

**The attenuation effects of time and “sensemaking” surveys
on customer revenge**

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Forthcoming, *Journal of the Academy of Marketing Science*

Keywords: longitudinal models, field studies, service failure-recovery, relationship quality, complaint, customer revenge and forgiveness, double deviation, sensemaking, benevolent trusting beliefs

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Acknowledgments:

The authors are very appreciative of the support received from the Chair Omer DeSerres in Retailing at HEC Montréal and from RATS Grant (2236360/MKHAM) provided by the Kelley School of Business, Indiana University.

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Abstract

The attenuation of revenge-related responses after a major service failure is not simply caused by the passage of time—as is assumed in prior work. Instead, we propose that the effect of time is enhanced by the completion of multiple surveys that allow customers to constructively make sense of their service failures. We document this sensemaking-based attenuation effect by conducting four longitudinal experiments; each of them includes a series of three to four surveys completed over four to eight weeks. Doing so, we make three key contributions. First, all studies show that customers having the opportunities to complete *a series* of sensemaking-inducing surveys report fewer revenge-related responses than participants completing a *single* survey (i.e., a control group) for the same period. Second, we document the process at play by manipulating the contents of surveys (i.e., “cognitions and emotions” vs. “only cognitions” vs. “only emotions”) and by showing the mediation roles played by sensemaking and benevolent trusting beliefs. Third, we identify quality of pre-failure relationship as a boundary condition whereby the attenuation is stronger when relationship quality is weaker. Finally, we explain how sensemaking can be prompted by marketers to appease their customers.

Keywords: Longitudinal models, Field studies, Service failure-recovery, Relationship quality, Complaint, Customer revenge, Double deviation, Sensemaking, Benevolent trusting beliefs

Customers become growingly angry and feel a desire for revenge against firms after service failures, especially in the context of a double deviation—that is, a service failure followed by a failed recovery (Bitner et al., 1990). Prior research explains that revenge-related responses are much higher after double deviations compared to single service failures (Bechwati & Morrin, 2003). These responses include cognitions, emotions, motivations and behaviors that compose the revenge process (e.g., betrayal, anger, desire for revenge). Indeed, when customers perceive that firms fail them at the recovery stage, they see revenge as a form of last recourse to restore justice (Grégoire et al., 2009). Fortunately, marketers can find comfort in the fact that revenge-related responses tend to be relatively short-lived, as they tend to naturally dissipate over time (e.g., Grégoire et al., 2018; McCullough et al., 2011). Accordingly, marketers might think of time as an effective recovery tactic; they only have to wait to see a reduction in customers' revenge-related responses.

The current research challenges this oversimplified view of the effect of time. We argue that the observed reductions in revenge-related responses are not simply caused by the passage of time in itself, as is generally assumed in this literature (e.g., Grégoire et al., 2018; McCullough et al., 2011). This reduction over time can also be explained by the fact that research participants had the opportunity to complete a series of surveys, which prompted a beneficial sensemaking process. In simple terms, we propose that the observed reduction is explained by passing time *combined* with a sensemaking process prompted by the completion of surveys. This view is consistent with the literature on traumatic events (Barclay & Skarlicki, 2009), which advances that time has a greater “healing” effect when individuals confront and reprocess the negative thoughts and emotions associated with a negative event. Building on these explanations, the

general purpose of our research is to document the attenuation effects of sensemaking prompts (e.g., surveys) on the reduction of revenge-related responses over time.

Broadly defined, *sensemaking prompts* can be viewed as any intervention that encourages customers to reprocess their negative events with firms by revisiting their related cognitions and emotions. These prompts can take different forms, including expressive writing, therapies, exercises, or questionnaires (Barclay & Skarlicki, 2009). In this research, as the specific prompt of interest, we focus on the use of surveys that comprehensively evoke the core cognitions (e.g., fairness, attributions, severity) and emotions (e.g., anger, dissatisfaction) associated with double deviations. For clarity, these surveys are labelled “*sensemaking surveys*” at a conceptual level or “*cognitions and emotions evoking surveys*” at an operational level. In sum, we suggest that completing a series of sensemaking prompts in general—and sensemaking surveys in particular—helps customers reappraise double deviations in a constructive manner (Maitlis & Christianson, 2014; Maitlis et al., 2013). In turn, this sensemaking enhances the attenuation of revenge-related responses (e.g., betrayal, anger, desire for revenge) over time. Accordingly, marketers cannot simply assume that time alone represents an effective recovery. Time should be accompanied by a series of sensemaking prompts (e.g., surveys) to create a “healing effect.”

Although our logic should apply to most sensemaking prompts, we frame our contributions specifically for sensemaking surveys. We do so because our research relies on prior work using longitudinal surveys to study revenge and forgiveness (e.g., Grégoire et al., 2018; McCullough et al., 2011). This literature is thoroughly reviewed and establishes the foundations of our research. In addition, surveys are tools often used in marketing and readily accessible to managers. With this focus in mind, the current research makes three core contributions.

First, previous research has overlooked the plausible confounding effects of time with answering a series of surveys inducing sensemaking (i.e., Grégoire et al., 2009, 2018; McCullough et al., 2003, 2007). To address this issue, our four longitudinal studies (two field studies and two lab-style experiments) include control groups in which a single survey is administered at the end of the same period. Thus, we isolate the effects of completing a *series* of “cognitions and emotions evoking surveys” vs. *only one* survey by keeping the time factor constant. We consistently find that a series of these surveys decreases revenge-related responses (e.g., betrayal, anger, desire for revenge) to a greater extent than the control condition for the same period. Through our different studies, we show that such an attenuation effect is robust to different series (three vs. four surveys), types of studies (field vs. lab), responses (perceptual vs. behavioral), timeframes (four vs. eight weeks), or type of sender (firms or third-party).

Second, we establish that sensemaking is a core process underlying the focal attenuation effect. Essentially, sensemaking results from a comprehensive and sustained process of revisiting all the aspects (cognitive and affective) of a negative experience to promote a form of individual betterment or self-healing (e.g., Barclay & Skarlicki, 2009; Heaphy, 2017; Maitlis & Christianson, 2014; Michailidis & Cropley, 2019; Saldanha & Barclay, 2021). We test the presence of a sensemaking process in two ways: 1) by manipulating the content of surveys and 2) by testing the mediation effect of a sensemaking variable. First, we show that surveys need to have a sensemaking potential—that is, to evoke *both* the cognitive and emotional facets of double deviations—to produce a strong attenuation effect (e.g., Barclay & Skarlicki, 2009). To do so, in Study 1b, we manipulate the content of the surveys and demonstrate that the attenuation effect is stronger for “cognitions and emotions evoking surveys”—compared to surveys including “only cognitions” or “only emotions.” Second and more importantly, we directly

measure sensemaking in Studies 2 and 3 and establish its mediating role in explaining the attenuation effect, along with benevolent trusting beliefs. Indeed, as customers make sense of their negative experience, their beliefs about a firm's benevolence intention for sending them the surveys also increase (Khamitov et al., 2024; White & Yuan, 2012).

Third, we assess the moderating role of pre-failure relationship quality on the proposed attenuation effect. There is a rich history of understanding whether customers with a strong prior relationship respond less favorably after a transgression. Compelling evidence suggests that customers with a strong pre-failure relationship struggle to make sense of a double deviation (e.g., Harmeling et al., 2015; Khamitov et al., 2020). Accordingly, we argue that such individuals have difficulty processing double deviations, which would hamper the rate of their attenuation process. In brief, pre-failure relationship quality should serve as a key boundary condition; the attenuation effect is less pronounced as the level of pre-failure relationship quality increases.

Conceptual background

The effects of time on revenge-related responses

We located 14 individual studies examining the effect of time on revenge-related responses in psychology and marketing (see Table 1). In psychology, McCullough and colleagues have built an influential research program on revenge and forgiveness in which they modeled time with repeated measures. This stream finds that revenge and other related variables (such as anger) quickly decrease over time, whereas reconciliation or benevolence increases over time. These findings occur over a measurement period varying between 21 days and four months. The work of McCullough et al. (2003) showed that revenge and avoidance decrease over time, and that this pattern is consistent among samples, types of transgressions, and study length.

----- Insert Table 1 about Here -----

Marketing research on the unfolding of revenge over time has been scarce, with two exceptions. Using a combination of undergraduate students and online complainers, Grégoire et al. (2009 Pilot study, Study 1) and Grégoire et al. (2018 Study 1) focus mainly on the differential effect of time on revenge and avoidance. Their findings confirm that revenge, betrayal, and retaliatory behaviors (i.e., such as vindictive complaining and negative word-of-mouth) decrease over time for periods varying between six and eight weeks. Building on the work of McCullough, Grégoire et al. (2009; 2018) also use repeated measures, with an interval of two weeks, to capture the effect of time.

Taken together, these studies suggest that the passage of time creates the reduction of revenge-related responses. People would naturally reduce their revenge-related responses over time because such responses are too “costly” to maintain in the long term (Grégoire et al. 2009; McCullough et al., 2013). Indeed, sustaining a strong desire for revenge would involve extensive psychological resources in terms of emotions (i.e., anger) and cognitions (i.e., betrayal), which may be difficult and unhealthy to maintain over time. For example, someone experiencing a strong desire for revenge would keep feeling angry and ruminating about the negative event. In addition, revenge takes much energy to plan and enact despite limited potential future gains. As a result, sustaining a strong desire for revenge appears unreasonably costly for individuals, who naturally seek to reduce its costs—in terms of emotions, cognitions, and efforts—over time.

The confounded or combined effect of time and sensemaking surveys

Although these explanations are sensible, we believe they are somewhat incomplete because they fail to account for the confounded effect of completing surveys with the time variable. We note that researchers in prior studies (Table 1) use surveys that *always* contain questions about *both* cognitions and emotions related to interpersonal transgressions (McCullough et al., 2003) or

double deviations (Grégoire et al., 2009). This literature relies on exhaustive surveys that could serve as sensemaking prompts allowing individuals to reconsider the different facets of a transgression over time. Consequently, we posit that the reduction of revenge-related responses is not explained only by the passage of time. It is also explained by the completion of multiple “cognitions and emotions evoking surveys” prompting sensemaking and benevolent trusting beliefs over time.

To test this logic, the current research disentangles the effect of the completion of sensemaking surveys over time from the effect of time alone. To do so, we employ a design that manipulates the number of completed surveys. All our studies include at least two basic conditions: a series of “cognitions and emotions evoking surveys” and a control group including only one of these surveys at the end (see Table 1). By administering such control conditions, we keep constant the time factor. The differences that remain between both conditions cannot be explained by time, but rather by the administration of surveys over time.

Importantly, the current research does not imply that time has no effect on the reduction of revenge-related responses. Conformably with prior work (see Table 1), our research relies on the assumption that time is associated with a natural long-term healing effect¹ because extreme negative cognitions and emotions are difficult to sustain over time. Building from this premise, we suggest that sensemaking prompts in general—and sensemaking surveys in particular—enhance this natural healing effect. Stated differently, we do not argue that sensemaking surveys act in isolation of the effects of passing time. When customers are prompted to make sense of a double deviation, they still need some time to engage in this process.

¹ We do not develop a hypothesis about the isolated effect of time for two key reasons. First, it is difficult to measure the true effect of time by using surveys. As highlighted, the completion of surveys can induce sensemaking and influence the effect of time. Second, even if we could isolate the effect of time by design, we have little indication of the timeframe that is needed to observe a “natural” reduction of revenge-related variables.

This view is consistent with the literature on traumatic events, which explains that time has a greater healing effect when individuals have an opportunity to self-express in a constructive manner (e.g., Barclay & Skarlicki, 2009; Michailidis & Cropley, 2019). For instance, individuals who experienced a traumatic event feel less revengeful when they engage in self-expressive writing, which allows them to restructure their thoughts and face their negative emotions. Time and repetition still play a role in this healing process, though. Individuals need some time to reconsider the situation in a constructive manner and to repeat the exercises.

The content of surveys inducing sensemaking

We reviewed the content of the surveys used in marketing to better understand their sensemaking virtues. Grégoire and colleagues (2009; 2018) use 11 surveys in three longitudinal studies. As it is the norm in this literature (Khamitov et al., 2020), these surveys are organized following an appraisal-based model—that is, a sequence “cognition – affect – behavior.”

