

Guilt Dynamics: Consequences of Temporally Separating Decisions and Actions

KRISTEN E. DUKE
ON AMIR

The current research demonstrates that temporally separating a consumer's initial decision to perform a guilt-inducing action from its actual enactment reduces the guilt felt while acting. This hypothesis follows from the development of a dynamic model that unpacks guilt into two distinct components. Initially, one experiences decision guilt accompanying the decision to act or the realization that one will act; subsequently, one experiences action guilt while engaging in the guilt-inducing behavior. Four experiments and two pilot studies reveal that **introducing a temporal "decision-enactment gap" enables decision guilt to decay in this interim period, which lowers the overall guilt experienced upon acting.** In line with the self-regulative function of guilt, decision-enactment gaps also increase indulgent consumption and decrease post-behavior atonement. This decoupling process can thus alleviate guilt that might otherwise detract from experiences, but may come at a cost to self-control efforts. The authors discuss the theoretical and practical implications of these findings.

Keywords: guilt, self-control, emotion, time, indulgence, mental accounting

Consumers perform many behaviors that can induce guilt. This unpleasant emotion may arise from splurging on an expensive product, skipping a workout, breaking one's diet, declining a request to donate, discarding a recyclable item, purchasing from a disreputable business, and

beyond. Prior research demonstrates that guilt peaks after one engages in such actions, and dissipates gradually thereafter (Macht and Dettmer 2006; Ramanathan and Williams 2007). For example, a dieting individual may feel a pang of guilt after consuming a decadent dessert, but this feeling tends to decay over time. In the current research, we advance the novel hypothesis that guilt can decay not only *after*, but also *prior to*, acting.

To arrive at this conclusion, we develop a dynamic model in which the overall guilt a consumer experiences during a behavior is a composite of two sources: decision guilt and action guilt. We define decision guilt as that associated with the decision or realization that one will commit a guilt-inducing act, and action guilt as that associated with engagement in the actual action. We posit that decision guilt decays over time. Therefore, when there is temporal separation between one's initial decision or realization and the eventual behavior, decision guilt can decay in the interim period. As a result, temporal "decision-enactment gaps" reduce the remaining amount of decision guilt—and accordingly, the overall level of guilt—consumers feel upon acting.

Kristen E. Duke (Kristen.Duke@rady.ucsd.edu) is a doctoral candidate in marketing, and On Amir (oamir@ucsd.edu) is a professor of marketing, at the Rady School of Management, University of California San Diego, 9500 Gilman Dr., La Jolla, CA 92093. Please address correspondence to Kristen Duke. This article is based on the lead author's dissertation. The authors thank Dan Ariely, Lisa Cavanaugh, Linda Hagen, Jon Jachimowicz, Minah Jung, Jonathan Levav, Alicea Lieberman, Wendy Liu, Andrea Morales, Chris Oveis, Yuval Rottenstreich, Itamar Simonson, Leaf Van Boven, Kathleen Vohs, and Katherine White for helpful comments on earlier versions of this article. The authors are also grateful to the editors, associate editor, and reviewers for their invaluable input. They also thank Jyoti Jhita, Yael Horwitz, and the Atkinson Behavioral Lab for data collection assistance. Supplementary materials are included in the web appendix accompanying the online version of this article.

Editors: Eileen Fischer and Anna Kirmani

Associate Editor: Jennifer J. Argo

Advance Access publication May 28, 2018

In addition to demonstrating the basic effect of decision-enactment gaps on how guilty consumers feel, the current research also identifies two important behavioral consequences. First, drawing on the idea that guilt prompts individuals to cease their guilt-inducing behavior (Monteith et al. 2002), and that decision-enactment gaps reduce guilt during consumption, we find that decision-enactment gaps increase indulgent consumption. Second, decision-enactment gaps also reduce atonement behaviors after the action has been performed (Tangney et al. 1996). Thus, not only can a decision-enactment gap reduce how guilty consumers feel, it can also increase how much they treat themselves and decrease how much they make up for their indulgence.

In the following sections, we review prior research relevant to the present framework and develop our hypotheses. Thereafter, we test these ideas in two pilot studies and four experiments. Finally, we conclude by addressing the theoretical and managerial implications of these findings.

