under study, a second paragraph was presented with either the company acting irresponsibly, a neutral condition for the company condition, government acting irresponsibly, or a neutral condition for the government condition. The full scenarios are presented in the Appendix.

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The sample for the company study consisted of 80 men (44%) and 100 women (56%). Respondents' age included the following breakdowns: 8% between 20 and 25 years old, 28% 26 to 35, 24% 36 to 45, 15% 46 to 55, 24% 56 to 65, inclusive. Education entailed 30% with a high school education, 3% less than high school, and 67% with an undergraduate degree or higher. This result is typical for data collected electronically in the US and was supplied by a professional research firm. The final sample was arrived at after removing 19 participants responding either too quickly or providing the same numbered responses for most items (straight-liners). The final breakdown for the conditions was 86 in the manipulation condition and 94 in the control condition.

Measures. Table 1 presents the questionnaire items, factor loadings of items, and reliabilities of scales. For each set of measures, citations are made to standard scales in the literature Factor loadings for the 9 hostility items ranged from .77 to .96. Reliabilities were .93, .97, and .95, respectively for contempt, anger, and disgust. Factor loadings for perceived harm were .88 to .93. The reliability for the items was .93. Factor loadings for moral identity ranged from .77 to .88. The reliability for these items was .92. The two items measuring purchase decision correlated $r = .78$.

Analytical model. Hayes's (2022) Process Model 83 was used to test the hypotheses in both Studies. Bootstrapping for confidence intervals was 10,000.

[Table 1 about here]

We report how we determined our sample size, all data exclusions (if any), all manipulations, and all measures in the study. The study was not preregistered. Data are available at OSF: https://osf.io/cwr9k/?view_only=6b496b4e61854ff38bc6fbee69ec246a

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Study 2

Method

Participants and procedure. The sample for the government study consisted of 92 men (48%) and 100 women (52%). Respondent age comprised the following categories: 6% between 20 and 25 years old, 24% 26 to 35, 27% 36 to 45, 23% 46 to 55, and 20% 56 to 65, inclusive. Education entailed 42% with a high school education, 3% with less than high school, and 55% with an undergraduate degree or higher. The final sample was arrived at after removing 15 participants responding either too quickly or providing the same numbered response for most items. The final sample sizes by condition were 89 in the manipulation condition and 103 in the control condition.

Measures. As shown in Table 1, factor loadings for the 9 hostility items ranged from .61 to .92. Reliabilities were .90, .93, and .94 respectfully contempt, anger, and disgust. Factor loadings for perceived harm were .80 to .91. The reliability for these items was .90. Factor loadings for beliefs in conspiracies were .75 to .82. The reliability for these items was .83. Factor loadings for the items measuring negative word of mouth ranged from .66 to .90. The reliability for these items was .84.

Table 2 presents the correlations, means, and standard deviations for the variables shown in Figure 1. This is done separately for the manipulation and control conditions in both studies.

[Table 2 about here]

Results

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We present the findings for the representation of measures of moral emotions, where it is shown that contempt, anger, and disgust measures are distinct when modelled as first-order factors, thereby confirming the discrete emotion view of Rozin et al. (1999), whereas the measures converge to characterize a single hostility triad as one second-order factor to embody one construct as proposed by Izard (1977). These results support our treatment of moral emotions in the tests of hypotheses by application of Hayes's (2022) Process regression model to Figure 1.

Next, we present the main findings for tests of the four hypotheses for each manipulation shown in Figure 1. Hypotheses H1a and H1b show the results for the moderation effect of moral identity and belief in conspiracy theories, respectively, which test the role of norms in the TDM (Schein & Gray, 2018). Hypotheses H2a and H2b and hypotheses H3a and H3b present the findings for the direct and moderated mediation effects, respectively, under each manipulation, as posited by the TDM (Schein & Gray). Hypotheses H4a and H4b demonstrate the proximal effects of felt harm on intentions and negative word of mouth, respectively, for the two manipulations, and reveal the central role of harm as a mediator of norms and moral emotions. In sum, the results confirm predictions of the TDM and show the essential roles of felt harm, norms, and moral emotions.

Measurement properties

We performed confirmatory factor analyses (CFA) on the 9 hostility triad items. In Study 1, the model with one second-order factor and 3 first-order factors corresponding to contempt, anger, and disgust fit well overall: $x^2(24) = 71.92,\ p = .00$, RMSEA= .10, NNFI = .98, CFI = .99, and SRMR = .015. Three of the 4 goodness-of-fit indexes substantially exceed model fit standards of RMSEA$\leq$.06, NNFI $\geq$ .95, CFI $\geq$ .95, and SRMR $\leq$ .08 (Hu & Bentler, 1999).

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Only the RMSEA does not meet the recommended cut-off. Note, however, Browne and Cudeck (1992, p. 239) assert: "We are also of the opinion that a value of about 0.08 or less for the RMSEA would indicate a reasonable error of approximation and would not want to employ a model with a RMSEA greater than 0.10". Hu and Bentler (1999, p.27) note that "…it is difficult to designate a specific cutoff value…" for the 4 goodness-of-fit indexes and state that the cutoff value should be "close to" the above mentioned standards. They further acknowledge the practical difficulty of meeting all 4 standards in any one application, and "…recommend that practitioners use [2 of the 4 standards and] a cutoff of .95 [for the NNFI or CFI] in combination with a cutoff value close to .09 for SRMR to evaluate model fit" (p.27). Taking into account the above comments applied to the findings, we conclude the second-order CFA model fits well in Study 1.