All surveys follow a similar format. After a description of a double deviation, a first series of questions relates to the appraisal of the relationship and includes constructs such as trust and commitment. Then, the surveys contain established cognitions such as the justice dimensions, failure severity, and blame. In the middle section, the surveys present judgments involving an affective component (e.g., betrayal, rumination, and power) and different emotional responses (e.g., anger, dissatisfaction and desire for revenge). The surveys end with emotionally driven behaviors (i.e., negative word-of-mouth, and complaining behaviors) and individual differences (i.e., trait anger and demographics). Using these surveys as models for our own research, we invite readers to consult Web Appendix A for detailed contents and references (Tables A9-12).

Although the reviewed surveys always map the “cognition – affect – behavior” sequence, their contents can change in terms of length and inclusion of specific constructs. Here, Grégoire

et al. (2009) use long and short versions of their surveys (Table B9). In the long version, the survey counts 138 items and takes between 17.24 and 20.07 minutes. In the short version, the survey counts 72 items, and its completion time varies between 6.83 and 10.10 minutes.

Development of hypotheses

Building on this rich conceptual background, Figure 1 synthesizes the framework guiding the development of our hypotheses. The proposed attenuation effect is generally observed when we compare, at the end of a given period, the responses of consumers having completed *a series of “cognitions and emotions evoking surveys”* vs. *only one of these surveys*. Figure 1 also shows that the attenuation effect is serially mediated by sensemaking and benevolent trusting beliefs while moderated by customers’ pre-failure relationship quality with the firm.

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The scope of revenge-related responses

We examine the aforementioned attenuation effect *specifically* for revenge-related responses occurring after double deviations. First coined by Bitner et al. (1990), the term “double deviation” involves a service failure followed by a failed recovery, and this context has been regularly studied in marketing (Suresh & Chawla, 2022). We focus on revenge-related responses because they are especially damaging for firms (Bechwati & Morrin, 2003; Grégoire et al., 2018). In terms of specific revenge-related response variables, we focus on five core ones: betrayal, anger as well as the desires for revenge, avoidance and reconciliation.²

First, perceived betrayal is defined as the extent to which a customer believes a firm has intentionally violated what is normative in the context of their relationship; this cognition has been identified as one of the strongest predictors of retaliatory behaviors (e.g., Reimann et al.,

² Although our hypotheses concern mainly these variables, we replicate our findings with other variables typically studied (e.g., justice dimensions, blame, and dissatisfaction) after a double deviation (see Web Appendix B).

2018). Second, anger is defined as an extreme negative emotion that creates a strong impulse to react and respond to the source of conflict. Numerous studies have examined the significant linkages between anger and revenge (Joireman et al., 2013).

We also examine three desires—revenge, avoidance, and a lack of reconciliation—that are regularly studied in combination in psychology (Aquino et al., 2006) and marketing (Grégoire et al., 2009; Joireman et al., 2013). These three motivations are often examined together because they reflect a tendency to “unforgive” a transgressor. Formally, a desire for revenge is defined as a customer’s propensity to punish and harm a firm for the damage it has caused, whereas a desire for avoidance represents a customer’s propensity to avoid any contact with a firm (McCullough et al., 1998). A lack of reconciliation is defined as a customer’s reluctance to rebuild a damaged relationship by extending acts of goodwill toward the firm (Aquino et al., 2006).

The key role of sensemaking in the attenuation effect

As previously discussed, we posit that sensemaking is a core process (Maitlis & Christianson, 2014; Maitlis et al., 2013) explaining the proposed attenuation effect. By completing a series of comprehensive surveys over time, aggrieved customers should be in a better position to understand the whole situation and to reprocess its multiple facets in a holistic manner—which is what sensemaking entails (Harmeling et al., 2015; Maitlis & Christianson, 2014; Maitlis et al., 2013). In turn, such enhanced sensemaking should lead, at the end, to a steep reduction of the revenge-related responses over time. This sensemaking logic is consistent with prior work discussing the virtues of self-expression after traumatic events (e.g., Barclay & Skarlicki, 2009; Saldanha & Barclay, 2021). According to this literature, making sense of adverse thoughts and feelings is healthy, while repressing negative experiences can cause psychological harm (Bushman et al., 1999). Here, we argue that responding to sensemaking

prompts could give aggrieved customers an opportunity to better confront and understand the situation. Answering such prompts can be construed as a form of self-healing wherein customers can come to terms with the adverse event (Tsarenko et al., 2019).

Importantly, consumers need to make sense of *all* the critical aspects of a negative event so that they can self-heal and return to a normal state characterized by less intensity. As previously noted, the reprocessing of *both* emotions and cognitions is of prime importance to trigger the process of sensemaking. Initially, emotions are “the energy that drives, organizes, amplifies, and attenuates cognitive activity” (Dodge, 1991, p. 159), and they represent the force that leads individuals to engage in the sensemaking process (Harmeling et al., 2015). In turn, emotions and cognitions keep impacting one another through a series of “sensemaking” interactions (Balogun et al., 2015; Heaphy, 2017; Steinberger et al., 2015). Building on the above, we demonstrate in two ways how sensemaking plays a role in the proposed attenuation effect. First, we explain the role of a series of “cognitions and emotions evoking surveys” to reduce revenge-related responses (H1). Second, we directly hypothesize the mediation role of sensemaking (H2).

The effects of completing a series of sensemaking surveys (H1)

Our first hypothesis captures our basic attenuation effect, and it centers on the premise that the completion of *a series* of “cognitions and emotions evoking surveys” should be conducive to sensemaking. As double deviations entail both strong cognitions and emotions, the attenuation effect is more likely to occur when a survey’s content is coherent with these two critical dimensions (Heaphy, 2017; Maitlis & Christianson, 2014). In this context, as previously identified in our conceptual background (Grégoire et al., 2009, 2018), sensemaking surveys should refer to key cognitions (e.g., fairness, attributions, severity, and relational constructs) and emotions (e.g., anger, revenge, avoidance) that are usually associated with double deviations.

Building on these explanations, we propose a hypothesis that refers to the design of our studies, which includes a series of “cognitions and emotions evoking surveys” and a control condition (see Table 1). We expect that the completion of *a series* of such sensemaking-inducing surveys lowers the intensity of revenge-related responses to a greater extent than *only one* of these surveys for the same time period. To obtain a strong reduction in revenge-related responses, customers need to *repeatedly reprocess* their negative cognitions and emotions over time to make sense of them (Harmeling et al., 2015; Maitlis et al., 2013) and feel less revengeful about them. Through this hypothesis, we argue that time needs to be combined with repeated sensemaking opportunities to have a strong attenuating effect on revenge-related responses.

H1a After a double deviation, customers’ revenge-related responses (e.g., anger, betrayal, desire for revenge) are attenuated when they complete a series of “cognitions and emotions evoking surveys” (i.e., sensemaking surveys) compared to a control group involving only one of these surveys at the end.

We posit that the beneficial self-healing effect associated with the completion of multiple surveys is mainly present when they evoke both key cognitions and emotions. The expected attenuation effect should not be observed when customers complete multiple surveys that evoke *only cognitions* or *only emotions*—that is, for questionnaires displaying either only a cognitive content or only an emotional content. In such cases, these surveys would not allow customers to reconsider all the aspects of their negative experience, which would impede their sensemaking process and the occurrence of the proposed attenuation effect. As previously noted, literatures in psychology (e.g., Barclay & Skarlicki, 2009; Maitlis et al., 2013) highlight the importance of developing instruments including both cognitions and emotions to generate self-healing. Despite this evidence, this assumption has not been tested for surveys in marketing. Accordingly, we set out to replicate this assumption in one of our studies (i.e., Study 1b).

H1b After a double deviation, customers' revenge-related responses (e.g., anger, betrayal, desire for revenge) are attenuated when they complete a series of "cognitions and emotions evoking surveys" (i.e., sensemaking surveys)—compared to conditions involving a series of "only emotions evoking surveys" or a series of "only cognitions evoking surveys."

The key mediating role of sensemaking (H2)

After describing our basic attenuation effect in H1a, we now turn to demonstrating the ability of "cognitions and emotions evoking surveys" to enhance individual sensemaking in a direct manner, which in turn would reduce revenge-related responses. Here, we directly capture the concept of perceived sensemaking (i.e., an individual customer's ability to holistically understand a situation and reorganize its different facets in a constructive manner; Maitlis & Christianson, 2014). Building on our prior explanations, we posit that answering multiple "cognitions and emotions evoking surveys" repeatedly gives aggrieved customers opportunities to better confront and understand the situation from different aspects (e.g., Harmeling et al., 2015; Maitlis et al., 2013). The repeated completion of such surveys provides customers with effective opportunities to reconceive their originally negative experience. Because reconstruing an adverse experience represents a central element of sensemaking in action, repeatedly responding to such surveys should stimulate this process. In turn, such enhanced perceived sensemaking should ultimately lead to the reduction of the revenge-based responses of interest.

H2a After a double deviation, the attenuation effect of completing a series of "cognitions and emotions evoking surveys" on revenge-related responses (e.g., anger, betrayal, desire for revenge) is mediated by perceived sensemaking.

While we posit that sensemaking is the core mechanism at play, we also refine our understanding of its effect by proposing a serial mediation involving a second variable: *benevolent trusting beliefs*. This variable reflects customers' confidence that the "firm has a

positive orientation toward its customers, which goes beyond an ego-centric profit motive” (Schlosser et al., 2006, p. 134). That is, benevolent trust conveys individuals’ conviction that the firm is well-intentioned and cares about its customers’ wellbeing (Khamitov et al., 2024; White & Yuan, 2012). If answering a series of “cognitions and emotions evoking surveys” over time can prompt customers to reconsider a double deviation in a positive light, such an enhanced sensemaking could also influence their beliefs about firms’ ultimately good intentions and sense of care in times of adversity. Indeed, helping aggrieved customers better understand their unfortunate situation via sensemaking is likely to reinforce their belief that the firm did not intentionally harm them and has a positive inclination toward them. In turn, benevolent trusting beliefs are known to be associated with a host of favorable outcomes, such as reducing betrayal and revenge (Cao et al., 2014; Xie & Peng, 2009).

H2b After a double deviation, the attenuation effect of completing a series of “cognitions and emotions evoking surveys” on revenge-related responses (e.g., anger, betrayal, desire for revenge) is serially mediated by perceived sensemaking (proximal mediator) and benevolent trusting beliefs (distal mediator).

The moderating role of pre-failure relationship quality (H3)

We complete our understanding of the sensemaking process by examining the moderating effect of pre-failure relationship quality. We argue that a strong pre-existing relationship with a firm can make the sensemaking process more difficult and lengthier, which impedes the attenuation effect of sensemaking surveys. Consistent with numerous authors (e.g., Johnson et al., 2011; Khamitov et al., 2019), we conceptualize prior relationship strength through the concept of pre-failure relationship quality—that is, a higher order construct composed of trust, commitment, and social benefits. We argue that pre-failure relationship quality is a boundary condition that should interfere with the *rate* of the hypothesized attenuation effect (see Figure 1).

Customers perceiving a *low level of pre-failure relationship quality* should accept the situation more easily because such a relationship is not personally relevant. For them, the process of sensemaking should be faster and more straightforward. Since these customers are less likely to perceive a relational norm transgression, they can focus their sensemaking on the focal double deviation instead of the whole relationship. In turn, customers perceiving a *high level of pre-failure relationship quality* are more likely to view a double deviation as a violation of their relational norms, which would create distress (Grégoire et al., 2009; Harmeling et al., 2015). The attenuation effect described in H1a should be less pronounced for these customers. Building on these explanations, we predict that the rate of the attenuation effect from completing a series of “cognitions and emotions evoking surveys” should be reduced as the level of pre-failure relationship quality increases.

H3 After a double deviation, pre-failure relationship quality moderates the attenuation effect of completing a series of “cognitions and emotions evoking surveys” on revenge-related responses (e.g., anger, betrayal, desire for revenge) so that the rate of decrease across survey waves is less pronounced as the level of pre-failure relationship quality increases.

