

NOT ALL DISASTERS ARE EQUAL IN THE PUBLIC'S EYE: THE NEGATIVITY EFFECT ON WARMTH IN BRAND PERCEPTION

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Warmth and competence are fundamental dimensions used to characterize people, animals, and even corporations. Based on observations from a preliminary survey (Study 1) on the impact of scandals on several brands, we predicted that an organization that caused a disaster would be judged more harshly if its warmth rather than competence reputation was called into question. Study 1 surveyed a nationally representative sample of American adults and results showed that not all scandals had the same consequences on the perception of warmth, competence, and on consumer attitudes. Study 2 suggested that framing the cause of a local environmental

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disaster in terms of low warmth resulted in harsher judgments toward the responsible organization than framing the cause related to incompetence. Study 3 found that a warmth frame for post-disaster cleanup was ineffective compared to a competence frame. These results suggested that warmth and competence shape perceivers' blame attribution following a corporate or organizational disaster.

The term "disaster" often conjures up images of natural disasters—hurricanes, earthquakes, wildfires, floods—where the disasters' primary cause is beyond human control. Another class of disasters—wars, genocide, and other humanitarian disasters—can clearly be attributed to the hostile intention of the aggressors, who are typically nation states or political factions. However, a third class of disasters exists where there is ambiguity in regard to the culprit's intention and responsibility. How do perceivers interpret environmental disasters, such as an oil spill? How may the perception of intention impact the interpretation of public health disasters, such as when sewage contaminates fresh water, or when pathogens contaminate food and medicine?

In these disasters, the culprits are often corporations or organizations whose mission is not to inflict harm, but who nevertheless have played a causal role in the unfolding of the disaster. In person perception, the attributions made for a negative act have been found to impact impression formation and blame assignment (Evans & Krueger, 2009; Gilbert, 1998), and one would expect the same effect on attributions for the perception of organizations. Indeed, research on brand perception—the impressions and perceptions of corporations and organizations—has found that customers are increasingly wary of big brands and corporations. A recent Gallup poll (2011) about consumers' perception of business and industry sectors found that 20 out of the 25 polled sectors were perceived by the majority of the respondents as negative (e.g., Oil and gas: 64% negative, 20% positive; Pharmaceutical: 43% negative, 36% positive).

How do (potentially unintended) disasters damage a perceiver's impressions of corporations/organizations? Not all disasters are equally damaging—some leave a corporation tainted for years while others turn out to be almost inconsequential. In order to explain and predict the public's reaction to emergencies caused by corporations and organizations, we drew on research that has shown that brand perception and social perception have much in common (Aaker, Fournier, Brasel, Mick, & Lehmann, 2004; Aaker, Vohs, & Mogilner, 2010; Fiske, Malone, & Kervyn, 2012; Fournier, 2009; Kervyn, Fiske, & Malone, 2012; MacInnis, Park, & Priester, 2009). An organization facing the social fallout from a disaster is, in essence, tackling a problem of reputation management (Fombrun & Shanley, 1990; Rindova, Williamson, & Petkova, 2010). Our framework extends the social perception research on negative impressions, specifically the *negativity effect on warmth*, to investigate negative brand perception. Person perception research on the negativity effect on warmth has shown that negative warmth information is much more damaging to one's reputation than negative competence information (Czapinski, 1988; Kanouse & Hanson, 1971; Peeters & Czapinski, 1990). Applied to brand perception, the negativity effect on warmth predicts that after a disaster, any informa-

tion that calls the corporation's warmth into question would be more damaging to the corporation than information that raises concerns about a lack of competence.

THE NEGATIVITY EFFECT ON WARMTH

Warmth and competence are considered to be the two fundamental dimensions of social perception (Abele, Cuddy, Judd, & Yzerbyt, 2008; Abele & Wojciszke, 2007; Judd, James-Hawkins, Yzerbyt, & Kashima, 2005; Wojciszke, 1994; Wojciszke, Bazinska, & Jaworski, 1998). Perception on these dimensions answers two crucial questions that are important when meeting a new group or person. Warmth perception provides the answer to the first question: "Does this group/person have good or bad intentions?" Groups with good intentions are perceived as warm, friendly, and trustworthy, whereas groups with bad intentions are perceived as cold and suspicious. Competence perception provides the answer to the second question: "Does this group/person have the ability to carry out its intentions?" A group perceived as able to carry out its intentions is perceived as competent and capable, whereas a group perceived as unable to operationalize, execute, and achieve its intentions is regarded as incompetent. These two fundamental dimensions together provide an effective way of classifying the multitude of social stereotypes using the Stereotype Content Model (Fiske, Cuddy, & Glick, 2007; Fiske, Cuddy, Glick, & Xu, 2002; Fiske, Xu, Cuddy, & Glick, 1999). Numerous surveys with U.S. samples and samples from over 36 countries on five continents confirmed that people organize their perception of social groups into four clusters based on warmth and competence (Cuddy, Fiske, & Glick, 2007; Cuddy et al., 2009; Durante et al., 2013; Fiske et al., 2002). One cluster contains the reference groups (e.g., the middle-class, Americans) who are perceived as warm and competent. A second cluster contains derogated groups (e.g., poor people, welfare recipients) who are rated as cold and incompetent. The remaining two clusters receive mixed impressions: paternalized groups (e.g., the disabled, the elderly) are perceived as warm but incompetent, and envied groups (e.g., Asians, the rich) are seen as competent but cold. The two-dimensional organization of impressions based on warmth and competence also predicts the type of emotional responses people have toward the different groups. Beside this ability to organize stereotype content into meaningful clusters, warmth and competence perceptions could predict over 80% of the variance of general impressions (Wojciszke et al., 1998).