In Study 2, the second-order CFA model fits even better: $x^2(24) = 51.64$, RMSEA = .07, NNFI = .99, CFI = .99, and SRMR = .026. In sum, similar to past research in different contexts, the three contempt, anger, and disgust factors can be interpreted as 3 distinct factors at a concrete level and a single factor where the 3 negative moral emotions share considerable variance at a higher level of abstraction (see Grappi et al., 2013; Xie et al., 2015). Therefore, we treat contempt, anger, and disgust as operationalizations of the hostility triad in Studies 1 and 2.

Study 1

Table 3 summarizes the findings for Study 1. First, notice in the top panel that the manipulation of company malfeasance (x) interacts significantly with moral identity (w) to influence the hostility triad (b = .39, se = .09, t = 4.34, p < .001, CI [.22, .57]). Next, as shown in the second panel, the manipulation (x) has a direct effect on harm (b = .27, se = .08, t = 3.33, p = .001, CI [.11, .44]), as does the hostility triad (b = .41, se = .06, t = 6.97, p < .001, CI [.29, .52]).

Finally, in the third panel, it can be seen that harm suppresses intentions (y) to buy products from the company (b = -.83, se = .05, t = -15.40, p <.001, CI [- .94, - .73]).

[Table 3 about here]

A test of the conditional indirect effect of the manipulation (x) on intentions (y) confirms the contingent effect of x on y, when moral identity (w) is low (effect = -.14, se = .05), CI [- .24, -.06]), moderate (effect = -.29, se = .05, CI [-.41, -.19]), and high (effect = -.41), CI [- .57, -.27]). The Index of Moderated Mediation is significant: index = -.13, se = .04, CI [-.21, -.07]. Finally, because the direct effect of the manipulation (x) on intentions (y) is not significant (b = .08, se = .06, t = 1.36, p = .18, CI [- .04, .20], we may conclude that the hostility triad and harm fully mediate the effects of x or y. The top panel in Figure 2 presents the conditional effect of moral identity on the hostility triad, where it can be seen that, as moral identity increases, so too do the negative emotions in the hostility triad, for people exposed to information about the company failing to protect its workers in times of a health crisis. Moral identity has no effect on the hostility triad for people in the control condition.

Study 2

Table 4 presents the findings for Study 2. First, as shown in the top panel, the manipulation of government irresponsibility (x) interacts significantly and negatively with beliefs in conspiracies (w) to influence the hostility triad (b = -.14, se = .06, t = -2.11, p = .04, CI [-.27, -.01]). Next, as presented in the second panel, the manipulation (x) has a direct effect on harm (b = .24, se = .07, t = 3.48, p< .001, CI [.10, .37]), as does the hostility triad (b = .40, se = .06, t = 6.23, p < .001, CI [.27, .52]). Last, in the third panel, it can be seen that harm induces negative

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word of mouth (b = .28, se = .08, t = 3.45, p < .001, CI [.12, .44]), as does the hostility triad (b = .38, se = .08, t = 4.84, p < .001, CI [.22, .53]).

A test of the conditional indirect effect of the manipulation (x) on negative word of mouth (y) confirms the contingent effect of x on y, when belief in conspiracies is low (effect = .06, se = .03, CI [.01, .13]), moderate (effect = .04, se = .02, CI [.01, .08]), and high (effect = .02, se = .02, CI [.00, .06]). The Index of Moderated Mediation is borderline in significance: index = -.02, se = .01, CI [-.04, .00]. Finally, because the direct effect of the manipulation (x) on negative word of mouth (y) is not significant (b = -.02, se = .08, t = -.25, p = .80, CI [-.17, .14}, but there is a significant direct effect from the hostility triad to negative word of mouth (b = .38, se = .08, t = 4.84, p < ,001, CI [.22, .53], we may conclude that the hostility triad and harm partially mediate the effects of x on y. The bottom panel in Figure 2 shows the conditional effect of belief in conspiracies on the hostility triad, where it can be seen that, as belief in conspiracies increase, so too does felt negative moral emotions in the hostility triad, for people in the control group (i.e., for those who were not exposed to government acting irresponsibly to the health crisis), whereas belief in conspiracies does not vary in its effects on the hostility triad, for those persons exposed to information about the government acting irresponsibly to the health crisis. In the latter case, however, belief in conspiracies has a significant main effect on the hostility triad.

[Table 4 and Figure 2 about here]

Discussion

The findings demonstrate that perceived harm mediates the link between negative moral emotions making up the hostility triad (contempt, anger, disgust) and moral action tendencies. Importantly, the results occur under experimental conditions, thereby supporting causal claims

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for harm. Further, the effects of harm, consistent with the TDM, occurred directly from the experimental manipulation to perceived harm, as well as indirectly and contingently (as a function of norms) through the hostility triad. The contingent effects were functions of moral identity and beliefs in conspiracies, respectively, for companies doing badly and government doing badly.