Overview of the studies

We present four longitudinal studies. In Study 1a, we test the basic attenuation effect of answering a series of “cognitions and emotions evoking surveys” (H1a) and the moderation effect of pre-failure relationship quality (H3). In turn, Study 1b verifies our assumption about the content of the surveys (H1b). Then, in Study 2, we replicate the basic attenuation (H1a) and moderation (H3) effects, and we test the mediation effect of perceived sensemaking (H2a). Finally, Study 3 replicates H1a and tests the mediation of perceived sensemaking and benevolent trusting beliefs (H2b) while ruling out several rival mechanisms.

Study 1a: The attenuation effect (H1a) and its boundary condition (H3)

Context

This study was conducted with ConsumerAffairs.com, a credible online review website. The managers of this website gave us access to a list of customers whose service failures had not been solved despite complaining to the firm. Accordingly, all these customers had experienced a double deviation (i.e., service failure and a failed recovery). Following their misadventure, these customers had sent a complaint through the website in the last 10 days prior to the study.

Experimental design, conditions, measures, and sampling

Design We randomly assigned the complainers of ConsumerAffairs.com to one of the two conditions of a single factor between-subject experimental design. The factor “survey administration” includes 1) a series of “cognitions and emotions evoking surveys” (i.e., treatment) vs. 2) a single “cognitions and emotions evoking survey” (i.e., control). In the treatment condition, participants received such surveys on four occasions (waves) administered at a regular interval. In turn, participants in the control condition received only a single survey at the end—that is, at the same time as the last wave of the treatment condition.

Procedure In the treatment condition, the complainers received a web link by email prompting them to enroll in a study about their recent complaint. There was no other pre-notification than the introduction email, which was sent by the researchers. Here, the participants were informed that the study included four waves of surveys, which would be sent every two weeks—an interval consistent with the literature (see Table 1). In Wave 1, the first email (with the survey link) was followed by two reminders. We used a similar multi-contact approach for waves 2-4 (i.e., an email with two reminders).

In the control condition, the complainers received an email (and web link) two months into the study, which directly asked them to complete a single survey. They received the link at the

same time as the last wave in the treatment, and they completed the same survey as in the treatment. As was the case for the first wave of the treatment, participants were sent an introduction without pre-notification. This initial email was followed by two reminders.

Manipulations and sensemaking treatment The surveys received by participants in both conditions—treatment and control—consisted of three parts: the description of the double deviation, the cognitive and emotional content related to the double deviation, and personal information. In the mid-section, participants answered questions that included both cognitive and emotional variables. Using scales adapted from prior work, participants answered questions about both their current positive and negative thoughts (e.g., severity, justice, etc.) and emotions (e.g., anger, revenge, etc.). The content of all surveys can be found in Web Appendix B.

The difference between both conditions is that the treatment condition refers to the completion of four surveys over time, whereas the control condition contains only a single survey. This design allows testing whether the attenuation of the revenge-related responses in the treatment condition—compared to the control condition—is due to the repeated assessment of cognitions and emotions over time, which would foster sensemaking.

Measures The measures of the dependent variables were adapted from prior work and, unless otherwise noted, they relied on a seven-point Likert scale. All scale items are reported in the Appendix of this article and possess adequate psychometric properties (see Web Appendix C). Perceived betrayal was measured with a five-item scale (Grégoire et al., 2009) that asked, for instance, whether “I feel betrayed by the firm.” In turn, anger was measured by asking participants about the extent to which they felt anger, resentment, outrage, and fury (Joireman et al., 2013). We used an established five-item customer revenge scale (Grégoire et al., 2009) consisting of statements such as “I want to take actions to get the firm in trouble.” Finally, for the

measurement of the moderator (H3), we relied on De Wulf et al.'s (2001) scales to measure pre-failure relationship quality, which is composed of trust (four items), commitment (three items) and social benefits (four items). See correlation matrices in Web Appendix B.

Sampling Of the initial 1,901 complainers contacted from ConsumerAffairs.com, 1,424 (75% of the sampling frame) were assigned to the treatment condition, while 477 complainers (25%) were assigned to the control condition. Since we expected some attrition in the treatment condition (McCullough et al., 2007), we randomly assigned a larger percentage of individuals to this condition. In the treatment condition, 248 participants completed wave 1, for a 17.4% overall response rate. Among these participants, 175 participants completed wave 2, 132 wave 3, and 113 wave 4, which represents a final response rate of 7.9%. In the control condition, 54 participants completed the survey for an 11.3% response rate. The double deviations reported by participants occurred principally in the retail industry (36.4%), automotive (14%), financial services (13.6%), cell phone providers (11.6%), websites and online services (8.8%), appliances (7.6%), computers (4.4%), and other industries (3.6%). We took extensive measures to ensure that self-selection was not an issue in this study and all other studies (see Web Appendix D).

Results

Attenuation (H1a) We conducted a one-way MANOVA on the three dependent variables measured at wave 4. In this model, “survey administration” is a between-subjects factor comprising both conditions: multiple “cognitions and emotions evoking surveys” (treatment) and the single survey at the end (control). The ANOVAs accounted for three control variables: failure severity, receiving a satisfactory resolution by wave 4, and giving up on the idea of resolving the problem by wave 4. See Figure 2 for an overview of our results.

----- Insert Figure 2 about Here -----

The “survey administration” factor had a significant main effect on the three dependent variables (Wilk’s Lambda = .805, $F(3,150) = 12.11$, $p < .001$), with the three control variables being significant ($ps < .05$). Simple tests revealed that participants in the treatment condition reported, after two months, less betrayal ($M_{\text{series of “cognitions and emotions evoking surveys” (treatment)}} = 5.03 < M_{\text{single “cognition and emotions evoking survey” (control)}} = 6.13$, $p = .004$), anger ($M_{\text{treatment}} = 3.04 < M_{\text{control}} = 5.10$, $p < .001$), and revenge ($M_{\text{treatment}} = 2.64 < M_{\text{control}} = 4.28$, $p < .001$), compared to the control group. H1a is supported for each outcome.

Moderation (H3) These analyses were conducted only with the participants from the treatment condition (series of surveys), which is the only condition in which we measured *pre-failure relationship quality* at wave 1. Because we asked participants to remember their relationship before the double deviation, this variable had to be measured soon after the event to minimize memory bias. We therefore tested the interaction between the variable “repeated surveys” (i.e., the repeated measurement of each dependent variable across the four waves) and “pre-failure relationship quality” measured at wave 1. Consistent with H3, a positive interaction would indicate that the attenuation rate of a revenge-related response across waves—a negative effect—is less pronounced as pre-failure relationship quality increases.

We applied a mixed modeling approach (Diggle et al., 2002) to account for the effects of the repeated dependent variable measures, pre-failure relationship quality, and their interaction. Mixed modeling incorporates the observations from all participants, even those who did not complete all the waves (Bolander et al., 2017; Gornbein et al., 1992). Thus, this analysis relies on 668 observations/wave. Our models account for failure severity as a control variable; this variable is significant in all the models ($ps < .05$).

Results for betrayal showed that the interaction between “repeated surveys” and “pre-failure relationship quality” was not significant ($b = .04, p = .30$). For betrayal, only the simple negative effect of repeated surveys ($b = -.35, p < .001$) was significant. Although betrayal decreases across waves, we do not find that the slope changes according to the level of pre-failure relationship quality. H3 is not supported for betrayal.

As expected, for the two other dependent variables, the interaction “repeated surveys” and “pre-failure relationship quality” was positive and significant for anger ($b = .10, p = .034$) and approaching significance for revenge ($b = .08, p = .053$). The simple effect of repeated surveys was negative and significant for both anger ($b = -.84, p < .001$) and revenge ($b = -.23, p < .001$), and the simple effect of pre-failure relationship quality did not achieve significance for any response ($ps > .10$). As predicted, the rate of decrease across waves is less pronounced for anger and revenge as the level of pre-failure relationship quality increases (see Web Appendix E for illustrations of these interactions). These results are consistent with H3.

Time role The previous analyses do not examine whether time alone can lead to a form of attenuation. We document this issue by comparing the responses after completing the first survey in the treatment condition (after two weeks at wave 1) vs. the single survey in the control condition (after two months). By keeping constant the number of surveys (only one), the differences between conditions should be mainly attributable to a “time role” factor.

A MANOVA revealed that a “time role” factor (two weeks vs. two months) has a significant overall effect (Wilk’s Lambda = .965, $F(3,293) = 3.56, p < .05$). However, specific tests reveal that this overall effect was driven by only one dependent variable out of three. Participants had a higher desire for revenge after two months ($M = 4.28$) than after two weeks ($M = 3.56, F(1,295) = 4.30, p < .05$) upon completing a single survey. This result is unexpected because it implies an

amplification effect of time for revenge. By contrast, there was no significant effect of time role for betrayal ($M_{\text{two weeks}} = 6.11$ vs. $M_{\text{two months}} = 6.13$, $F(1,295) = .005$, $p = .94$, partial $\eta^2 < .001$) and anger ($M_{\text{two weeks}} = 5.55$ vs. $M_{\text{two months}} = 5.10$, $F(1,295) = 2.37$, $p = .13$, partial $\eta^2 = .008$). Betrayal and anger responses did not differ after the first survey, regardless of whether it was administered after two weeks or two months.

Discussion of Study 1a

Supporting H1a, the results show an attenuation effect of betrayal, anger, and revenge when customers complete a series of “cognitions and emotions evoking surveys” (treatment) in comparison to only one of these surveys (control) after two months. These results support our contention that repeatedly answering such surveys can pacify customers over time. Additional analyses provide little evidence that time acted in isolation. The observed attenuation effects appear to be generated by the combined effect of time and the repeated completion of surveys inducing sensemaking.

As for H3, we show initial evidence that pre-failure relationship quality acts as a boundary condition. The attenuation rate associated with completing a series of “cognitions and emotions evoking surveys” is found to be weaker for *anger* and *revenge* as pre-failure relationship quality gains in strength. However, we did not find the expected pattern for *betrayal*.

Study 1b: Assumptions about the content of sensemaking surveys (H1b)

Context

Study 1b was again conducted with ConsumerAffairs.com, which provided a list of customers who had complained in the last two and a half months. In Study 1b, we test H1b and the assumption that the surveys must have *both cognitive and emotional content* to create an attenuation effect. To that effect, we manipulated the contents of the surveys to make them

prone, or less prone, to sensemaking. Here, our assumption is that the predicted attenuation effect will not be found when participants complete a series of surveys that evoke “only cognitions” or “only emotions.” We expect that these last two conditions generate revenge-related responses that are higher than in the treatment condition.

Experimental design, conditions, measures, and sampling

Design We randomly assigned the complainers to one of the four conditions of a single factor between-subject experimental design. The factor “survey administration” includes 1) a series of “emotions and cognitions evoking surveys” (i.e., treatment), 2) a series of “only emotions evoking surveys”, 3) a series of “only cognitions evoking surveys,” and 4) a single “cognitions and emotions evoking survey” (i.e., control). All the “multiple-survey” conditions involved four waves administered at a regular interval. Participants in the control condition only received one survey at the same time as the last wave of the “multiple-survey” conditions.

Procedure In Study 1b, we have three “multiple-survey” conditions. We followed the same procedure for these three conditions as in Study 1a. In wave 1, the complainers received a web link by email to enroll them in the study. They were informed that the study included four waves, and a multi-contact approach was used for each wave. The key difference between Study 1a and Study 1b is the interval between waves being one week. We used the same procedure for the control group as in Study 1a.

Manipulations The surveys of the treatment condition were identical to those in Study 1a (see Web Appendix A). As previously explained, this condition is the most conducive to sensemaking. Likewise, the control condition was identical to that in Study 1a. The participants completed a single survey at the end of the period.

The novelty of Study 1b relates to the addition of two conditions involving surveys with only cognitions or only emotions. In the condition with a series of “only emotions evoking surveys,” questions in the middle section related to complainers’ current feelings, such as anger, rage, sadness, regret, etc. In the condition with a series of “only cognitions evoking surveys,” the middle section covered only cognitions, such as justice, blame, attributions, etc. Participants assigned to these conditions completed these questionnaires at waves 1-3. At wave 4, the participants answered the same survey as in the control group so that we could collect our dependent variables. These two conditions should not induce sensemaking.