Although both dimensions are central to social perception, previous research found that warmth is the primary of the two dimensions (Abele & Wojciszke, 2007; Ybarra, Chan, & Park, 2001). When perceiving others, observers pay more attention and give more weight to information related to warmth than to competence (Wojciszke et al., 1998; Ybarra et al., 2008). Knowing if this group/person has good or bad intentions is more important for one's self-interest than knowing the level of competence because the intention qualifies the effect of competence. Therefore, the primacy of warmth is both pragmatically and evolutionarily adaptive (Ybarra et al., 2001, 2008).

In addition, negative warmth information has a stronger impact on impressions than any other types of information (Czapinski, 1988; Kanouse & Hanson, 1971; Peeters & Czapinski, 1990; Reeder & Brewer, 1979; Reeder, Messick, & Van Avermaet, 1977; Reeder & Spores, 1983; Skowronski & Carlston, 1987, 1989). Because

social norms dictate that one should generally be kind and honest, a behavior that signals warmth potentially reflects a warm personality or conformity to the norm. In contrast, a behavior that appears cold and deceptive is readily interpreted as diagnostic evidence for unfriendliness and untrustworthiness because acting in a cold manner is counter-normative and rare. Thus, negative warmth information is deemed more diagnostic than positive warmth information, and is highly damaging for impression formation.

The asymmetry in diagnosticity was first demonstrated by Rothbart and John (1985), who asked participants how much evidence they would need to conclude that a person holds a particular personality trait. They found negative warmth traits required the least amount of evidence for trait inference—a person needs only to act coldly once or twice to be labeled cold and unfriendly. In contrast, attribution of positive warmth traits requires multiple and consistent warm and friendly behaviors—a much higher threshold of evidence. This creates a negativity effect on warmth: little evidence is required for negative warmth attribution while more evidence is required for positive warmth, positive competence, and negative competence attributions (Czapinski, 1988; Kanouse & Hanson, 1971; Peeters & Czapinski, 1990; Ybarra et al., 2008).

In parallel with this negativity effect on warmth in impression formation, people are also sensitive to monitoring their own warmth reputation because they understand that negative warmth is more problematic for their reputation than negative competence. Participants who received bogus feedback that they scored lower than most people on warmth volunteered to take more additional tests to correct that negative impression than participants who received negative feedback on competence (Chan, Ybarra, & Park, 2012). They also expressed more negative emotions when imagining their own warmth reputation being tarnished than when imagining the same for competence reputation.

The negativity effect on warmth also impacts the perception of social groups—behaviors signaling low warmth tend to be seen as rare and diagnostic of the groups' inherent traits. Indeed, Kervyn, Dolderer, Mahieu, and Yzerbyt (2010) found that unexpected low warmth information about a group had more impact on participants than unexpected positive warmth, positive competence, or negative competence information.

THE SOCIAL PERCEPTION OF CORPORATIONS AND ORGANIZATIONS

Research has shown that the way individuals relate to brands—corporations and organizations—bears strong similarity to the way they relate to other people (Aaker et al., 2004; Fournier, 2009; MacInnis, Park, & Priester, 2009). Fournier (1998) identified a number of relation schemas that can be seen in customer-brand relations, such as kinship (e.g., a college student reporting that she used a number of brands because her mother used them) and enmity (e.g., a divorced woman actively avoiding brands that reminded her of her ex-husband). Customers are also sensitive to the relationships they perceive among brands. For instance, brands that portray themselves as the underdog “fighting the good fight” against large competitors evoke positive attitudes from customers (Paharia, Keinan, Avery, & Schor, 2011). Based on this idea of customer-brand relationships, Kervyn et al. (2012) applied the two dimensions of social perception to brand perception with the Brands

as Intentional Agents Framework. In this framework, corporations and organizations are likened to individuals; just as individuals are evaluated by others based on their intentions, actions taken by a corporation/organization are perceived as decisions made by an *intentional agent*. Behavior associated with a corporation is not perceived as an outcome resulting from complex group dynamics and decision making by multiple individuals in management, but rather as resulting from the action of a unitary intentional agent. Perceivers therefore would ask questions about warmth (“Does this brand have positive or negative intentions toward the public in general?”) and questions about competence (“Does this brand have the ability to carry out its plans and achieve its goals?”). Just like social groups in the Stereotype Content Model, corporations and organizations in our framework are perceived with a mix of high and low warmth and competence. Popular brands such as Campbell’s and Hershey’s are perceived as both well-intentioned and high on ability, subsidized brands such as Amtrak and USPS and NGOs are perceived as well-intentioned and warm but low on competence, and luxury brands such as Porsche and Rolex are high on competence but low on warmth (Aaker et al., 2010; Kervyn et al., 2012). Finally, brands such as BP and AIG that had recently been in the media at the time of data collection because of corporate scandals were perceived as low in both warmth and competence (Kervyn et al., 2012). These survey findings have been replicated experimentally—the manipulation of the intentions and ability of a fictitious brand had the predicted impact on participants’ attitude toward that brand (reported purchase intent and projected brand loyalty; Kervyn et al., 2012).

THE NEGATIVITY EFFECT ON WARMTH IN DISASTERS

How might having caused a disaster impact the perception of organizations and corporations? Given that anthropogenic disasters rarely have a unitary cause, there is much flexibility in how the blame is perceived—the same disaster could be perceived as caused by a shortfall in the organization’s warmth (greed, dishonesty) or competence dimension (incompetence, miscommunication). Based on the negativity effect on warmth, we predicted that when doubt was cast about the warmth dimension, judgments against the organization would be harsher than if doubt was cast about the competence dimension.