General Discussion

Moral emotions and felt harm are both intuitive subjective judgments that are further jointly functional in influencing moral judgments. In our two experimental studies, negative moral emotions and perceptions of harm mediated the link between the cognitive template of harm and action tendencies of moving away from or moving against the perpetrator of harmful actions. The cognitive template of harm followed the content proposed by Schein and Gray (2018; Gray, Young, & Waytz, 2012) where harm is created through a synthesis marked by an intentional agent acting purposively in a manner threatening or injuring a vulnerable actor (patient) or observer, who perceives the danger or damage and reacts intuitively to it. The intuitive acts encompass negative moral emotions (contempt, righteous anger, and social disgust) that are regulated by norms (moral identity or belief in conspiracy theories), plus felt harm experienced on a continuum (see Figure 1). The specific action tendencies consisted of a stifling or diminution of intentions to buy the merchandise of the irresponsible company or promulgation of negative word of mouth concerning the malfeasant government body.

The present research affirms and clarifies the role of norms in the Theory of Dyadic Morality (TDM). The TDM is clear that norms combine with perception of an intentional agent causing harm to a susceptible actor as perceived by an observer to induce negative moral emotions. However, tests to date have been conducted largely downstream from the initiating

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event and the accompanying harm-based cognitive template. Research establishes that harm mediates the effect of negative moral emotions (e.g., disgust) on immorality (Schein, Ritter, & Gray, 2016). These studies have investigated such moral situations as threat of gay marriage, harm from sacrilegious ideas (e.g., "God does not exist"), and harm from various disgusting acts (e.g., finding a hair in your food). But the full TDM has not, to our knowledge, been tested to date to include norms along with moral emotions and felt harm.

Norms -- construed broadly as beliefs, expectancies, rules, or values concerning how people act or should act -- function to qualify the significance of potential or actual harmful actions committed by an agent (person, group, organization, or institution) for an actor (patient). That is, violation of a norm of personal significance to a patient serves to regulate the effect of perceived harm or felt negative moral emotions by an observer. This experience of harm is thought to be an automatic, intuitive perception and to not entail deliberative processes. Likewise, the experience of felt negative moral emotions is also believed to be intuitive. Whereas much past research with respect to moral behavior has involved unusual and even abnormal acts, we chose two contexts that are more indicative of everyday moral behaviors. Unusual or abnormal moral violations are such, it seems, as to be very strongly motivating and to induce main effects as stimulus scenarios, while everyday moral infringements may be such as to require normative catalysts to induce felt negative moral emotions and harm. A topic for future research concerns what specific norms are operative in everyday moral situations. This can be thought to entail descriptive or injunctive norms about what people should and should not do (Janoff-Bulman, Sheikh, & Hepp, 2009; Reno, Cialdini, & Kallgren, 1993), as well as various individual differences subject to normative-like violation.

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The contingent experience of negative moral emotions would appear to open up additional directions for future research. One concerns factors governing affective sensitivity to normative transgressions based on individual differences residing in empathetic traits. Higher proclivities to experience empathetic concern or compassion toward vulnerabilities of other people or animals, say, should better prepare one to experience negative moral emotions to a triggering event. Similarly, greater inclinations to take the perspective of other people ("put oneself in the shoes of another person") should elicit stronger tendencies to experience negative moral emotions in response to perceiving someone threatened by harm.

Another conditional instigator of negative moral emotions is political ideology. Especially with respect to actions taken by governments or for social issues, political orientation of people has been shown to differ between liberals and conservatives with respect to advocating or resisting social change and rejecting or accepting hierarchy and inequality (Jost et al., 2003). To the extent that political ideology functions as a kind of motivated social cognition, it could regulate negative moral emotions toward felt harm related to perceived social change (Bagozzi, et al., 2023).

Still other moderators of the effects of perceived harm to a vulnerable patient could be social or group identities. Harm experienced by persons from vulnerable groups might be differentially provoking of negative moral emotions in patients or observers, depending on whether the perceiver identifies with being an individualist or collectivist. Particular group identities could control the amount of felt negative moral emotions experienced by a triggering event. Such effects have been found for people reacting to perceived corporate social irresponsibility, as a function of their collective and relational selves (Xie et al., 2015).

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Still another area for consideration relates to possible regulators of the effects of harm on immorality. Attachment styles are coping mechanisms for dealing with danger or threat and occur in three modes: anxious, avoidant, and secure (Gillath, Karantzas, & Fraley, 2016). The extent that felt harm influences moral judgements or behavior could depend on the characteristic attachment style used by the observer. We could not find any research applying attachment styles to harm, buy in a study of government irresponsibility toward the COVID-19 pandemic in Norway, researchers found that anxious and avoidant styles moderated the effects of negative moral emotions on complaining and pressuring the government to act responsibly (Bagozzi et al., 2023). The more the observer coped by using an anxious or avoidant style, the greater that felt negative moral emotions led to complaining and pressuring the target. Secure attachment style had only main effects.

Another direction for new research pertains to the constitution of the cognitive template of harm. Currently, the TDM addresses the situation where an intentional agent causes damage to a patient actor, as perceived by an observer actor who reacts intuitively with felt harm and negative moral emotions, where the latter functions under the felt regulation of norms of the observer. We might think of the role of harm as serving to govern actions of an agent who commits harm to another, such that the personal moral significance of the act for the agent generates serial mediation consisting of negative self-conscious emotions and felt harm in the agent, not the observer, which ultimately leads to positive moral restitution. The fitting self-conscious emotions here could be guilt, embarrassment, or shame (Tangney, Stuesvig, & Mashek, 2007). Further, the effect of an agent self-consciously committing injury toward another or felt negative self-conscious emotions might be moderated by his/her empathy, moral identity, and social self. Likewise, the effect of felt harm on restitution could be moderated by

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similar variables, as well as by the distinctive coping attachment style of the agent offender. This adaptation of the TDM brings subjects under study directly into the cognitive template of harm and entails the agent as an actor developing self-conscious emotions and personal feelings of harm enroute to a moral response themselves. This perspective obviously views the agent actor as one who self-reflects on his/her acts and their consequences and responds intuitively under the guidance of norms and other individual difference variables.