We checked that the manipulations of the content of the surveys were successful (see Web Appendix F for checks). In addition, we made sure that each condition had a similar number of items. As a result, the completion time was similar for each condition. There was no significant difference in completion time among the three “multiple-survey” conditions for each wave ($p > .30$). For these conditions, completion time was 20.5 minutes for wave 1, 17.8 minutes for wave 2, and 16.6 minutes for wave 3. For the survey at wave 4, average completion time was 19.2 minutes, with no significant difference among the four conditions ($p = .18$).

Measures We used the same measures for the dependent variables as in Study 1a, and also added two established scales measuring desires for avoidance and reconciliation (see Appendix for scales, and Web Appendix C for psychometric properties). The scale for avoidance includes five items, such as “I want to keep as much distance as possible between the service firm and me” (Grégoire et al., 2009). Similarly, the scale of reconciliation includes five items, such as “I want to give the firm back a new start, a renewed relationship.” To capture a lack of reconciliation, this last scale was reversed coded. See correlation matrices in Web Appendix B.

Sampling The initial sampling frame consisted of 9,620 complainers randomly assigned to one of the four conditions (i.e., 2,405 per condition). After the first wave, 334 out of 7,215 participants completed the surveys in the three “multiple-survey” conditions, for an overall response rate of 4.6% in wave 1. The number of participants declined to 130 in wave 2, to 99 in wave 3, and to 80 in wave 4, for a final response rate of 1.1%. In the control group, 124 out of 2,405 participants completed the survey, for a 5.2% response rate. Overall, we had 204 participants to conduct our analyses at wave 4. The double deviations reported by participants occurred in the retail industry (19.6%), automotive (11.8%), appliances (11.8%), and telecommunication providers (11.3%), followed by websites and online services (5.4%), financial services (2.9%), computers (1.5%), and other industries (19.6%). We took extensive measures to ensure that self-selection was not an issue (see Web Appendix D).

Results

Overall results We conducted a one-way MANOVA with “survey administration” as a between-subjects factor including the four conditions: 1) a series of “emotions and cognitions evoking surveys” (i.e., treatment), 2) a series of “only emotions evoking surveys”, 3) a series of “only cognitions evoking surveys,” and 4) a single “cognitions and emotions evoking survey” at the end (i.e., control). We used the five dependent variables measured at wave 4. See Table 2 for an overview of our results. Earlier models included five control variables. Only failure severity was retained ($p < .001$); the others were dropped (i.e., age, gender, receiving a resolution, giving up complaining) because of lack of significance ($ps > .28$).

----- Insert Table 2 -----

The factor “survey administration” had a significant impact (Wilk’s Lambda = .864, $F(15, 539) = 1.953$, $p = .017$) on the five dependent variables. This omnibus test indicates that the

means of the five dependent variables are generally different across conditions (see Table 2). We follow up this significant MANOVA with a series of planned contrasts, an approach regularly used in marketing (e.g., Henderson et al., 2024; Lu et al., 2024). In virtue of our theorization, we expect that the treatment condition generates lower revenge-related responses compared to the control group (as per H1a) and compared to the conditions involving “only cognitions” and “only emotions” (as per H1b). Accordingly, we give each condition a set of weights that reflects these planned comparisons, that is, the coefficient 1 for the treatment condition compared to -.33 for the three other conditions. See Table 2 for the results of each planned contrast.

Here, H1a and H1b are collectively supported if the contrast value is negative and significant. We expect a negative value because the treatment condition should trigger lower revenge-related responses compared to the combination of the three other conditions. Consistent with this prediction, the contrast value is negative and marginally significant for betrayal (contrast = $-.72$, $p = .070$), and negative and significant for all other variables: anger (contrast = -1.17 , $p = .004$), revenge (contrast = $-.92$, $p = .026$), avoidance (contrast = $-.92$, $p = .019$), and lack of reconciliation (contrast = $-.66$, $p = .035$).

Content of surveys (H1b) We test H1b by changing the weight of the contrast (i.e., 1 for the treatment vs. $-.5$ for the conditions “only emotions” and “only cognitions”). We find similar results as those previously reported. All contrast values are negative; this value is marginally significant for betrayal (contrast = $-.85$, $p = .055$) and significant for all other variables: anger (contrast = -1.23 , $p = .006$), revenge (contrast = -1.33 , $p = .004$), avoidance (contrast = -1.08 , $p = .012$), and lack of reconciliation (contrast = $-.86$, $p = .013$). H1b is supported.

Attenuation (H1a) We use a similar approach for H1a (i.e., 1 for treatment vs. -1 for control). Although all contrast values are negative, only two are significant—anger (contrast = -1.19 , $p =$

.003) and avoidance (contrast = $-.76$, $p = .050$); one is marginally significant—betrayal (contrast = $-.65$, $p = .098$); and two are not significant—revenge (contrast = $-.22$, $p = .59$) and lack of reconciliation (contrast = $-.45$, $p = .145$). Study 1b partially supports H1a.

Time role As in Study 1a, we also test the effect of a time role by comparing the five revenge-related responses after the first survey in the treatment condition (one week at wave 1) with the single survey of the control group (after four weeks). Consistent with Study 1a, a MANOVA revealed that the between-subjects factor “time role” (one week vs. four weeks) was not significant (Wilk’s Lambda = $.966$, $F(5,224) = 1.57$, $p = .17$) in Study 1b. In sum, there is no evidence that either of the five revenge-related responses differed after the first survey, regardless of whether it was administered after one or four weeks.

Discussion of Study 1b

In Study 1b, we verify that surveys need to include both cognitions and emotions to be conducive to sensemaking. We check this assumption by showing that surveys evoking only cognitions or only emotions are ineffective at generating the proposed attenuation effects. By using planned contrasts for H1b, we find that the treatment condition generates lower revenge-related responses than those in these latter two conditions.

By using another set of contrasts, we find only partial support for H1a in Study 1b, compared to Study 1a. We find a significant difference between the treatment condition and the control group for two variables (anger and avoidance) and a marginally significant effect for betrayal. Although the means are in the expected directions, the other two contrasts (revenge and lack of reconciliation) do not reach significance. We also note the absence of evidence for the attenuation effect of time alone in Study 1b, in line with Study 1a.

In Study 1b, the weak support for H1a can be explained in two ways. First, it is possible that an interval of one week is not sufficient to allow customers to fully make sense of a double deviation. Second, the response rates were lower in Study 1b compared to Study 1a, which resulted in smaller sample sizes. Thus, we may have encountered a problem of statistical power in Study 1b. To address these issues, H1a is retested in Studies 2 and 3 by using intervals of two weeks and by relying on larger sample sizes.

Study 2: Mediation through perceived sensemaking (H1a, H2a and H3)

Context

Unlike the previous field studies, Study 2 is conducted in a controlled experimental setting, which limits self-selection and attrition issues. Here, we replicate the basic attenuation effect (H1a) and the moderation effect of pre-failure relationship quality (H3) in a controlled setting. Study 2 also examines whether perceived sensemaking is a key mediator explaining the attenuation effect (H2a). Finally, Study 2 enables an important robustness check. In Studies 1a and 1b, the surveys were not directly sent by the firm at fault. Study 2 examines whether attenuation can be achieved when consumers believe the surveys are sent by the focal firm.

Experimental design, conditions, measures, and sampling

Design Participants were randomly assigned across six experimental conditions in a two (survey administration: treatment vs. control) by three (sender type: third-party organization, firm vs. not specified) between-subjects design in exchange for a financial compensation. In all the conditions, participants responded to questions related to a recent double deviation defined as a “situation in which a service firm failed to serve you adequately, and when you complained, failed to redress the situation to your entire satisfaction.”

Procedure In the treatment (i.e., a series of “cognitions and emotions evoking surveys”) conditions, participants completed three surveys that were administered every two weeks over a period of five weeks (McCullough et al., 2003).³ Participants in the control groups (a single “cognitions and emotions evoking survey”) answered one survey that was administered after five weeks, at the same time as the last wave of the treatment conditions.

Manipulations The treatment conditions and control groups were identical to those in Study 1a. Regarding the “sender type” manipulation, the only difference among the three conditions was whether participants believed that they filled out the survey for ConsumerAffairs.com (“third-party”), the focal firm responsible for the failure (“firm”), or a condition in which we did not provide information about the sender (“not specified”). A post-test showed that the manipulation of the “survey sender” was successful (detailed results and explanations are provided in Web Appendix G).

Measures We used the same measures as in Study 1b. We added two newly developed scales measuring perceived sensemaking and emotional venting at the end of each survey. The former scale captures the process at play, and the latter tests an alternative mechanism. Overall, all the scales exhibit adequate psychometric properties (see Web Appendix C).

We developed new scales for perceived sensemaking and emotional venting that fit the context of the current study (see Web Appendix H for details). We initially assembled a pool of items based on a review of the existing literature before conducting exploratory and confirmatory analyses for each scale on separate samples. Ultimately, we obtained a scale with six items for perceived sensemaking and five items for emotional venting, which were all measured with a

³ The total duration period is calculated differently in Study 2. We recruited participants in small batches during the first week. Once participants were recruited, they were assigned to one of the six conditions. Participants in the treatment conditions completed a first survey immediately after their recruitment (week 1). Then, they completed two additional surveys at intervals of two weeks each (i.e., week 3 and week 5).

seven-point Likert scale. For both scales, participants read the statement: “At the current moment, I think answering these questions helps me to...”. Then, for the sensemaking scale, they indicated their degree of agreement with items such as “... make sense of what happened.” For the emotional venting scale, the five items included “... vent my negative emotions about this service failure” (see Appendix for items).

Sampling We initially recruited 463 participants from Amazon’s Mechanical Turk who had experienced a double deviation within the last four months (the average period was two months). These individuals were randomly assigned to one of the six conditions.

In the three treatment conditions, the number of participants was 285 at wave 1, 193 at wave 2, and 147 at wave 3. In the three control groups, the number of participants was 137 (wave 3). In total, there were 308 participants in wave 3, of whom 24 were eliminated because they either repeatedly failed the instructional manipulation check (e.g., Oppenheimer et al., 2009), failed to follow the experimental instructions, or took part in the study twice, leading to a final sample of 284 participants. This approach resulted in an exclusion rate of about 8%, which aligns with the benchmark prevalent in behavioral research (Chandler et al., 2014).

Overall, 55% were female and the average age was 32.8 years. The industry representation was similar to Studies 1a and 1b (retail: 46.7%; cell phone providers: 22.7%; automotive: 9.1%; websites and online services: 8.4%; financial services: 5.9%; appliances: 3.5%; and others: 3.9%). Finally, we ensured that self-selection was not an issue (see Web Appendix D).

Results

Attenuation (H1a) We used the same analyses as in Study 1a. A MANOVA showed that the “survey administration” factor was significant (Wilk’s Lambda = .946, $F(3,277) = 5.30$, $p = .001$), and failure severity was the only significant control variable ($p < .002$). However, neither

the “sender type” factor ($p = .628$) nor the interaction of “sender type” with “survey administration” ($p = .895$) was significant. These results support the attenuation effect (H1a), which is unaffected by sender type. Because it is not significant, we dropped sender type from our analyses (see Figure 3).

----- Insert Figure 3 about Here -----

Compared to participants in the control group, those in the treatment condition experienced after five weeks less betrayal ($M_{\text{treatment}} = 4.24 < M_{\text{control}} = 4.78, p = .003$), anger ($M_{\text{treatment}} = 3.66 < M_{\text{control}} = 4.42, p < .001$), revenge ($M_{\text{treatment}} = 2.62 < M_{\text{control}} = 3.27, p < .001$), avoidance ($M_{\text{treatment}} = 4.03 < M_{\text{control}} = 4.64, p = .003$), and lack of reconciliation ($M_{\text{treatment}} = 4.50 < M_{\text{control}} = 4.87, p = .045$). These results support H1a. As expected, perceived sensemaking is greater in the treatment condition ($M = 4.36$) than in the control group ($M = 3.84, p = .007$).

Mediation (H2a) To test H2a, we estimated five PROCESS models (model 4, Hayes, 2017) in which we tested the following sequence: survey administration – perceived sensemaking – dependent variables. The survey administration variable contains two categories, treatment vs. control group, coded as 1 and 0, respectively. The variable sensemaking and the dependent variables were measured at wave 3. All the PROCESS models control for failure severity ($.62 < ps < .001$); they are estimated with 10,000 bootstrap samples.