It is an interesting conundrum for an organization whose warmth has been questioned. Could one repair the damaged warmth reputation without bringing further attention to the existing negative warmth reputation? It would seem intuitive that an organization would want to target its reputation protection efforts at the domain that is threatened. However, the negativity effect on warmth would predict that when a negative warmth reputation is established, explicitly bringing attention to the organization’s positive warmth attributes could be ineffective because of the negativity effect on warmth, and because a reputation repair campaign is likely to further increase the salience of the damaged warmth reputation.

In order to test this negativity effect on warmth in brand perception, we conducted a survey and two experiments. In the survey, we compared the perception of troubled brands to the perception of comparable “untroubled” brands in terms of warmth and competence (Study 1). Study 2 tested if a disaster (municipal sewage spill) framed in terms of a lack of warmth would have more negative conse-

quences for the reputation of the company causing the disaster than one framed in terms of a lack of competence. Study 3, using the BP oil spill as a scenario, examined how disaster-damaged reputations (warmth or competence) followed by positive information about the warmth or competence of the organization would impact judgments toward the organization.

STUDY 1

The goal of this survey study was to address two questions: do corporate scandals differ in the impact they have on the warmth and competence perception of the company and are these differences in perception associated with differences in consumers' behavior toward these companies in a way that is consistent with the negativity effect on warmth? As part of a larger survey, we measured the perception of five pairs of brands. One brand in each pair had at the time the study was conducted (fall of 2010) been recently implicated in some form of a disaster while the other brand had not. The criteria we used to identify the comparison brands were that the comparison is also a well-known brand in the same industry sector, and occupies similar market positions (e.g., Tylenol® and Advil®). The five troubled brands were Tylenol® (public health crisis), Toyota (product safety crisis), Bank of America, Goldman Sachs, and AIG (financial crises). The corresponding five untroubled brands were, respectively, Advil®, Honda, JPMorgan Chase, Morgan Stanley, and Travelers Insurance. These represent the pharmaceutical industry (Tylenol® and Advil®), the car industry (Toyota and Honda), the banking industry (Bank of America and JPMorgan Chase), the investment industry (Goldman Sachs and Morgan Stanley), and the insurance industry (AIG and Travelers Insurance).

The five troubled brands had experienced different kinds of corporate disasters. Bank of America, Goldman-Sachs, and AIG played prominent roles in the 2008–09 banking crisis that rocked the U.S. economy and plunged it into a deep recession. In each case, as the crisis unfolded, serious questions were raised about what each firm knew about the risks (competence concerns), when they knew it, and whether they communicated honestly about them (warmth concerns). The three comparison brands: JPMorgan Chase, Travelers Insurance, and Morgan Stanley were, at the time the study was conducted, viewed relatively positively by the public for their responses to the crisis. In fact, JPMorgan Chase and its CEO Jamie Dimon were widely viewed to have done a much better job of navigating the crisis than the other banks. Toyota and Tylenol® both encountered corporate crises related to massive product recalls due to safety and product quality concerns. Prior to the recalls, both Toyota and Tylenol® had reputations for high product quality and reliability, so the recalls were considered surprising by the media and the public. Perhaps more damaging to their reputations, both companies were accused of ignoring/concealing the product quality issues for several years to avoid incurring the costs of addressing the problems. In these scandals, serious questions of knowledge (competence concerns) and intent (warmth concerns) were raised by the media and government regulators. We hypothesized that these crises would negatively impact both warmth and competence reputations of the corporation, and that corporations whose scandal affected mainly their warmth reputation would have less favorable consumer perceptions (purchase intent) when compared to their competitors.

METHOD

Participants and Procedure. A representative sample of 1000 U.S. adults was recruited from Toluna's double opt-in panel of over 2 million consumers. Respondents completed our online survey in exchange for \$1, typical for all Toluna panel surveys. The recruitment was weighted and balanced demographically to align with 2010 census estimates for age (18–87, $M = 46.05$), gender (514 females, 486 males), race (4% Asians, 11% Black/African American, 12% Hispanics, 74% White/Caucasians), income (17% less than \$20k/year, 17% from \$20–35k/year, 22% from \$35–60k/year, 21% from \$60–100k/year, 18% over \$100k/year), and education (2% some high school, 21% high school graduate, 24% some college, 6% technical school, 29% college graduate, 4% some graduate school, 7% graduate school, 7% post-graduate school).

Participants rated the 10 brands presented in a randomized order. Each brand was rated on two warmth (warm and friendly) and two competence items (competent and capable) on a 1 (does not describe at all) to 5 (describes extremely well) scale. The 10 brands were then rated for purchase intent: "Indicate how likely you would be to make purchase of/from (name of brand)." The item was rated on a 1 (definitely would not purchase) to 10 (definitely would purchase) scale.

RESULTS AND DISCUSSION

For each brand we computed a warmth and a competence score by averaging the two items of each dimension (all α s > .83). We then averaged the scores within the troubled brands to create a warmth index, a competence index, and a purchase intent index. We also created warmth, competence, and purchase intent indices for the control brand group. As expected, troubled brands ($M = 2.87$, $SD = .81$) were rated as significantly less warm than the control brands ($M = 3.20$, $SD = .75$), $t(999) = -19.27$, $p < .001$, $d = 1.22$. Troubled brands ($M = 3.08$, $SD = .79$) were also perceived as significantly less competent than the control brands ($M = 3.47$, $SD = .70$), $t(999) = -21.23$, $p < .001$, $d = 1.34$. The troubled brands ($M = 4.97$, $SD = 1.89$) were also rated significantly lower than the control brands ($M = 5.59$, $SD = 1.82$) on purchase intent, $t(999) = -13.99$, $p < .001$, $d = 0.89$.