Still another direction for future research involves the nature of harm. Harm has been treated primarily as a summary or global response in past research, and with measures implying an unidimensional concept with single-factored items. But different kinds of harm might exist such that dissimilar triggers of harm-based responses can be elicited, and disparate and even contrasting effects of harm and the normative conditions that evoke negative moral emotions might occur. For example, harm might subsist in unique physical, psychological, economic, and social modes that undergo distinctive cognitive harm templates, sensitivities to normative violations, patterns and intensities of negative moral emotional reactions, felt subjective experiences of harm, and urges to enact characteristic action tendencies. It seems possible, too, that one kind of harm might itself be moral, as happens when subjects in experiments or patients undergoing medical procedures have not been presented with informed consent or in some other ways have been deceived or exploited.

A final bearing for future research concerns recent ideas in a study of the Affective Harm Account (AHA), which is a kind of deepening of the Theory of Dyadic Morality (Gray et al., 2022). The AHA shows that moral emotions and harm are intertwined, such that under some conditions moral emotions influence harm, but under other conditions harm influences moral emotions. Further, Gray et al. (2022) distinguish between two kinds of affect: affective appraisals

(intuitive subjective reactions) and general visceral arousal (gut feelings, physiological responses) and show that visceral arousal influences felt harm and moral judgments through affective appraisals. These are important topics for future research.

With regard to tests of mediation conducted in this study, we wish to provide some words of caution. Conditional on the model assumptions for mediation, our statistical tests show in both studies that the hostility triad and harm account for a significant portion of variance due to the manipulated effects, but it is important to realize that other models for different sequences among the mediators cannot be excluded. It should be noted that the manipulations affected both the hostility triad and harm directly, according to theory, but there were no direct effects of the manipulations on the dependent variables, and thus the mediators appear to channel all the effects of conditional indirect effects.

Conclusion

Harm plays a fundamental capacity in moral behavior. Not only does it mediate the effects of negative moral emotions on immorality, but it serves a subtle purpose in the cognitive template creating the processes initiating the harm-based response itself. Our research has implications for understanding the functioning of norms and individual differences in the Theory of Dyadic Morality and the nature of moral cognition and moral emotions. Cognitive schemas and motivated social cognition play multiple, intricate roles in shaping perception of harm and its effects.

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Table 1. Variables, questionnaire items, factor loadings, and reliabilities

Variables	Items	Factor loadings Study 1	Factor loadings Study 2	Reliabilities Study 1	Reliabilities Study 2
Mediators:					
Hostility triad ***(see Grappi et al., 2013)*** 5-point, "Not at all" to "very much" with "moderately" in the middle.	Contempt			.93	.90
	contemptuous	.77	.61		
	scornful	.91	.70		
	disdainful	.91	.75		
	Anger	.96	.88	.97	.93
	mad	.94	.92		
	angry	.95	.84		
	very annoyed				
	Disgust			.95	.94
	disgust	.95	.89		
	feeling of distaste	.94	.91		
	feeling of revulsion	.87	.89		
Perceived harm ***(see Schein et al., 2016)*** 5-point "very beneficial" or "very healthful" or "very wholesome" to "very harmful", or "very threatening" to "very dangerous", with "neither beneficial nor harmful" or "neither healthful nor threatening" or "Neither wholesome nor dangerous" in the middle**,** respectfully.	How beneficial or harmful do you think these actions are for yourself?	.93	.91	.93	.90
	How healthful or threatening do you think these actions are for yourself?	.90	.91		
	How wholesome or dangerous do you think these actions are for yourself?	.88	.80		
Moderators:					
Moral identity ***(see Acquino and Reed, 2002)*** 5-point "Does not describe me at all" to "Describes me very well", with "Describes e moderately well" in the middle.	"Listed below are some characteristics that may describe a person: caring, compassionate, fair, friendly, generous, helpful, hardworking, honest, and kind. For a moment, visualize in your mind the kind of person who has these characteristics.			.92	

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	Imagine how that person would think, feel, and act. When you leave a clear image of what this person would be like, answer the following questions." 1. It would make me feel good to be a person who has these characteristics. 2. Being someone who has these characteristics is an important part of who I am. 3. I would be proud to be a person who has these characteristics. 4. Having these characteristics is really important to me. 5. I strongly desire to have these characteristics.	.83 .83 .88 .77 .87	- - - - -		
<u>Beliefs in Conspiracy</u> ***(see Mari et al., 2022)*** 5-point strongly disagree to strongly agree.	1. Many significant world events have occurred as a result of a conspiracy. 2. Despite what the authorities say, large businesses and/or government routinely engage in sinister, secret activities in the name of profit or gain. 3. When one looks at the bigger picture, it is easy to see the many seemingly unrelated events form part of a larger plan, orchestrated by powerful others acting in secrecy.	- - -	.75 .81 .82	-	.83