Overall, our results showed that the treatment condition, compared to the control group, had a significant and positive impact on perceived sensemaking ($b = .26, p = .03$). In turn, the effect of sensemaking was negative and significant on the five dependent variables (betrayal: $b = -.19, p = .005$; anger: $b = -.22, p = .020$; revenge: $b = -.19, p = .006$; avoidance: $b = -.23, p = .003$; lack of reconciliation: $b = -.31, p < .001$). Hence, answering a series of “cognitions and emotions evoking surveys” (treatment) had significant negative indirect effects through perceived

sensemaking in each of the five models, which involve, respectively, betrayal (effect = $-.05$, 95% CI $[-.11; -.01]$), anger (effect = $-.06$, 95% CI $[-.13; -.01]$), revenge (effect = $-.05$, 95% CI $[-.12; -.01]$), avoidance (effect = $-.06$, 95% CI $[-.13; -.01]$), and lack of reconciliation (effect = $-.08$, 95% CI $[-.16; -.02]$). H2a is supported.

Alternatively, when perceived sensemaking was replaced by emotional venting as a mediator, the indirect effects were not significant for any of the dependent variables (narrowest 95% CI $[-.03; .01]$), ruling out this variable as an alternative mechanism.

Moderation (H3) Consistent with Study 1a, we conducted a series of mixed models in which we examined the interaction effect between “pre-failure relationship quality” and “repeated surveys.” In all the models, we controlled for failure severity for 625 observations/wave. In sum, our results provide support for H3. The interaction between repeated surveys and pre-failure relationship quality⁴ was *positive* and significant in the models for betrayal ($b = .14$, $p = .003$), anger ($b = .10$, $p = .034$), revenge ($b = .16$, $p < .001$), and avoidance ($b = .10$, $p < .001$), while it was close to significance for lack of reconciliation ($b = .08$, $p = .054$). As pre-failure relationship quality increases, the rate of decrease across waves for the dependent variables becomes less pronounced (see Web Appendix E for figures).

Time role We replicated the same analyses about the “time role” factor as in Studies 1a and 1b on the five revenge-related responses. A MANOVA revealed that the “time role” factor was not significant (Wilk’s Lambda = $.987$, $F(5,421) = .98$, $p = .36$) in Study 2. In sum, none of the five

⁴ The simple effect of repeated surveys was negative and significant for betrayal ($b = -.55$, $p < .001$), anger ($b = -.63$, $p < .001$), revenge ($b = -.71$, $p < .001$), avoidance ($b = -.43$, $p = .001$), and lack of reconciliation ($b = -.30$, $p = .030$), as expected. This variable had a positive effect on sensemaking ($b = .57$, $p < .001$). The simple effect of pre-failure relationship quality was also negative and significant for betrayal ($b = -.94$, $p < .001$), anger ($b = -.80$, $p < .001$), revenge ($b = -.75$, $p < .001$), avoidance ($b = -1.17$, $p < .001$), and lack of reconciliation ($b = -.92$, $p < .001$). In turn, this same variable had a positive effect on sensemaking ($b = .42$, $p < .001$).

revenge-related responses differed after the first survey, regardless of whether it was administered after one or five weeks.

Discussion of Study 2

Study 2 reconfirms the presence of an attenuation caused by completing a series of “cognitions and emotions evoking surveys” on revenge-related responses after a double deviation. H1a is supported using only three waves in a more controlled setting. Importantly, the attenuation effect is robust regardless of the type of sender (i.e., third-party, focal firm, or unspecified source). Again, no evidence for the attenuation effect of time alone is found.

Study 2 shows the mediating role played by perceived sensemaking in enabling the attenuation effect for all revenge-related responses. The sequences “completing a series of surveys → perceived sensemaking → all revenge-related responses” were supported, confirming H2a. We also ruled out “emotional venting” as a mediator.

Finally, Study 2 replicates H3 about the moderation effect of pre-failure relationship quality. The proposed attenuation effect becomes less pronounced for each dependent variable as the level of pre-failure relationship quality increases.

Study 3: Testing a serial mediation (H1a and H2b)

Context

Study 3 accomplishes three objectives in a controlled experimental setting. First, we enhance internal validity by including a cleaner baseline control condition that does not include scale items (i.e., a “no survey” control group in which participants are not asked to answer the usual constructs included so far but instead have the options to write a negative review and to leave a complaint). By using this approach, we further demonstrate the focal attenuation effect by using only reported retaliatory behaviors. Second, we examine the serial mediation involving perceived

sensemaking and benevolent trusting beliefs (H2b). Third, we rule out several alternative explanations, such as reactance, attitude accessibility, as well as surprise, appropriateness, and uneasiness in reactions to receiving surveys.

Experimental design, conditions, measures, and sampling

Design Participants were randomly assigned to one of the three conditions of a single factor between-subject experimental design (survey administration: treatment, control, and “no-survey” control). In Study 3, the treatment and control conditions are the same as in Study 2. The only difference is the addition of a second control condition (“no-survey”), which briefly measures some behaviors without surveying any of the perceptual cognitions and emotions.

Procedure The procedures are identical to those in Study 2 for the treatment condition and the control group. In addition, the new “*no-survey*” control group was administered at the same time as the usual control group (i.e., at wave 3, after five weeks).

Manipulations Again, the treatment condition and control group were identical to those in Study 2. The “no survey” condition is designed not to involve any sensemaking features because it does not include any of the usual perceptual scales.

Measures We used the same measures as in Study 2 (see Appendix and Web Appendix C) for the treatment condition and the control group. The only additions for these two conditions were a new measure of benevolent trusting beliefs (Schlosser et al., 2006) and measures of the constructs tested as alternative explanations (see definitions and references in Web Appendix I).

The “no survey” control condition included two behavioral measures in addition to demographic variables. The first question asked respondents to write a negative review about their double deviation, and the second asked them to leave a complaint with the firm. These

measures were also included in the treatment condition at wave 3 for comparison, but they were not included in the usual control group.

Sampling We recruited 318 participants (48% female; $M_{\text{age}} = 38.4$ years) from Amazon's Mechanical Turk. All these participants had experienced a double deviation within the last four months (the average period was two months). In the treatment condition, the number of participants was 232 at wave 1, 168 at wave 2, and 128 at wave 3. In turn, 96 participants answered the usual control group at wave 3, and 94 completed the no-survey control group at wave 3. The represented industries were similar to those in the previous studies: retail: 44.2%; cell phone providers: 27.1%; automotive: 8.8%; websites and online services: 7.9%; financial services: 2.7%; computers: 2.7%; appliances: 1.5%; and others: 4.9%.

Results

Attenuation (H1a) Consistent with Study 2, a MANOVA showed that the “survey administration” factor was significant (Wilk's Lambda = .842, $F(5,211) = 7.94$, $p < .001$). Three control variables achieved significance: severity ($p < .001$), receiving a satisfactory resolution ($p < .001$), and gender ($p = .002$). Compared to participants in the control group, those in the treatment condition experienced, after five weeks, less betrayal ($M_{\text{treatment}} = 4.18 < M_{\text{control}} = 4.76$, $p = .015$), anger ($M_{\text{treatment}} = 3.43 < M_{\text{control}} = 4.18$, $p < .001$), revenge ($M_{\text{treatment}} = 2.85 < M_{\text{control}} = 3.34$, $p = .022$), and lack of reconciliation ($M_{\text{treatment}} = 4.15 < M_{\text{control}} = 5.01$, $p < .001$). The effect on avoidance was not significant ($M_{\text{treatment}} = 3.98 \approx M_{\text{control}} = 4.18$, $p = .681$). As expected, perceived sensemaking was greater in the treatment condition ($M = 4.40$) compared to the control group ($M = 3.74$, $p = .004$). H1a is generally supported (see Table 3).

No-survey control To further demonstrate the attenuation effect, we compared the retaliatory behaviors reported in the treatment condition with those in the “no-survey” control group. We

estimated separate logistic regression models for the two behavioral measures, which take the value of 1 when customers engage in the behavior (see Table 3). A first analysis showed that demographics do not affect the behavioral measures ($p_s > .104$); thus, the main analyses included only the “survey administration” factor as the independent variable. Customers were less likely, after five weeks, to write a negative review in the treatment condition (25.8% of the participants) than in the no-survey condition (41.3%; $b = -.71, p = .016$). Likewise, customers were less likely, after five weeks, to leave a complaint in the treatment condition (34.4%) than in the no-survey condition (48.9%; $b = -.60, p = .031$). These results are consistent with H1a.

----- Insert Table 3 about Here -----

Serial mediation (H2b) For H2b, we estimated five PROCESS models (model 6) to test the serial mediation by perceived sensemaking and benevolent trusting beliefs.⁵ The treatment condition (versus the control group) increases perceived sensemaking ($b = .33, p = .001$), which has a positive influence on benevolent trusting beliefs ($b = .59, p < .001$), which in turn lowers betrayal ($b = -.22, p = .02$), avoidance ($b = -.21, p = .03$), and lack of reconciliation ($b = -.68, p < .001$). Consequently, the indirect negative serial effect is significant for the models of betrayal (effect = $-.04$, 95% CI $[-.10; -.01]$), avoidance (effect = $-.04$, 95% CI $[-.10; -.01]$), and lack of reconciliation (effect = $-.13$, 95% CI $[-.22; -.05]$). It should be noted that this indirect effect is not significant for the models with anger (effect: $.01$, 95% CI $[-.03; .05]$) and revenge (effect: $.03$, 95% CI $[-.01; .09]$). H2b is supported in three cases out of five.

⁵ Before conducting the serial mediation analyses, we made sure that linking the two mediators—rather than considering them as separate, parallel, mediators—was appropriate. Consistent with our conceptualization, we first noted that the two mediators are significantly correlated ($r = .56, p < .001$). Second, we conducted a path analysis by using covariance-based structural equation modelling. In the first path analysis, the survey administration factor led to perceived sensemaking and benevolent trusting beliefs, which were unrelated, while two mediators led to the five outcomes of interest. A second identical model was estimated, except that a path was added between the two mediators. The latter model presents a much better fit with the data than the former—that is, the chi-square is significantly lower with the addition of the path between the two mediators ($\Delta\chi^2 = 71.8, p < .001$).

We also note that the indirect effect through trusting beliefs only is significant for betrayal (effect: -.06, 95% CI [-.14; -.01]), avoidance (effect: -.06, 95% CI [-.14; -.01]), and lack of reconciliation (effects: -.18, 95% CI [-.31; -.06]). The direct effect is not significant for any of these three revenge-related responses ($ps > .14$). Hence, in these three cases, the treatment condition exerts its impact through indirect effects only that comprise a serial mediation of perceived sensemaking and trusting beliefs, and a simple mediation through trusting beliefs.

Alternative mechanisms To further confirm the mediation role of sensemaking and benevolent trusting beliefs, we examined the role of alternative mediators by estimating a series of PROCESS models for each of the five dependent variables. Detailed results are provided in Web Appendix I. None of the alternative mediators (i.e., emotional venting, reactance, uneasiness, appropriateness, surprise, persuasion knowledge, and attitude accessibility) produced significant indirect effects for any revenge-related responses (narrowest 95% CI [-.03; .02]), effectively ruling them out as alternative explanations.

Time role A MANOVA revealed that the “time role” factor was significant (Wilk’s Lambda = .945, $F(5,310) = 3.63$, $p = .003$).⁶ However, this result was driven by the amplification of the lack of reconciliation over time ($M_{\text{five weeks}} = 5.07 > M_{\text{one week}} = 4.23$, $p < .001$), while none of the effects for the other revenge-related responses were significant ($ps > .42$). In sum, four revenge-related responses (out of five) did not differ after the first survey, regardless of whether it was administered after one or five weeks.

Discussion of Study 3

⁶ The role of time was tested by comparing the treatment group with the usual control, which is consistent with the tests performed in the previous studies. Although Study 3 features a no-survey control, this condition did not include measurement scales; thus, it could not be used to test for the role of time in attenuating revenge-related responses.

Study 3 again replicates the basic attenuation effect predicted in H1a; there is also a lack of evidence for the attenuation effect of time alone as in the previous studies. In addition, Study 3 further tests the robustness of the attenuation effect by using a control condition which asks only behavioral questions. This new control condition does not include any of the survey aspects used in Studies 1 and 2. Consistent with H1a, we find that customers completing multiple “cognitions and emotions evoking surveys” are less likely to write a negative review or to complain to the firm, in comparison to the “no-survey” control condition.