We then compared the troubled and comparison brands separately for each industry sector. Three out of the five pairs showed a statistically significant difference in warmth ratings (see Table 1 for descriptive statistics). In the car industry pair, Toyota's warmth was significantly lower than Honda's, $t(999) = -15.58$, $p < .001$, $d = 0.99$. In the investment industry pair, Goldman Sachs's warmth was significantly lower than Morgan Stanley's warmth, $t(999) = -10.97$, $p < .001$, $d = 0.69$. In the insurance industry pair, AIG's warmth was significantly lower than Travelers Insurance's warmth, $t(999) = -17.61$, $p < .001$, $d = 1.11$. There were no differences in warmth between the other two pairs of brands: Tylenol® was not different from Advil®, $t(999) = -1.44$, $p > .05$, nor was Bank of America different from JPMorgan Chase, $t(999) = -0.90$, $p > .05$.

The competence scores were subjected to the same analyses, showing that four of the five groups showed a lowered competence score for the troubled brand. Toyota was significantly less competent than Honda, $t(999) = -19.45$, $p < .001$, $d = 1.23$. Goldman Sachs was less competent than Morgan Stanley, $t(999) = -10.43$, $p <$

TABLE 1. Means and Standard Deviations for Ratings of Warmth, Competence, and Purchase Intent for Study 1

	Warmth	Competence	Purchase Intent
Tylenol®	3.58 (1.04)	3.81 (1.02)	7.33 (2.71)
Advil®	3.62 (0.96)	3.92 (0.86)	7.30 (2.60)
Toyota	3.08 (1.22)	3.16 (1.29)	5.35 (3.22)
Honda	3.66 (1.02)	3.92 (0.99)	6.64 (2.85)
Bank of America	2.86 (1.27)	3.17 (1.24)	4.93 (3.07)
JPMorgan Chase	2.89 (1.19)	3.19 (1.17)	4.91 (2.98)
Goldman Sachs	2.36 (1.15)	2.65 (1.19)	3.52 (2.51)
Morgan Stanley	2.67 (1.13)	2.96 (1.12)	4.15 (2.63)
AIG	2.47 (1.16)	2.63 (1.18)	3.73 (2.69)
Travelers Insurance	3.16 (0.99)	3.34 (0.95)	4.93 (2.54)

.001, $d = 0.66$. AIG was less competent than Travelers Insurance, $t(999) = -17.83$, $p < .001$, $d = 1.13$. Tylenol® was less competent than Advil®, $t(999) = -3.67$, $p < .001$, $d = 0.23$. Bank of America's competence did not differ from JPMorgan Chase, $t(999) = -0.49$, $p > .05$.

As predicted, not all crises had the same influence. Of the five pairs of comparisons, three troubled brands were rated significantly less warm than their comparison brand, and four troubled brands were rated as less competent than their comparison brand. Toyota, Goldman Sachs, and AIG emerged from their respective corporate disaster with warmth and competence ratings lower than that of their competitors. However, Bank of America's warmth and competence did not differ from that of JPMorgan Chase. Most interestingly, Tylenol®'s competence reputation was lower than Advil®'s but its warmth reputation escaped damage from the disaster.

Based on our hypothesis, Tylenol® and Bank of America would likely be spared from the negativity effect on warmth. As expected, purchase intent for Tylenol®, whose warmth was *not* tarnished by the disaster, was not different from that for Advil®, $t(999) = 0.44$, $p > .05$ (Table 1). Similarly, Bank of America and JPMorgan Chase did not significantly differ in warmth nor purchase intent, $t(999) = 0.18$, $p > .05$. In contrast, Toyota, whose warmth suffered from the disaster, had significantly lower purchase intent than Honda, $t(999) = -13.80$, $p < .001$, $d = 0.87$. The same correspondence between warmth and purchase intent was also found for the remaining two pairs: Goldman Sachs's purchase intent was significantly lower than Morgan Stanley's, $t(999) = -10.70$, $p < .001$, $d = 0.68$; and AIG's purchase intent was significantly lower than Travelers Insurance's purchase intent, $t(999) = -14.12$, $p < .001$, $d = 0.89$.

We further explored this pattern of results by using a multiple regression approach, examining whether the decrease in warmth and competence ratings of the troubled brand could predict a decrease in purchase intent. For each participant, we calculated the difference in perceived warmth between the troubled and control brands (troubled warmth – control warmth), the difference in perceived competence (troubled competence – control competence), and the difference in purchase intent (troubled purchase intent – control purchase intent) between the

brands. The two difference scores were correlated, $r(999) = .77, p < .001$, but did not present a problem with multicollinearity in the regression analysis ($VIF = 2.42$). A multiple regression showed that the difference in warmth and the difference in competence both predicted the difference in purchase outcomes, $R^2 = .37, F(2, 997) = 292.99, p < .001$. Warmth ($\beta = .26, b = .67, CI: .50-.83, p < .001$) was a significant predictor for purchase intent, and so was competence ($\beta = .39, b = .93, CI: .77-1.09, p < .001$). The slopes for warmth and competence, however, were not statistically different from each other, contrary to our expectation.

The findings from Study 1 provided some initial support for the negativity effect on warmth. For the three pairs of brands where the disaster caused the troubled brand to be seen as less warm *and* less competent than the comparison brand, the crisis also appeared to have a negative impact on purchase intent. In contrast, when warmth was not damaged by the disaster, purchase intent was not affected. Our regression confirmed that warmth and competence impressions were important predictors for purchase intent, but the slope analysis suggested that the two domains did not differ in their impact. One possibility for the inconclusive findings from the regression analysis could be that this survey included a variety of crises that differed in nature and magnitude, with different crises receiving different types of media coverage and framing. For instance, some emphasized safety (competence) issues, while others emphasized greed and cover-up (warmth), and some a mixture of both simultaneously or at different points in the media's coverage. Even though we proposed that warmth should generally be the primary domain of interest in interpersonal perception, specific goal frames could lead perceivers to prefer competence over warmth information (Chan & Ybarra, 2002). In addition, participants were likely to have seen varied emphasis on warmth and competence from media reports of the scandals, and had different levels of awareness and familiarity of the scandals. These uncontrolled background variations could be concealing perceivers' underlying chronic emphasis on warmth information.