Dependent variables - **Purchase decisions** ***(see Warshaw and Davis, 1985)*** 5-point "Not at all" to "very much" and "very unlikely" to "very likely".	1. I intend to buy products from the company. 2. How unlikely - likely are you to buy products from the company?	- -	- -	$r = .78$	-
- **Negative word of mouth** ***(see Xie and Bagozzi, 2019)*** 5-point "Not at all" to "very much" scale.	1. I intend to say negative things about the government to friends, relatives and other people. 2. I intend to recommend my friends, relatives, and other people not considering working for the government. 3. I intend to discredit the government to friends, relatives and other people.	- - -	.86 .66 .90	-	.84

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Table 2. Correlations, means, and standard deviations for key variables

A. Study 1: Company acting badly (negative actions below diagonal[a], control condition above diagonal[b])

	1	2	3	4	*Means*		*Standard deviations*	
					Negative	*Control*	*Negative*	*Control*
Hostility triad	**1.00**	**.11**	**-.23**	**-.22**	**3.35**	**1.75**	**1.43**	**.86**
Harm	**.60**	**1.00**	**-.06**	**-.77**	**3.85**	**2.65**	**1.26**	**.74**
Moral identity	**.38**	**.37**	**1.00**	**.07**	**3.93**	**3.99**	**.98**	**.84**
Purchase decision	**-.54**	**-.84**	**-.51**	**1.00**	**2.24**	**3.18**	**1.21**	**.99**

$a_n = 86, b_n = 94$

B. Study 2: Government acting badly (negative actions below diagonal[a], control condition above diagonal[b])

	1	2	3	4	*Means*		*Standard deviations*	
					Negative	*Control*	*Negative*	*Control*
Hostility triad	**1.00**	**.42**	**-.35**	**.51**	**2.56**	**1.87**	**1.06**	**.98**
Harm	**.41**	**1.00**	**.18**	**.36**	**3.33**	**2.58**	**.87**	**1.06**
Moral identity	**.05**	**-.11**	**1.00**	**.23**	**2.89**	**2.87**	**1.14**	**1.08**
Purchase decision	**.36**	**.41**	**.13**	**1.00**	**2.66**	**2.23**	**1.12**	**1.15**

$a_n = 89, b_n = 103$

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Table 3. Summary of findings for Process Model 83: Company doing badly and moral identity as a moderator and the hostility triad and harm as mediators of the effects of manipulated negative moral emotions on action tendencies toward the company

Hostility triad as mediator ($R^2 = .40$)

Independent variables	***b***	***se***	***t***	***p***	LLCI	ULCI
constant	**2.53**	**.08**	**30.77**	**.00**	**2.36**	**2.69**
x: manipulation	**.81**	**.08**	**9.82**	**.00**	**.64**	**.97**
w: moral identity	**.14**	**.09**	**1.58**	**.12**	**-.04**	**.33**
x*w	**.39**	**.09**	**4.34**	**.00**	**.22**	**.57**

Harm as mediator ($R^2 = .42$)

	b	***se***	***t***	***p***		
constant	**2.20**	**.16**	**13.60**	**.00**	**1.88**	**2.51**
x: manipulation	**.27**	**.08**	**3.33**	**.00**	**.11**	**.44**
w: hostility triad	**.41**	**.06**	**6.97**	**.00**	**.29**	**.52**

Intentions as dependent variable ($R^2 = .71$)

	b	`	***t***	***p***	LLCI	ULCI
constant	**5.58**	**.17**	**33.50**	**.00**	**5.25**	**5.91**
x: manipulation	**.08**	**.06**	**1.36**	**.18**	**-.04**	**.20**
w: hostility triad	**-.06**	**.05**	**-1.34**	**.18**	**-.16**	**.03**
harm	**-.83**	**.05**	**-15.40**	**.00**	**-.94**	**-.73**

Conditional Indirect effect of *x* on intentions:

x → ***Hostility triad*** → ***Harm*** → ***Intentions***

Moral identity	**Effect**	**Boot *se***	**Boot LLCI**	**Boot ULCI**
-.96	**-.**14	.05	-.24	-.06
.14	-.29	.05	-.41	-.19
1.04	-.41	.08	-.57	-.27

Index of moderated mediation

	Index	**Boot *se***	**Boot LLCI**	**Boot ULCI**
Moral identity	-.13	.04	-.21	-.07

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Table 4. Summary of findings for Process Model 83: Government doing badly and conspiracy beliefs as a moderator and the hostility triad and harm as mediators of the effects of manipulated negative moral emotions on negative word of mouth.