We further refined our understanding of the process by confirming the presence of a second serial mediator: benevolent trusting beliefs (H2b). Through mediation analyses, we show that the serial mediation “sensemaking → benevolent trusting beliefs” explains the proposed attenuation effect for three outcomes out of five. Furthermore, given the significant simple mediations through trusting beliefs, attenuation is entirely driven by indirect effects. However, this double mediation process is not significant in the models involving anger and revenge in Study 3. We elaborate next on these results.

General discussion

Utilizing four longitudinal experiments—collectively entailing 35 waves of surveys—this research uncovers an attenuation effect of answering a series of “cognitions and emotions evoking surveys” over time (i.e., the treatment in all studies) on revenge-related responses after double deviations. The superiority of this approach has been established through a comparison with three alternatives: 1) a single “cognitions and emotions evoking survey” (i.e., the control group in all studies), 2) a series of surveys evoking “only cognitions” or “only emotions” (in Study 1b), and 3) a “no survey” control group (Study 3). The focal effect persists irrespective of many survey administration attributes, such as the sender, interval among waves, number of

surveys, and timeframe, to name a few. Furthermore, this effect is contingent on pre-failure relationship quality (H3). We also found that perceived sensemaking (H2a) and benevolent trusting beliefs (H2b) serially mediate the attenuation effect while ruling out rival explanations.

Theoretical contributions

Even though extant work argues that time exhibits a naturally reducing impact on customers' revenge responses, it overlooks the potential confounded or combined influences of time with the completion of multiple surveys inducing sensemaking (Grégoire et al., 2009, 2018; McCullough et al., 2003, 2007). To this end, our four studies include a control condition that allows estimating the attenuation effect associated with the completion of a *series* of sensemaking surveys for a given lapse of time. Accordingly, one of our contributions involves highlighting the robust existence of an enhanced attenuation effect of revenge-related responses, which is attributed to the completion of multiple sensemaking surveys over time.

Our results suggest that time has a greater “healing effect” when customers are prompted to make sense of their negative experience through proper activities (e.g., surveys). Building on work in psychology (e.g., Barclay & Skarlicki, 2009), we argue that such prompts could take different forms, such as self-expressive writing, therapies, self-administered exercises, or personal diaries. In sum, the current research suggests that time is not the only factor that contributes to the creation of a healing effect. Passing time needs to be associated with repeated sensemaking exercises to have a strong, durable healing effect that would reduce revenge and stimulate forgiveness. Fortunately, our research shows that such a sensemaking process can be induced by administering “cognitions and emotions evoking surveys” at a regular interval.

Relatedly, our results provide information about the content of effective sensemaking surveys or prompts in general. We observe the hypothesized attenuation with surveys of different

length, varying between 70 and 170 items, taking between 7 and 23 minutes. Although we suggest that the instrument should be comprehensive, it does not have to be very long if it maps well onto the responses of customers facing highly negative experiences, such as a double deviation or other forms of transgressions (Khamitov et al., 2020). Surveys or other prompts need to make customers reflect about the whole situation by following the logical steps of an appraisal-based process (i.e., “cognition – affect – behavior”). According to our context, such cognitions could refer to relationship quality, fairness, and blame, whereas such emotions could include anger, rage, or dissatisfaction. These instruments could also relate to cognitions having an affective connotation (e.g., betrayal, rumination), motivations being composed of both affective and behavioral components (e.g., revenge), or emotionally charged behaviors (e.g., complaining, aggression). We are reluctant to suggest a specific set of constructs to include in the instruments. We rather propose that researchers build instruments that cover, comprehensively and reasonably, the broad cognitions and emotions associated with the difficult situations of interest. In the end, we invite additional research on this matter.

Another related contribution lies in establishing that sensemaking represents a core process explaining the attenuation effect of interest (Beverland et al., 2024). In this research, we find that sensemaking is facilitated by answering a series of prompts evoking both cognitions and emotions, compared to instruments referring to only emotions or only cognitions (see H1b, Study 1b). More importantly, we measure sensemaking (in Studies 2 and 3) and show its mediating role. Specifically, we show evidence that filling out multiple sensemaking surveys helps aggrieved customers reconsider the episode, thereby elevating their perceptions of benevolent trusting beliefs about the focal firm (Schlosser et al., 2006). To the best of our knowledge, the current research is the first to consider sensemaking as an important process variable in services.

Furthermore, we contribute to this literature by underscoring the moderating influence of pre-failure relationship quality on the core attenuation effect. There is an illustrious history of research examining whether customers with a strong relationship respond less or more positively following transgressions (Khamitov et al., 2020). Substantial support exists for the notion that customers with a strong bond feel more betrayed in response to a significant transgression (e.g., double deviation) because it violates their relational norm (Harmeling et al., 2015; Grégoire et al., 2009). Consistent with this view, we suggest that sensemaking surveys minimally help such customers to apprehend their double deviations in a constructive manner. Everything considered, we extend prior work by showing that pre-failure relationship quality represents a key boundary condition that decreases the rate of the proposed attenuation effect.

The current research reinforces recent managerial work that shows the advantages of soliciting customers' feedback and sending them surveys (Bone et al., 2017; Moore et al., 2012). Past research indicates that such proactive initiatives amplify customers' intentions and behaviors in favor of the firms (e.g., increased purchase, satisfaction, and engagement). Although our research contributes to this emerging stream of work, it also differs from it in two core ways. First, we focus on the attenuation effect of strong and negative responses that customers experience after double deviations, which may lead them to complain online (e.g., Studies 1a and 1b). Second, we focus on improving customers' wellbeing and making them feel at peace with a potentially traumatic service event (Tsarenko et al., 2019).

Finally, several streams of consumer research have explored the possibility that answering a survey can alter customers' judgments or behaviors (Web Appendix J has a detailed review of this research). Accordingly, the broad positioning of our research, which relates to understanding the effects of answering surveys, is consistent with this literature. That said, we also find an

effect that is different in terms of process (i.e., sensemaking) and direction. The mere measurement, question-behavior, and self-prophecy literatures (e.g., Fitzsimons & Morwitz, 1996; Moore et al., 2012; Sprott et al., 2006) all find that answering an intent question increases the likelihood that consumers will enact a behavior consistent with that intent. Indeed, this literature proposes that the direction of questions (being positive or negative) influences future responses in the same, consistent direction (being positive or negative). In the context of a double deviation, we contribute by arguing for an effect that takes the *opposite direction* to the prediction made in this literature. The current attenuation effect posits that the repeated completions of sensemaking surveys *reduces* revenge-related responses. This prediction is different from prior “consistency” effects, which would rather suggest that asking questions about a negative experience would *amplify* subsequent negative responses. At the same time, while our core finding varies from these previous streams, we also illustrate where our study provides consistent findings with the previous streams (i.e., answering only “cognitions evoking surveys” or only “emotions evoking surveys”).

Managerial implications

The current research shows that the attenuation effect related to the completion of a series of sensemaking surveys over time is very robust. This effect remains unaffected by many factors, such as the numbers of surveys, timeframes, type of sender (firms or third-party), and intervals. This effect is also strong. In our two field studies, the effect size of completing multiple sensemaking surveys is greater than the effect size of receiving a satisfactory resolution.⁷ This last result speaks to the managerial potential of sending out sensemaking surveys, especially given that this tactic could work in conjunction with offering a compensation.

⁷Study 1a: multiple surveys omnibus test partial $\eta^2 = .195$ vs. resolution omnibus test partial $\eta^2 = .109$; Study 1b: multiple surveys omnibus test partial $\eta^2 = .058$ vs. resolution omnibus test partial $\eta^2 = .021$.

An important implication of our findings is to challenge the generally held assumption that offering a recovery is the only way to make customers feel better and to solve a problem. Challenging this view has remarkable implications for firms and third-party organizations, as it opens the door to a realm of new possibilities. Indeed, our results imply that prompting sensemaking through repeated surveys (and possibly other prompts) could be a complement to providing a resolution. The latter has represented the golden rule of service recovery for the last 30 years. The current research is among the first to uncover new forms of initiatives focusing on self-healing, so that customers can make peace with past service failures (Tsarenko et al., 2019).

Another implication is to highlight that managers cannot simply expect that time by itself will naturally remedy major conflicts and decrease revenge-related responses. We find that time becomes much more effective when combined with repeated sensemaking processes. To promote forgiveness after a double deviation, customers need to receive a recovery (i.e., the typical solution), and/or to go through an effective self-healing process. The latter solution has received limited attention, and our research proposes an inexpensive—yet powerful—technique to implement it by sending multiple sensemaking surveys. Importantly, this tool is effective even when customers are told that the sender is the firm at fault. This tool could also be used by external third-party organizations that have customers' wellbeing at heart. This last result is important because it shows the applicability of such a tactic for a wide range of organizations.

Here, we acknowledge that sending multiple sensemaking surveys is probably not feasible for all firms. This approach could be associated with low response rate and high attrition. However, by extrapolation, our results suggest that sending only one sensemaking survey could have beneficial effects in terms of increase in perceived sensemaking and benevolent trusting

beliefs, as well as in terms of reduction in revenge-related variables. In the process of designing such a survey, marketers can gain at least three clear insights from our research.

First, creating a proper survey is important because an only cognition-evoking or only emotion-evoking design may have a limited effect on customers' responses. Here, we highlight the importance of asking questions about *both* cognitions and emotions so that the survey's content can induce sensemaking. Second, marketers should show some patience with their best customers, that is, those who were perceived to have a high-quality pre-failure relationship before the double deviation. The rate of the attenuation effect is less pronounced for such individuals, but some attenuation could still occur for them by administering sensemaking surveys. Third, marketers should exercise caution regarding time intervals. Although we noticed some reductions across all studies, the reductions were more pronounced with a two-week time interval over eight weeks. Despite the powerful role of answering sensemaking surveys over time, marketers cannot easily accelerate its effect by utilizing shorter time intervals. Customers still need time to go through this "healing" sensemaking process.

Limitations and directions for future research

There are limitations that call for attention by future research. First, because we undertook longitudinal field experiments with real online complainers, we had limited control over the response rates. This is a trade-off we had to make given our interest in testing our theory in a naturalistic setting. To deal with this limitation, we conducted the more controlled Studies 2 and 3 and performed numerous checks for self-selection biases (Web Appendix D). One of the three possible sources of self-selection bias—attrition—may have been at play in Studies 1a and 1b. However, the consistency of their results with those of Studies 2 and 3—in which attrition was not problematic—suggests that our conclusions are not driven by self-selection. Future research should still re-conduct similar experiments in lab-like settings.

Second, some of the effects in Study 1b appear to be smaller. We speculate that the particularities observed in Study 1b are probably explained by the fact that we changed the time interval across survey waves. As an empirical choice, we used only a one-week interval in Study 1b, compared to a more typical two-week interval. The optimal time interval between surveys is a largely unstudied parameter in longitudinal methodology, and our results suggest it may play a role in creating an attenuation effect. For this effect to truly occur, customers need enough time between surveys to make sense of the event and develop benevolent trusting beliefs. We did not find evidence that time alone leads to an attenuation effect. This result is not necessarily inconsistent with past studies, which confounded time and the completion of surveys (Table 1). It is challenging to truly isolate the effects of time using a survey; accordingly, we suggest that future research pays special attention to this underexamined yet critical parameter. For instance, would it be possible to measure the effect of time by using non-intrusive techniques?

Third, other factors at play may be the relatively smaller sample size and the unequal cell sizes, which can decrease statistical power. These factors may also be responsible for the lack of significant effects in some studies, especially Study 1b. It should be noted that a single paper meta-analysis performed across our four studies (McShane & Böckenholt, 2017) provides strong support in favor of the attenuation effect for the five revenge-related responses (all $ps < .002$; see Web Appendix K for full explanations and results). Notwithstanding this consolidated evidence, future researchers should develop a better understanding of the effect size at play and the necessary statistical power to find significant effects in longitudinal designs.