While Study 1 affirmed the external validity of viewing organizations implicated in disasters using the warmth and competence dimensions, the lack of control weakened our ability to directly investigate if, *ceteris paribus*, the negativity effect on warmth should lead perceivers to develop more punitive attitudes toward the troubled organizations. Study 2 addressed these limitations by experimentally examining how public opinion of a troubled organization is affected by manipulating how the cause of an actual environmental disaster was framed.

STUDY 2

In the following two studies we tested the negativity effect on warmth with an experimental approach. This allowed us to manipulate perceptions of warmth and competence and to measure the impact of the manipulation on perceivers' judgments about the disasters. In Study 2, we asked participants in a downtown area to respond to a newspaper commentary. The commentary involved a utility company and its record of spilling raw sewage into the local creek. The incidents of sewage spillage were genuine events that happened shortly before the study was conducted, creating an opportunity for a study with high external validity. The scenario we chose allowed us to present the exact same negative act performed

by the company. However, in one condition the commentary framed the disaster with warmth-related considerations and the other condition framed it with competence-related considerations. We hypothesized that the environmental disaster (sewage spill) would lead to a harsher judgment if it was framed as being caused by a lack of warmth rather than a lack of competence.

METHOD

Participants and Procedure. Eighty participants (age 18–83, $M = 42$; 26 females, 13 males, 41 did not report) were approached by the experimenter to complete a short questionnaire in a downtown area and on a college campus. The participants were not paid. Participants read a short commentary (215 words) ostensibly from a local newspaper, which dealt with the sewage leaks from the local utility company. The commentary first stated the problem: “Recently, there has been renewed attention on sewage spills into local waterways . . . must be dealt with because a spill of raw sewage is not only unsightly and bad smelling, it also damages the environment and releases dangerous e. coli . . .” The commentary in the warmth-related condition then framed the disaster in terms of a lack of warmth: “It makes one wonder if . . . blatantly ignoring its responsibilities to the community . . . Does it care about the neighbors downstream? Is it upholding its responsibility to the environment? Is it frank with the public?” The commentary in the competence-related condition framed the failures in terms of a lack of competence: “It makes one wonder if . . . unable to keep up with the proper maintenance . . . Does it have an updated plan to efficiently perform the work? Are its workers trained enough . . . ? Is it hiring people who are qualified and experienced . . . ?”

To create a realistic and quick measure of how serious people found the sewage spills to be, participants were asked a single question: “The state health department has the power to fine the utility for any spills. If another major spill should occur 2 months from now, how much would you recommend the fine to be?” They answered the question on a 7-point scale (\$0, \$50,000, \$100,000, \$150,000, \$200,000, \$250,000, \$300,000).

Partway into data collection, we added an additional question, asking participants ($n = 55$) to rate how difficult it would be for the utility company to repair its reputation. Adapting the procedure for testing how much evidence is required to disconfirm individual traits in trait inferences tasks (Rothbart & Park, 1986; Ybarra et al., 2008), we asked: “The utility company said it is working on preventing future spills. How much time would have to pass before you will feel that the utilities have really solved the problem?” Participants answered on a 7-point scale (2 months or less, 2–6 months, 6–12 months, 1–1½ years, 1½–2 years, 2–2½ years, 2½ years or more).

Pretest of Manipulation. A pretest with 57 participants recruited from MTurk.com (mean age = 32.6 years old, range = 19–60; 26 male, 31 female) confirmed that the warmth and competence framing was effective. Participants in the pretest viewed the stimulus (either warmth or competence framing) and then read the definitions of warmth (“Warmth refers to this question: ‘Does this group/person have good or bad intentions?’ Groups with good intentions are perceived as warm . . . Groups with bad intentions are perceived as cold”) and competence (“Competence refers to this question: ‘Does this group/person have the ability to carry out its work and

plans? Groups perceived as able to carry out their work and plans are perceived as competent . . . groups perceived as unable to do so are perceived as incompetent . . ."). They were then asked to rate how much the writer of the commentary questioned and doubted the warmth dimension of the utilities, and how much the writer questioned and doubted the competence dimension of the utilities on 7-point Likert scales with "no questioning of this dimension" and "strong questioning of this dimension" as anchors. As expected, a 2 (warmth or competence framing) \times 2 (rating of warmth or competence dimension) mixed ANOVA found a significant interaction effect, $F(1, 55) = 61.45, p < .001, \eta^2 = .53$. Pretest participants who read the warmth-framed stimulus showed stronger doubt about the warmth of the responsible company ($M = 6.21, SD = 1.00$) than participants who read the competence-framed stimulus ($M = 4.79, SD = 1.93$), $t(43.04) = 9.37, p < .001, d = 28.12$. Participants who read the competence-framed stimulus showed stronger doubt about the competence of the responsible company ($M = 6.52, SD = 1.35$) than participants who read the warmth-framed stimulus ($M = 2.62, SD = 1.80$), $t(48.21) = -3.93, p < .001, d = 48.64$.

RESULTS AND DISCUSSION

As predicted, participants made harsher judgments when the commentary questioned the utility company's warmth rather than competence. When the utility's failure was questioned as a potential manifestation of a lack of warmth, participants recommended that the utility be fined a higher penalty ($M = 5.18, SD = 1.65$; i.e., between \$200,000 and \$250,000) than when the failure was suspected to be caused by a lack of competence ($M = 4.33, SD = 1.78$; i.e., between \$150,000 and \$200,000), $t(76) = 2.17, p < .05, d = 0.50$. Furthermore, for the subset of participants ($n = 55$) who were asked the question of how much time would have to pass incident-free for them to believe that the utility company has addressed the causes of sewage spills, those who read the warmth-frame commentary required a longer incident-free period ($M = 5.33, SD = 1.71$) than those who read the competence-framed commentary ($M = 4.14, SD = 1.96$), $t(53) = 2.40, p < .05, d = 0.66$.