Hostility triad as mediator ($R^2 = .16$)

Independent variables	***b***	***se***	***t***	***p***	LLCI	ULCI
constant	2.19	.07	30.62	.00	2.05	2.33
x: manipulation	.35	.07	4.83	.00	.20	.49
w: conspiracy beliefs	.19	.07	2.95	.00	.06	.32
x*w	-.14	.06	-2.11	.04	-.27	-.01

Harm as mediator ($R^2 = .28$)

Independent variables	***b***	***se***	***t***	***p***		
constant	2.06	.15	13.44	.00	1.76	2.37
x: manipulation	.24	.07	3.48	.00	.10	.37
w: hostility triad	.40	.06	6.23	.00	.27	.52

Negative word of mouth as dependent variable ($R^2 = .27$)

Independent variables	***b***	***se***	***t***	***p***		
constant	.79	.24	3.29	.00	.31	1.26
x: manipulation	-.02	.08	-.25	.80	-.17	.14
w: hostility triad	.38	.08	4.84	.00	.22	.53
harm	.28	.08	3.45	.00	.12	.44

Conditional Indirect effect of x on negative word of mouth

x ⟶ *hostility triad* ⟶ *harm* ⟶ *negative word of mouth*

Belief in conspiracies	**Effect**	**Boot *se***	**Boot LLCI**	**Boot ULCI**
-1.21	.06	.03	.01	.13
.12	.04	.02	.01	.08
1.12	.02	.02	.00	.06

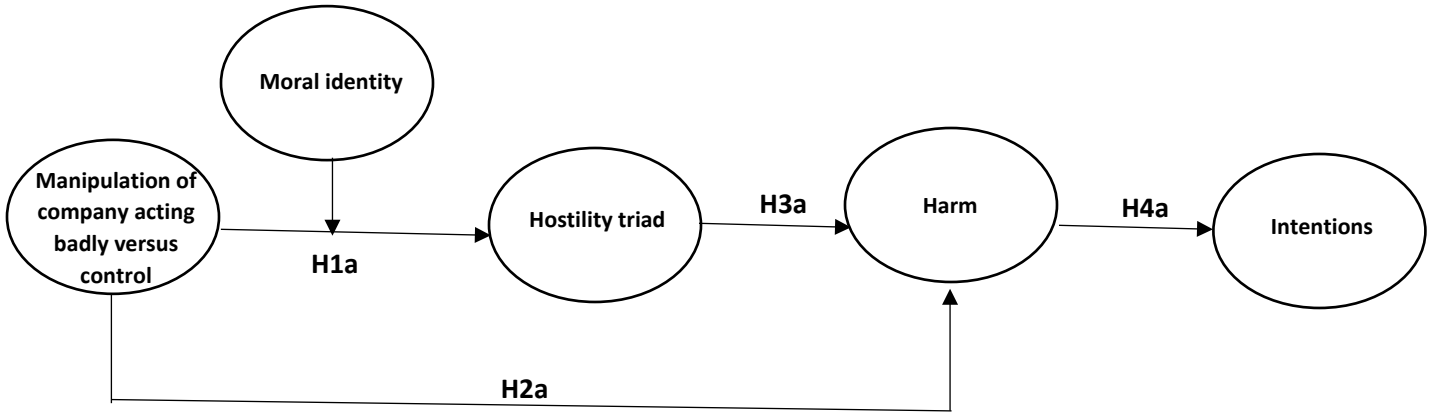
Index of moderated mediation

	Index	**Boot *se***	**Boot LLCI**	**Boot ULCI**
Belief in conspiracies	-.02	.01	-.04	.00

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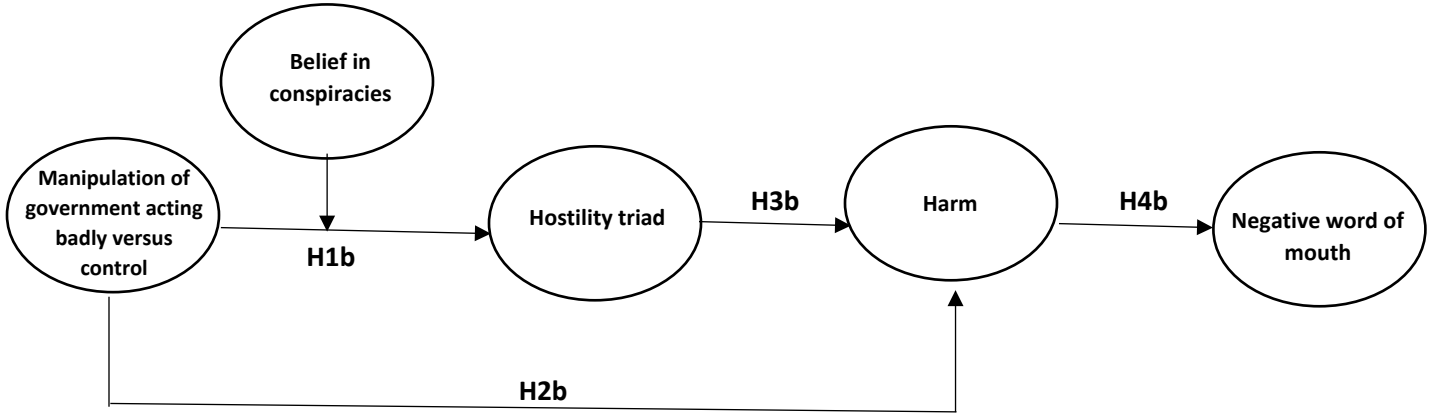
Figure 1. Moderated serial mediation model for mediation of manipulated effects on dependent variables (Hayes model 83)