Fourth, future work is also encouraged to investigate the notion of potentially diminishing returns. That is, there may be diminishing returns—or perhaps even undesirable effects—as a function of an increased number of sensemaking surveys that would be worth investigating

further. In this regard, investigating other sensemaking prompt tactics to achieve attenuation (e.g., immediate oral or written responses, video links, phone calls, exercises, diaries, therapies) represents another interesting avenue for future research.

Fifth, although we rule out many potential mediators (i.e., emotional venting, reactance, persuasion knowledge, attitude accessibility, as well as the feeling of surprise and appropriateness), we believe that additional mechanisms to perceived sensemaking and trusting beliefs unexplored in this research could play a role, such as a diminution in rumination and a heightened habituation in being exposed to the negative events.

Lastly, we examine only one moderator by asking participants to recall the quality of their pre-failure relationship, which could create issues related to memory bias. We encourage future researchers to examine the potential impact of other moderators, such as different types of initial failure, major initial failures where recovery is non-attemptable, and some relevant individual differences, such as religiosity (Hyodo & Bolton, 2021).

Conflict of interest

The authors declare that they have no conflict of interest.

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Table 1 Selected empirical research on unfolding of revenge and forgiveness over time

Study	Sensemaking Surveys	Domain	Sample	Control Group	Mediator	# of Surveys	Key Relevant Finding
Grégoire et al. (2009), Pilot Study	Yes (cognitive, emotional)	Marketing	Undergrads	No	No	3 surveys over 6 weeks	Different effect on revenge and avoidance over time
Grégoire et al. (2009), Study 1	Yes (cognitive, emotional)	Marketing	Online complainers	No	No	4 surveys over 8 weeks	Different effect on revenge and avoidance over time
Grégoire et al. (2018), Study 1	Yes (cognitive, emotional)	Marketing	Online complainers	No	No	4 surveys over 8 weeks	Reduction effect on revenge over time
McCullough et al. (2007), Study 1	Yes (cognitive, emotional)	Interpersonal	Undergrads	No	No	5 surveys over 8 weeks	Different effect on revenge and avoidance over time
McCullough et al. (2007), Study 2	Yes (cognitive, emotional)	Interpersonal	Undergrads	No	No	5 surveys over 8 weeks	Different effect on revenge and avoidance over time
McCullough et al. (2007), Study 3	Yes (cognitive, emotional)	Interpersonal	Undergrads	No	No	21 diaries over 3 weeks	Different effect on revenge and avoidance over time
McCullough et al. (2003), Study 1	Yes (cognitive, emotional)	Interpersonal	Undergrads	No	No	5 surveys over 4 weeks	Reduction effect on revenge, avoidance, and forgiveness over time
McCullough et al. (2003), Study 2	Yes (cognitive, emotional)	Interpersonal	Undergrads	No	No	5 surveys over 8 weeks	Reduction effect on revenge, avoidance, and forgiveness over time
McCullough et al. (2001), Study 1	Yes (cognitive, emotional)	Interpersonal	Undergrads	No	No	2 surveys over 8 weeks	Different effect on revenge and avoidance over time
Bono et al. (2008), Study 1	Yes (cognitive, emotional)	Interpersonal	Undergrads	No	No	5 surveys over 8 weeks	Different effect on revenge, avoidance, and benevolence over time
Bono et al. (2008), Study 2	Yes (cognitive, emotional)	Interpersonal	Undergrads	No	No	21 diaries over 3 weeks	Different effect on revenge, avoidance, and benevolence over time
McCullough et al. (2010), Study 1	Yes (cognitive, emotional)	Interpersonal	Undergrads	No	No	5 surveys over 4 weeks & 21 diaries over 3 weeks	Reduction effect on revenge and avoidance over time
McCullough et al. (2010), Study 2	Yes (cognitive, emotional)	Interpersonal	Undergrads	No	No	21 diaries and 1 survey over 4 months	Reduction effect on revenge and avoidance over time
Tsang et al. (2006) Study 1	Yes (cognitive, emotional)	Interpersonal	Undergrads	No	No	5 surveys over 4 weeks	Reduction effect on revenge, avoidance, and benevolence over time
The current research	Yes (cognitive, emotional)	Marketing	Online complainers (2) and MTurk panelists (2)	Yes	Yes (sensemaking & benevolent trusting beliefs)	4 studies, for a total of 35 surveys, administered over periods between 4 and 8 weeks	The completion over time of a series of surveys inducing sensemaking attenuates revenge-related responses (betrayal, anger, revenge, avoidance, lack of reconciliation). This effect is driven by a combined influence of time and answering multiple ‘sensemaking’ surveys.

Table 2 Planned contrasts between treatment condition vs. the conditions ‘only cognitions,’ ‘only emotions’ and control group (Study 1b)

	Treatment: Series of ‘Cognitions & Emotions Evoking Surveys’ (n = 27)		Series of ‘Only Cognitions Evoking Surveys’ (n = 25)		Series of ‘Only Emotions Evoking Surveys’ (n = 28)		Control: Single Survey at the End (n = 124)		Contrast (sig.)
	M	(SD)	M	(SD)	M	(SD)	M	(SD)	
Betrayal-wave 4	4.81	(1.93)	5.62	(1.68)	5.69	(1.86)	5.46	(1.84)	.070
Anger-wave 4	3.78	(1.90)	4.85	(1.99)	5.17	(2.20)	4.97	(1.78)	.004
Revenge-wave 4	3.29	(2.12)	4.55	(1.62)	4.69	(2.07)	3.50	(1.88)	.026
Avoidance-wave 4	4.63	(2.08)	5.52	(1.75)	5.91	(1.74)	5.39	(1.77)	.019
Lack of Reconciliation-wave 4	5.39	(1.82)	6.24	(1.28)	6.25	(1.13)	5.84	(1.45)	.035

Note: We use contrast tests in which the four conditions are associated with different weights. We give a coefficient of 1 to the treatment condition, and -.33 to the three other conditions (“only cognitions evoking survey”, “only emotions evoking survey” and control group).

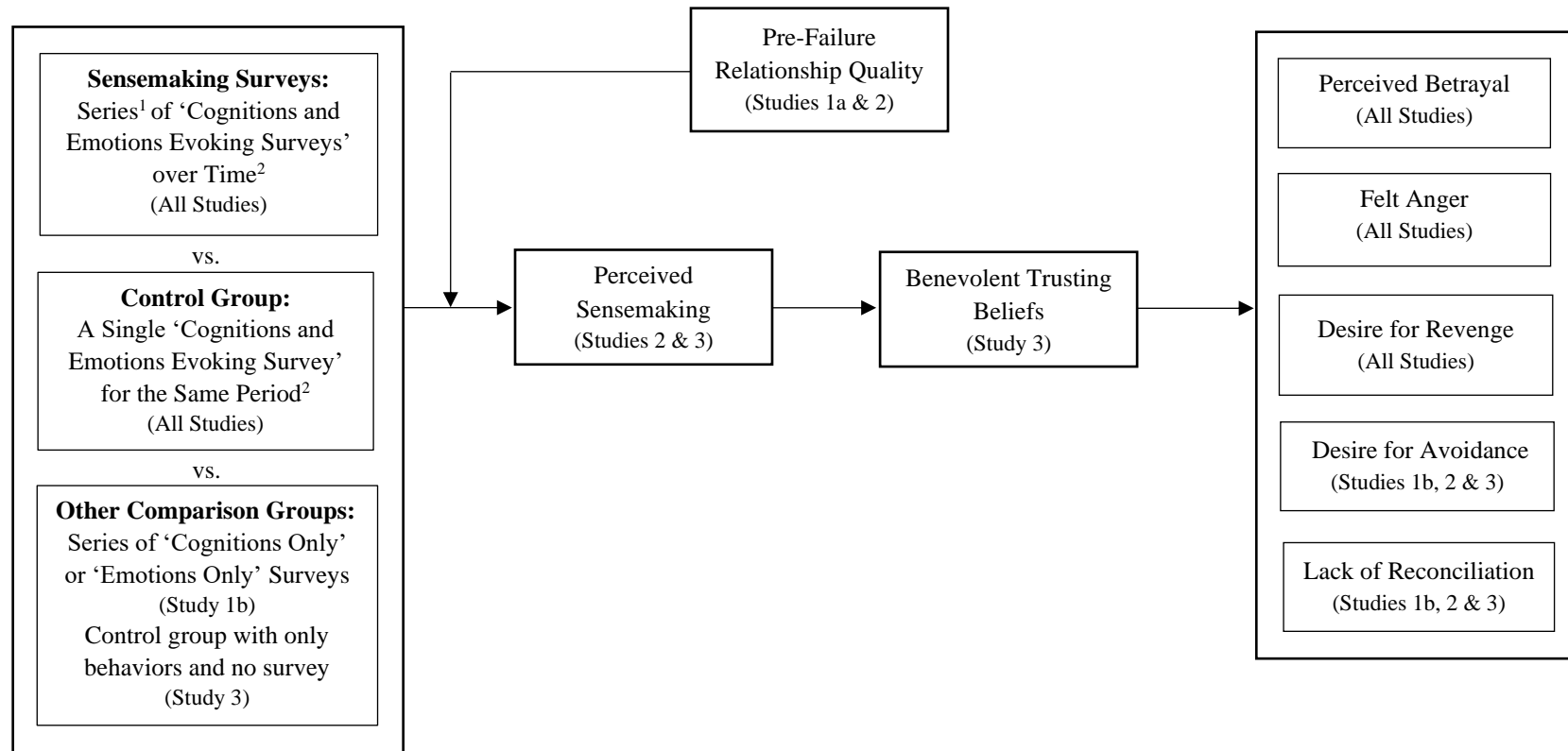
Table 3 Impact of completing a series of ‘cognitions and emotions evoking surveys’ (Study 3)

	Treatment: Series of ‘Cognitions & Emotions Evoking Surveys’						Control: Single Survey at the End		Control: No Survey, Behavior Only		Sig.
	Wave 1 (n = 232)		Wave 2 (n = 168)		Wave 3 (n = 128)		Wave 3 (n = 96)		Wave 3 (n = 94)		
	M	(SD)	M	(SD)	M	(SD)	M	(SD)	M	(SD)	
Betrayal	4.66	(1.55)	4.49	(1.45)	4.18	(1.69)	4.76	(1.93)	-	-	.015
Anger	4.16	(1.67)	3.83	(1.77)	3.43	(1.84)	4.18	(1.94)	-	-	.001
Revenge	3.39	(1.78)	3.07	(1.79)	2.85	(1.80)	3.34	(1.97)	-	-	.022
Avoidance	4.18	(1.78)	4.08	(1.84)	3.98	(1.88)	4.18	(2.09)	-	-	.681
Lack of reconciliation	4.21	(1.57)	4.26	(1.70)	4.15	(1.66)	5.01	(1.61)	-	-	.001
Perceived sensemaking	4.14	(1.40)	4.50	(1.42)	4.40	(1.38)	3.74	(1.52)	-	-	.004
Benevolent Trusting beliefs	3.56	(1.54)	3.54	(1.67)	3.75	(1.63)	2.83	(1.55)	-	-	.001
Writing a negative review (yes or no)	-	-	-	-	25.8%	-	-	-	41.3%	-	.016
Leaving a com- plaint (yes or no)	-	-	-	-	34.4%	-	-	-	48.9%	-	.031

Notes:

- The tests for the continuous variables (i.e., betrayal, anger, revenge, avoidance, lack of reconciliation, perceived sensemaking, benevolent trusting beliefs) are based on ANOVAs comparing the means at wave 3 between the treatment condition and the control group ‘Single Survey at the End’.
- The tests for the categorical variables (i.e., writing a negative review and leaving a complaint) are based on the significance of the coefficient in a logistic regression in which the treatment is compared to the control group ‘No Survey, Behavior Only’.

Figure 1 Conceptual framework



Notes:

This framework is tested with four longitudinal studies involving repeated waves of surveys. These studies have the following attributes:

¹Studies 1a and 1b contain series of four waves of surveys, whereas Studies 2 and 3 contain three waves of surveys. The surveys were administered at intervals of two weeks (Study 1a, 2 and 3) or one week (Study 1b).

²The time periods represent four weeks (Study 1b), five weeks (Studies 2 and 3), or eight weeks (Study 1a).