These findings confirmed our hypothesis of a negativity effect on warmth in brand perception following a disaster. Doubts about the utility company's warmth had stronger negative impact compared to doubts about its competence, as indicated by the higher fines levied against the company in the former than in the latter condition. The negative warmth reputation also appeared to be harder to change than the negative competence reputation, as demonstrated by the longer time that would have to pass incident-free before participants would believe that the utility company had fixed the sewage spillage problem.

What is of particular importance in this study is that a subtle manipulation questioning either the warmth or competence reputation was able to influence participants' judgment regarding a widely known local environmental disaster. Our study materials did not provide reams of evidence that unequivocally established the cause of the sewage spill to be either warmth or competence-related in nature. In fact, the commentary merely questioned if the target was lacking in one of the two dimensions; the subtlety of the manipulation lends support to the idea that perceivers are highly sensitive to signals of negative warmth (Ybarra et al., 2008).

STUDY 3

In our final study we investigated the public's perception of the BP Deepwater Horizon oil spill in the summer of 2010. This gave us the opportunity to test our hypothesis on a prominent and consequential national environmental disaster. Beyond the change in scale, we wanted to examine how perceivers who had formed a negative warmth or competence impression of an organization would react to subsequent positive information that could potentially improve the organization's reputation.

After a disaster, the negativity effect on warmth is capable of dealing a strong blow to the organization's reputation. Study 2 found that negative warmth led to more punitive judgments against the organization and a higher standard of proof for disconfirming the negative reputation. If an organization should find itself enshrouded with doubts about its warmth characteristics, might efforts to broadcast information associated with positive warmth be an effective strategy to restore its reputation? An examination of BP's oil spill media coverage suggested that efforts to repair a damaged warmth reputation could backfire and lead to greater distrust. The Deepwater Horizon oil spill immediately brought questions about the competence of the operators, as industrial disasters often do. But the subsequent media coverage rapidly introduced salient questions about warmth. For instance, nine days into the oil spill and as negative media attention was mounting, an exasperated Tony Hayward, BP's CEO, was reported to have publicly said, "What the hell did we do to deserve this?" (Krauss, 2010). A month later, as he apologized in a TV interview, "We're sorry for the massive disruption it's caused to [the Gulf resident's] lives," he added, "There's no one who wants this thing over more than I do. I'd like my life back" (Goodman, 2010). With doubts about BP's warmth put in the limelight, BP launched a media campaign to manage the crisis; by 6/4/2010, it was known to have contracted \$50 million of TV advertising to manage their image crisis ("BP Apology Campaign," 2010), prompting a sharp critique from President Obama: "What I don't want to hear is, when they're spending that kind of money . . . on TV advertising, that they're nickel-and-diming fisherman or small businesses here in the Gulf who are having a hard time" (Cooper, 2010).

As the BP example illustrates, perceivers can be quite critical of overt reputation repair attempts. When the initial disaster created a reputation of low-warmth, an intentional campaign to re-establish warmth is ineffective and could backfire for two reasons. First, according to the negativity effect on warmth, additional information about one's positive warmth is unlikely to be influential in immediately revising people's opinions because of the differential diagnosticity of positive and negative warmth information (Skowronski & Carlston, 1987, 1989). While negative warmth behavior is considered highly diagnostic of one's disposition because it is counter-normative and rare, positive warmth behavior is not as diagnostic because it is commonplace and normative. Second, focusing further on warmth will increase the salience of the warmth domain, and potentially remind people of their doubts about the target's warmth. Instead, a reputation repair response might be more effective if the target enacts positive behavior and adopts a competence-frame. Focusing on competence will direct perceivers' attention to competence, and potentially away from warmth. In addition, competence exhibits a positivity effect—positive evidence for competence is considered diagnostic and reflective of

positive competence characteristics. The combined impact of the positivity effect and the decrease salience of warmth could jointly lead to an increase in the general valence of the evaluation of the target.

When the initial disaster creates a reputation of incompetence, the target is in a stronger position to repair its reputation because incompetent behavior is considered less diagnostic than competent behavior (Rothbart & John, 1985; Skowronski & Carlston, 1987, 1989). If the target subsequently exhibits positive behavior, a competence-frame will repair the competence reputation via the positivity effect. If the subsequent positive behavior is framed as reflective of warmth, it could also facilitate reputation repair by increasing the salience of the undamaged warmth dimension over the competence dimension.

In the current study, we manipulated the initial warmth or competence framing of an environmental disaster using the same procedure as in Study 2 and then provided additional positive information about the corporation subsequently making amends. The positive information was provided in the form of a letter to the editor from a Gulf Coast resident who expressed approval of BP's responses to the oil spill. This (cautiously) positive letter framed BP's recent responses as evidence of positive warmth or positive competence.

We predicted that when warmth had been called into question, subsequent positive information with a warmth-frame would lead to harsher judgments for BP than positive information with a competence-frame. In contrast, if competence had been called into question, subsequent positive behavior in either warmth or competence frames would both facilitate reputation repair and lead to relatively more forgiving judgments for BP.

METHOD

Design. The design of the current study was a 2 (cause framing: *warmth vs. competence*) × 2 (response: *warmth vs. competence*) between-subjects factorial design. Four fictitious letters to the editor served as the manipulation. Each participant first read a letter about the cause of the spill, which portrayed BP as either cold or incompetent. Participants then read letters about the response to the spill, which portrayed BP's positive actions as warm or competent.