A. Company acting badly



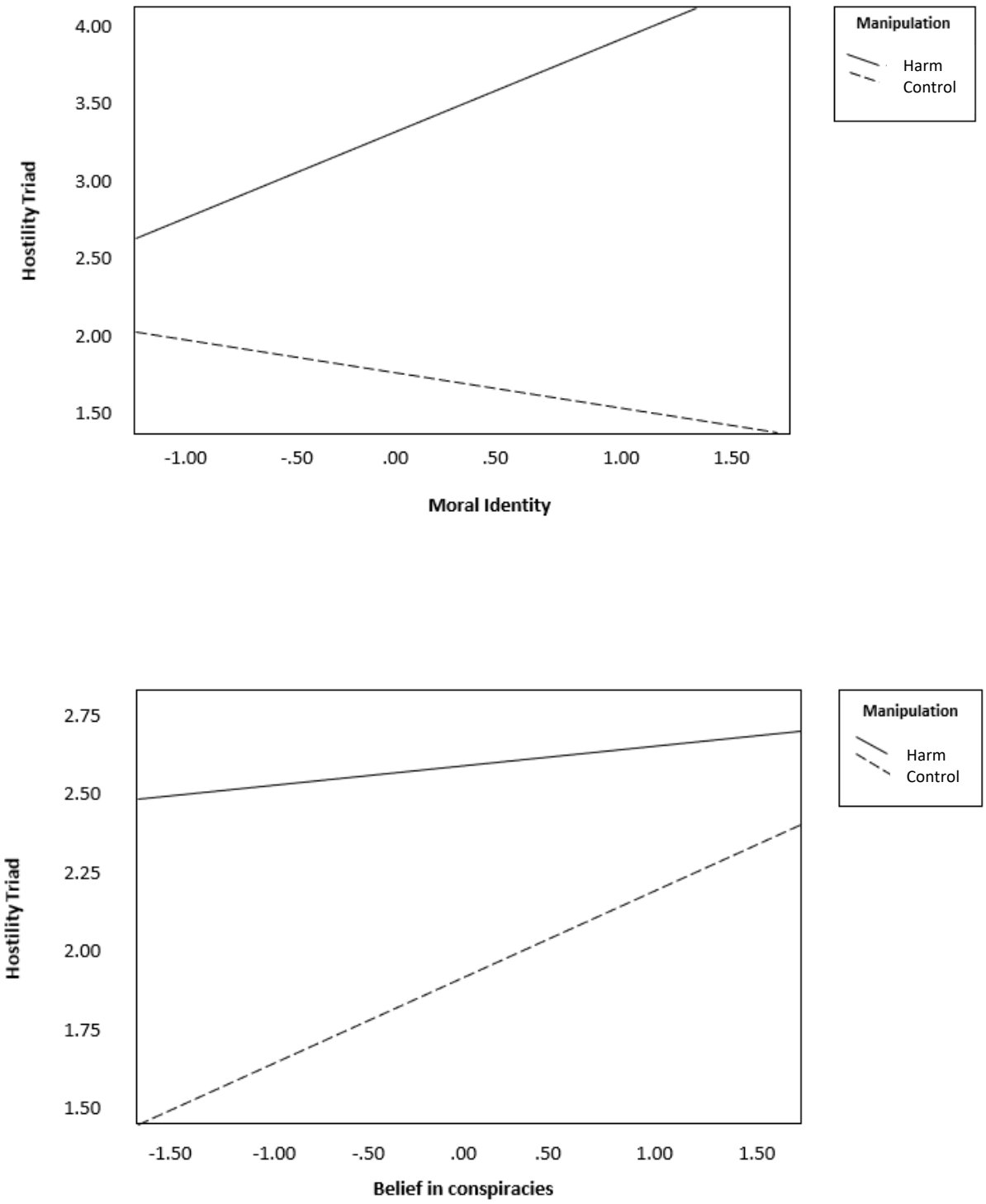
Government acting badly

B.



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Figure 2. Moderating effects of moral identity and belief in conspiracies on the hostility triad



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Appendix A

Experimental scenarios

Introduction to company manipulation:

We would like you to think as vividly as possible about a developing pandemic threat. A new, unknown virus, that is similar to COVID-19 and SARS, but whose characteristics and evolution are not fully known, is spreading fast around the world and has the possibility to develop into a global pandemic. The virus causes life-threatening respiratory problems and danger to vital organs and leads to a high mortality rate. The elderly and people with ongoing health challenges are especially vulnerable, but everyone is in danger of the health threat. Now we are going to provide a description of Triangle Corporation and its actions in this new situation. Take a moment to imagine as you read it as vividly as possible this company in your mind. Then answer the questions that follow as best you can. Please remember that we wish you to respond to the questions as they apply to the company itself as you interpret it, and not necessarily your belief in how the company could have acted differently from the description you read. We want your frank responses to the company and its actions.

A1. Company acting irresponsibly

Triangle Corporation, a large (country name) manufacturer of agricultural products and known as a low-cost producer, did little to mitigate the spread of the new virus and protect its workers. The company provided no protective equipment for its employees, such as masks and disinfectants, but rather told workers these were unnecessary, and told them if they wanted these they would have to pay for them themselves. Safety guidelines for maintaining at least 1 yard

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(one meter) separation between people were regularly ignored in its plants. At the same time, because of high demand for its products, Triangle encouraged workers to come to work, even if they showed mild symptoms of illness such as feeling weak and slightly feverish, unless the symptoms were severe and workers felt it was absolutely necessary to stay home. Further, to enhance output, the company demanded that employees work extended overtime hours each day and on Saturdays for the foreseeable future, thus increasing the time for possible exposure to the new virus. Triangle Corporation made no effort to increase disinfectant cleansing of the work place in order to reduce the risk of contagion, beyond the normal minimal practices. Company leadership believed that the dangers from the new virus were minimal and exaggerated by the government and the press, and that people who might contract the virus, which they believed would be small in numbers, would recover as readily as with the seasonal influenza. As a consequence, they made no special efforts to protect workers.