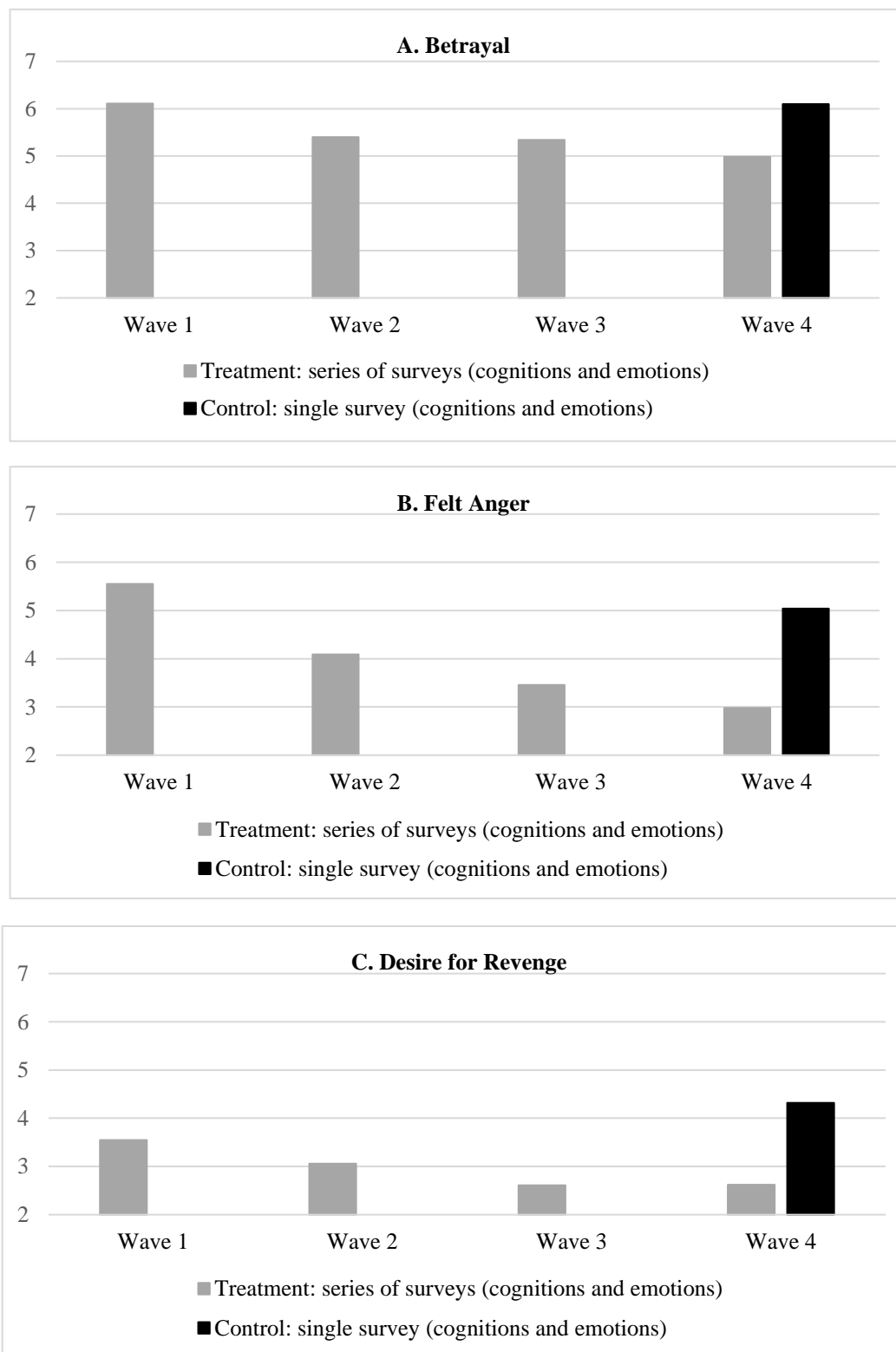
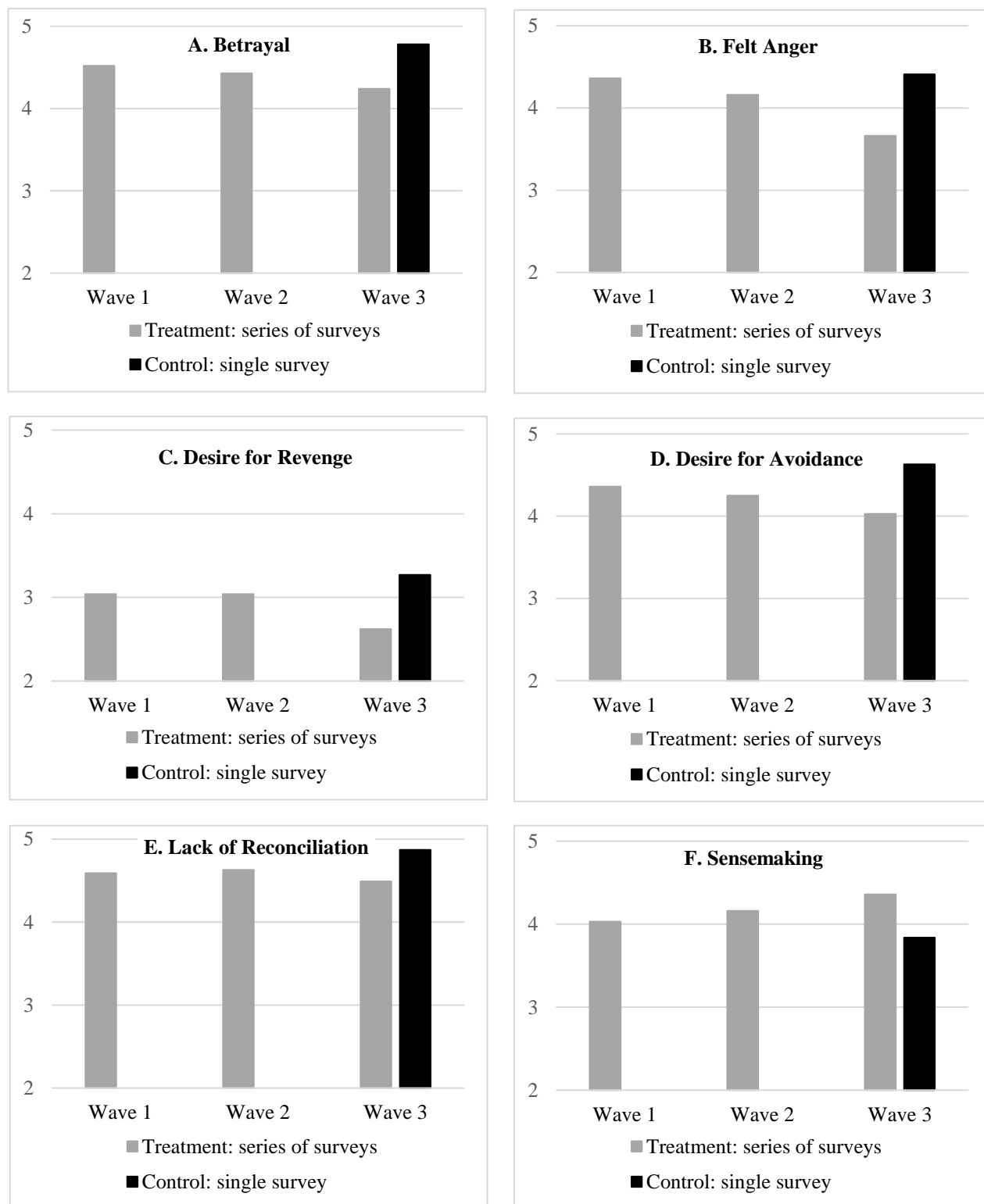
Figure 2 Impact of completing a series of ‘cognitions and emotions evoking surveys’ (Study 1a)

Figure 3 Impact of completing a series of ‘cognitions and emotions evoking surveys’ (Study 2)



Appendix: Scales items

	Study 1a	Study 1b	Study 2	Study 3
Perceived Betrayal (Grégoire et al., 2009; seven-point Likert)				
Thinking of the service failure, at the current moment, I feel...				
• ...betrayed by the firm	✓	✓	✓	✓
• ...cheated by the firm	✓	✓	✓	✓
• ...the firm broke the promise made to me	✓	✓	✓	✓
• ...my confidence in this firm was violated	✓	✓	✓	✓
• ...the firm “stabbed me in the back” in a moment of need	✓	✓	✓	✓
Felt Anger (Joireman et al., 2013; seven-point Likert)				
Thinking of the service failure at the current moment, I feel...				
• Furious.	✓	✓	✓	✓
• Outraged.	✓	✓	✓	✓
• Resentful.	✓	✓	✓	✓
• Angry.	✓	✓	✓	✓
Desire for Revenge (Aquino et al., 2006; Grégoire et al., 2009; seven-point Likert)				
Thinking of the service failure, at the current moment I want to...				
• ...take actions to get the firm in trouble.	✓	✓	✓	✓
• ...punish the firm in some way.	✓	✓	✓	✓
• ...cause inconvenience to the firm.	✓	✓	✓	✓
• ...get even with the service firm.	✓	✓	✓	✓
• ...make the service firm get what it deserved.	✓	✓	✓	✓
Desire for Avoidance (Grégoire et al., 2009; seven-point Likert scale)				
Thinking of the service failure, at the current moment I want to...				
• ...keep as much distance as possible between the firm and me.	–	✓	✓	✓
• ...live as the firm doesn’t exist, isn’t around.	–	✓	✓	✓
• ...avoid frequenting the firm.	–	✓	✓	✓
• ...cut off the relationship with the firm.	–	✓	✓	✓
• ...withdraw my business from the firm.	–	✓	✓	✓
Lack of Reconciliation (Aquino et al., 2006; Joireman et al., 2013; seven-point Likert)				
Thinking of the service failure, at the current moment I want to... (reverse-coded)				
• ...give the firm back a new start, a renewed relationship.	–	✓	✓	✓
• ...accept the humanness, flaws, and failures of the firm.	–	✓	✓	✓
• ...try to make amends toward the firm.	–	✓	✓	✓
• ...accept the firm despite what happened.	–	✓	✓	✓
• ...try to make an effort to be more friendly and concerned toward the firm.	–	✓	✓	✓
Pre-failure Relationship Quality (De Wulf et al., 2001)				
<i>Trust</i> (seven-point bipolar)				
Before the service failure, I felt that the firm was...				
• ...“Very undependable” (1)–“Very dependable” (7)	✓	–	✓	–
• ...“Very incompetent” (1)–“Very competent” (7)	✓	–	✓	–
• ...“Of low integrity” (1)–“Of high integrity” (7)	✓	–	✓	–
• ...“Very unresponsive to consumers” (1)–“Very responsive to consumers” (7)	✓	–	✓	–
<i>Commitment</i> (seven-point Likert)				
Before the service failure...				
• I was very committed to my relationship with the service firm	✓	–	✓	–
• The relationship was something I intended to maintain for a long time	✓	–	✓	–
• I put the efforts into maintaining this relationship	✓	–	✓	–

Social Benefits (seven-point Likert)

Before the service failure...

My relationship with the service firm was based on its ability to ...

• ...recognize who I am as a customer	✓	–	✓	–
• ...know my personal needs as a customer.	✓	–	✓	–
• ...build a “one-on-one” connection.	✓	–	✓	–
• ...make me feel important and appreciated.	✓	–	✓	–

Perceived Sensemaking (developed for this study; see Web Appendix H for details)

Thinking of the service failure, at the current moment, I think answering these questions helps me to...

• ... make sense of what happened.	–	–	✓	✓
• ... have a better understanding of this service failure.	–	–	✓	✓
• ... find some meaning in this negative experience.	–	–	✓	✓
• ... see this negative event in a different light.	–	–	✓	✓
• ... be better able to "coldly" analyze this event.	–	–	✓	✓
• ... consider this event with more distance.	–	–	✓	✓

Benevolent Trusting Beliefs (Schlosser et al., 2006, seven-point Likert)

Because the company sent me a survey, at the current moment, I feel that...

• ... the company seems very concerned about my welfare.	–	–	–	✓
• ... my needs and desires appear to be important to the company.	–	–	–	✓
• ... it doesn't seem that the company would knowingly do anything to hurt me.	–	–	–	✓
• ... the company seems to really look out for what is important to me.	–	–	–	✓
• ... the company appears to go out of its way to help me.	–	–	–	✓