Participants. One hundred and forty-seven participants (age 18–69, $M = 32.8$; 87 female, 58 male) were recruited on Amazon.com's Mechanical Turk through a posting for a 5 to 10 minute survey about attitudes toward BP and the Gulf Oil Spill. Participants were all from the United States and were paid a small monetary amount for completing the online study. The sample was mostly White (75%), making less than \$80,000 a year (78%), with at least some college education (73%), from the east coast of the United States (49%). Participants completed the study in early July of 2010 in the days before a temporary cap stopped the flow of oil into the Gulf of Mexico for the first time in 86 days.

Materials and Procedure. Participants first read one of two fictitious letters to the editor, commenting on the cause of the oil spill. Both cause letters opened with the identical paragraph emphasizing the loss of human life and the environmental damage caused by the spill. The low-warmth cause letter then questioned "if BP only cares about the financial bottom-line," and if "they blatantly ignored their responsibilities to the coastal community." The incompetence cause letter portrayed

a fictitious Gulf Coast resident wondering “if BP is not competent enough to be drilling in deep water,” and if “they fully understand the risks that come with deep-water drilling.”

Participants then read one of two fictitious letters to the editor about BP’s response to the oil spill. Both letters opened with a paragraph emphasizing that cleanup “is picking up speed,” and that BP has vowed to “get this done,” and “make this right.” The warmth response letter highlighted how much claims workers cared about residents of the Gulf Coast and the writer’s impression that “BP is taking their responsibility seriously” and “listening to and responding to the needs of the people whose lives have been impacted by the spill.” The competence response letter highlighted the success of boom placement and the oil collected every day from the damaged well and the writer’s impression that “the current BP operations have proved themselves to be effective and well-executed” and “these recent signs of BP’s competence have finally reassured me that BP is responding proficiently.”

After reading one cause letter and one response letter, participants were asked to rate to what extent BP should be held financially responsible for environmental cleanup on a 5-point scale, ranging from 1 (*not held responsible*) to 5 (*held completely responsible*). Participants were also presented with an open-ended question asking them how BP’s actions made them feel. The responses were coded for whether or not participants spontaneously provided reasons that would mitigate BP’s fault and responsibility for causing the disaster.

Pretest of Cause and Response Letters. Fifty-three pretest participants recruited from MTurk.com (age: 18–65, $M = 31.6$; 26 female, 27 male) rated the pretest cause letter to examine if the warmth and competence dimensions were successfully manipulated. Pretest participants viewed either the warmth cause letter or the competence cause letter and read the definitions of warmth and competence. They were then asked to rate how much the writer of the commentary questioned the warmth dimension and the competence dimension on 7-point Likert scales. A 2 (warmth or competence framing) \times 2 (rating of warmth or competence) mixed ANOVA found the expected interaction effect, $F(1, 51) = 74.65$, $p < .001$, $\eta^2 = .59$. The warmth-framed cause letter was rated as showing greater doubt of the warmth dimension ($M = 6.35$, $SD = 0.85$) than the competence-framed cause letter ($M = 3.22$, $SD = 2.06$), $t(34.77) = 7.26$, $p < .001$, $d = 2.46$. The competence-framed cause letter was rated as showing stronger doubt about its competence ($M = 6.59$, $SD = 0.97$) than the warmth-framed letter ($M = 4.38$, $SD = 1.79$), $t(38.22) = -5.61$, $p < .001$, $d = 1.81$.

Fifty pretest participants recruited from MTurk (age: 18–59, $M = 32.3$; 21 females, 29 males) rated the response letter. Participants viewed either the warmth response letter or the competence response letter and read the definitions of warmth and competence. They were then asked to rate how much the writer of the commentary praised the warmth dimension and the competence dimension on 7-point Likert scales. A 2 (warmth or competence framing) \times 2 (rating of warmth or competence dimension) mixed ANOVA found the expected interaction effect, $F(1, 48) = 22.42$, $p < .001$, $\eta^2 = .32$. The warmth-framed response letter was rated as showing stronger praise of warmth ($M = 5.15$, $SD = 1.22$) than the competence-framed letter ($M = 3.92$, $SD = 2.21$), $t(35.30) = 2.43$, $p < .05$, $d = 0.82$. The competence-framed response letter was rated as showing stronger praise of competence ($M = 6.50$, SD

TABLE 2. Means and Standard Deviations for How Much Participants Believe BP Should be Held Responsible for Environmental Clean-up in Study 3

	Warmth response	Competence response
Warmth cause	4.92 (0.28)	4.60 (0.72)
Competence cause	4.63 (0.69)	4.66 (0.53)

= 0.72) than the warmth-framed letter ($M = 4.85$, $SD = 1.54$), $t(36.09) = -4.92$, $p < .001$, $d = 1.64$.

RESULTS AND DISCUSSION

To test our hypothesis, we examined participants' judgment of how much BP should be held responsible for environmental cleanup. A 2 (cause framing: *warmth vs. competent*) \times 2 (response framing: *warmth competence*) factorial ANOVA was performed. Main effects for cause framing and response framing were not significant, $F_s < 1$. The cause letter \times response letter interaction approached significance, $F(1, 142) = 3.38$, $p = .068$, $\eta p^2 = .02$. Directly testing our hypothesis, a significant planned contrast, $t(142) = 2.67$, $p < .01$, $d = 0.45$, confirmed that when BP was initially portrayed as low in warmth via the cause letter, the subsequent positive warmth response letter ($M = 4.92$, $SD = .28$) actually led to a higher rating of how much BP should be held responsible for environmental cleanup compared to the other three conditions: the same cause letter followed by a high competence response letter ($M = 4.60$, $SD = .72$), a low competence cause letter followed by a high warmth response letter ($M = 4.66$, $SD = .53$), and a low competence cause letter followed by a high competence response letter ($M = 4.63$, $SD = .69$). When the cause was low competence, the framing of the response letter did not have an effect, $p > .05$ (Table 2).