Introduction to the company neutral condition:

We would like you to think as vividly as possible about a developing pandemic threat. A new, unknown virus, that is similar to COVID-19 and SARS, but whose characteristics and evolution are not fully known, may be spreading fast around the world and has the possibility to develop into a global pandemic. The virus could cause respiratory problems. The elderly and people with ongoing health challenges may be vulnerable, but of course, the virus could spread to a larger population. Now we are going to provide a description of Triangle Corporation and its actions in this new situation. Take a moment to imagine as you read it as vividly as possible this company in your mind. Then answer the questions that follow as best you can. Please remember that we wish you to respond to the questions as they apply to the company itself as you interpret it, and

not necessarily your belief in how the company could have acted differently from the description you read. We want your frank responses to the company and its actions.

A2. Neutral condition for company

Triangle Corporation, a large (country name) manufacturer of agricultural products, is known as a low-cost producer. The company has been in business for 44 years and is regarded as a nondescript manufacturer of average reputation in the business world and the local community. Business has been stable over the course of its existence. The company has a varied product line and makes various consumer related products. It also manufactures supplies products for animal consumption. The company is considering increasing its overseas business. Its attention to new technologies is adequate. Sales have not varied much over the past few years. The value of the company has been steady over the past decade. The company is basically valued by employees as simply an adequate place to work and make a satisfactory living. Top management meets normal requirements for maintaining the welfare of the work force. The company is currently reviewing its practices with respect to how to respond to viruses.

Introduction to the government scenario:

We would like you to think as vividly as possible about a developing pandemic threat. A new, unknown virus, that is similar to COVID-19 and SARS, but whose characteristics and evolution are not fully known, is spreading fast around the world and has the possibility to develop into a global pandemic. The virus causes life-threatening respiratory problems and danger to vital organs and leads to a high mortality rate. The elderly and people with ongoing health challenges are especially vulnerable, but everyone is in danger of the health threat. Please try to imagine and put yourself in this future situation as vividly and validly as possible. And then read the

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following message from various government institutions in our country, as if it were conveyed accurately by reporting in the press. After reading the message, we will ask you for your personal opinions and reactions in this regard. Remember, we ask that you put yourself in place of someone facing a future pandemic in our country and how you would react to this developing pandemic.

A3. Government downplaying the possibility of danger

As information was becoming available about the new unknown virus contagion in some regions outside (country name), our government institutions responded in the following way. People were urged not to panic and were assured that if and when cases would be detected in (country name), there would be little danger or disruption to them. The virus is expected to be relatively mild, similar to seasonal influenza, and most people who contract the virus will recover in a week or two. Any cases detected in (country name) are unlikely to spread significantly, and danger of contagion will dissipate as the weather warms. The health system is well-prepared to handle any incidents of infection and has sufficient stocks of equipment and protective gear for its health care workers. Everyday life practices should continue as normal. People who become ill are urged to remain home, but schools, places of business and work, recreational facilities, entertainment venues, etc., indeed all human and social activities, should continue as normal. Because only a few cases of this unknown virus are expected to occur, no disruption in health care, welfare, employment, or other social services are anticipated. In short, the new virus is not a great concern or worry. As the government spokesperson said in newspaper interviews, "The new virus danger to (people in country name) is very low, and the government is well-prepared currently, in the unlikely event of infestation, to handle all and any emergencies. Remain optimistic and upbeat. Continue your lives as you would normally with confidence in the future."

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Introduction to the government neutral condition:

We would like you to think as vividly as possible about a developing pandemic threat. A new, unknown virus, that is similar to COVID-19 and SARS, but whose characteristics and evolution are not fully known, may be spreading fast around the world and has the possibility to develop into a global pandemic. The virus could cause respiratory problems. The elderly and people with ongoing health challenges may be vulnerable, but of course the virus could spread to a larger population. Please try to imagine and put yourself in this future situation as vividly and validly as possible. And then read the following message from various government institutions in our country, as if it were conveyed accurately by reporting in the press. After reading the message, we will ask you for your personal opinions and reactions in this regard. Remember, we ask that you put yourself in place of someone facing a future pandemic in our country and how you can react to this developing pandemic.

A4. Neutral condition for government

To prepare the health system to possible incursion of the virus, the government will send advisories throughout federal agencies, local authorities, and health care facilities to inform these institutions of these developments. Feedback is welcome from the public. The United States has an extensive network of government agencies, which include capabilities and professional bureaucrats who monitor health matters. Equipment and supplies for responding to health problems are available. Many hospitals and many beds exist. Health systems exist throughout the country, and most communities are staffed with personnel working for the public good, and ready to answer any questions the public might raise. Medical care givers have educations that are updated periodically. Information is available on a wide range of health matters. Communication with the public is available by various media. Health information is available to

the public. The United States participates World-wide forums on health matters and is a regular contributor to these. Health care is a public priority. The United States continues to maintain a public health system that is responsible and up to date. Medical care is comprehensive and efficient.

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