In response to the open-ended question about participants' reaction toward BP, some participants gave justifications or reasons that mitigated BP's fault (e.g., "Well, in my opinion it is not all BP's fault. They were allowed to drill irresponsibly because there are many more people behind the scene that benefit from those oil companies making money off oil." "I believe BP was doing all it could. This was the first time it was faced with a task like this."). We used a 3-way log-linear chi-square to analyze the frequency with which people spontaneously offered excuses for BP in the four experimental groups (2: cause framing \times 2: response framing). While overall very few people gave "excuses" for BP (12%), they were least likely to do so when a low warmth cause letter is followed by high warmth response letter (0 out of 36 participants). In contrast, all other conditions revealed similar tendencies to offer an excuse for BP: warmth cause + competence response generated 5 excuses (out of 30), competence cause + warmth response generated 6 excuses (out of 35), and competence cause + competence response generated 4 excuses (out of 43), $G^2(4, N = 144) = 11.84$, $p < .02$ (Table 3).

The findings about BP's responsibility for environmental cleanup and people's likelihood to offer excuses for BP presented a pattern consistent with our hypothesis. For an organization with a negative warmth reputation, subsequent positive information with a warmth-frame paradoxically led to more punitive judgments

TABLE 3. Proportion of People Who Offered Excuses for BP in the Different Conditions of Study 3

	Warmth response	Competence response
Warmth cause	0/36	6/35
Competence cause	5/30	4/43

Note. $G^2(4, N = 144) = 11.84, p = .02$

than when the subsequent positive information had a competence-frame or when compared to an organization with a negative competence reputation that received subsequent positive warmth or competence framing. In contrast, the competence domain had no negativity effect and thus subsequent positive information with either a warmth or competence frame could mitigate the negative cause framing.

GENERAL DISCUSSION

In three studies using different methods and a wide range of actual environmental and corporate disasters, we found converging evidence for the *negativity effect on warmth* in organizational perception. Similar to person perception and group perception, we found that perceivers were more sensitive to negative warmth than to negative competence information in brand perception. In Study 1, a survey with a nationally representative sample found that brands whose warmth reputation was injured received lower purchase intent, whereas Tylenol®, whose warmth remained unscathed compared to Advil®, did not suffer a decrease in purchase intent. In Study 2, we found that a disaster framed in terms of a lack of warmth was more damaging than one framed in terms of a lack of competence. Study 3 tested how a brand's reaction to a disaster can impact judgments toward that brand. Focusing on warmth after a damaged warmth reputation appeared to be a detrimental strategy.

The warmth negativity effect is a useful perspective to complement other existing approaches to studying disasters. Research on the nature of media coverage during crises has shown that topics of human interest, conflict, and blame tend to predominate (Dridger, 2007). After a Dutch disaster in 2000 where explosions at a fireworks factory caused extensive fatalities and property damage, Kuttschreuter, Gutteling, and de Hond (2011) found that negative media coverage amplified the crisis by employing a conflict frame and a responsibility frame to blame government organizations, leading to a decline in political trust. Our research suggests that negative warmth framing could be especially damaging to political and institutional trust.

Political trust following a disaster not only impacts the organization's reputation, but also affects the public's expectations of the outcome of mitigation and intervention efforts. Zhang and Wang (2010) studied the Chinese public's perception of the government after the Sichuan earthquake in 2008 and found that trust toward the government increased the perception of benefits from governmental actions and mandates, leading to greater cooperation and compliance. Our findings on the warmth negativity effect highlights the vulnerability of political trust in the face of negative media coverage: an institution such as a municipal government that is dependent on the cooperation of the population in its disaster response

(e.g., evacuation order, prevention of looting) could not be effective in mobilizing the public if it suffers a low-warmth reputation. Because of the negativity effect on warmth, assaults to an organization's warmth reputation during a crisis cannot be easily and rapidly repaired. It is therefore important that these institutions invest in building a robust warmth reputation before crises happen so that they have "warmth-capital" to draw on in an emergency.

Another important aspect of disaster research is that of mental health outcomes for victims. Surviving a trauma, especially a disaster that is partially human caused, has a negative impact on assumptions that people have about the benevolence and meaningfulness of the world (Janoff-Bulman, 1989). Data from victims of earthquakes and oil spills have found that believing in the benevolence of the world, being able to trust institutions, and having a sense of controllability served as buffers against trauma symptoms (Bödvarsdóttir & Elklit, 2004; Palinkas, 2012). Based on the negativity effect on warmth, blaming the disaster on another entity's lack of warmth is going to undermine one's sense of controllability, trust in institutions, and benevolence of the world. It is not feasible to aggressively attempt to restore controllability and trust by repairing negative warmth reputations because doing so is likely to require much time, a large volume of evidence, and could risk a backfiring effect (Study 3). As an alternative remedy, survivors of disasters who blame the crises on others' (lack of) competence might fare better in regaining the sense of controllability and trust because the positivity effect on competence makes it easier for people to perceive and trust the improvements of other's competence.

In sum, perception of organizations involved in disasters—be they government agencies, corporations, or nonprofit organizations—can be analyzed with the two fundamental dimensions of warmth and competence. Avoiding perceptions of bad intentions (negative warmth) during and after a disaster is critical to maintaining positive reputation, and has implications for punitive judgment, trust, and brand/institutional loyalty. While temporary lapses in competence are understandable and forgivable in the eyes of the public, evidence of ill intentions results in reductions in support and loyalty. The convergence of findings about the role of warmth and competence in person perception, group perception, brand perception, and corporate reputation has significant implications for those seeking to successfully manage and minimize the impact of disasters, crises, and corporate scandals.

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