GUILT AND THE ROLE OF PERSONAL RESPONSIBILITY

Guilt is an unpleasant emotion experienced in response to a negative evaluation of one's current state (Lascu 1991; Smith and Ellsworth 1985). It arises when an individual perceives that he/she has fallen short of internalized standards of appropriate, desired conduct (Baumeister, Stillwell, and Heatherton 1994). Two important features differentiate guilt from other negative emotions. First, guilt is linked to specific actions that involve actual or perceived harm—either harm to others, as when lying to a friend (Baumeister et al. 1994), or harm to the self, as when breaking a diet, buying an expensive product, or not studying enough (Dahl, Honea, and Manchanda 2003; Mukhopadhyay and Johar 2009; Tangney 1992). Unlike similar negative emotions such as shame, guilt is associated with a sharpened focus on the consequences of a specific behavior (Lewis 1971; Tracy and Robins 2004) rather than a broader, more global evaluation of the self.

Second, guilt arises from attributions of personal responsibility and self-blame (Smith and Ellsworth 1985; Tangney et al. 1996). Thus, guilt is a “self-caused” emotion resulting from a cognitive appraisal regarding one's own actions, and is similar in this respect to pride or shame (Roseman 1984). In fact, the link between guilt and personal responsibility is so strong that merely activating the emotion of guilt can enhance feelings of personal control over unrelated, uncontrollable events (Kouchaki, Oveis, and Gino 2014). Guilt is also different in this manner from other-caused emotions, such as anger, which arise following attributions about the actions of other people (Neumann 2000), and from externally caused emotions, such as fear (Roseman 1984), which arise when a focal

event is caused by circumstances outside one's control (though certainly, fear may also follow the actions of other people). In sum, what distinguishes guilt from other emotions is that it arises when individuals focus on specific behaviors for which they feel personally responsible, and which are expected to harm oneself or someone else.

To illustrate this distinction, imagine that one friend in a group chooses a restaurant at the other end of town, only to realize upon arriving that it is closed for renovations. All members of the group might feel anger, sadness, or other emotions directed at the restaurant, the situation, or the friend who made the selection. However, it is only the friend who chose that restaurant—that is, the person with personal responsibility for the harm-inducing action—who might feel guilty about having chosen it.

TWO SOURCES OF GUILT

We use the perspective that personal agency is central in rousing guilt to inform the idea that initial realizations that one will act may also be guilt-inducing, even in advance of the action. Consider an individual who consumes an unhealthy slice of cheesecake, despite being on a diet. She may feel guilty not only because of her actual consumption (e.g., the number of calories consumed and their impact on her waistline), but also for the very fact of having chosen to eat it. Said otherwise, she may feel guilty about making the initial unhealthy decision to break her diet, even before she takes the first bite. This guilt is tied to the knowledge that one will act in a guilt-inducing manner and can accordingly be experienced before acting. As mentioned previously, we term this construct *decision guilt*.

One should note that decision guilt is distinct from anticipatory guilt. The former is, as we propose, an affective experience that arises after a choice has been made to act in a guilt-inducing manner. The latter is a cognitive awareness that one will feel guilty in the future, which arises during the decision-making process and can influence how consumers choose to act (Baumeister et al. 2007; Lindsey 2005; Pelozo, White, and Shang 2013). For example, when deciding whether to buy an indulgent dessert, a consumer may consider how she might feel after eating it, forecasting her post-consumption state (Rick, Cryder, and Loewenstein 2008; see also Loewenstein et al. 2001 and Pham 2004 for broader discussions of anticipated emotions). Note that a consumer may also experience anticipated guilt after a decision has been made, if she considers how she will feel upon acting. Yet this metacognitive knowledge that guilt will arise in the future is still distinct from decision guilt, the visceral emotion experienced right when a decision has been made. Pilot study 1 demonstrates that decision guilt is indeed distinct from the anticipated guilt that can arise either prior to a decision (anticipatory

guilt) or following a decision (at the same point in time as decision guilt).

In addition to decision guilt, a second component of consumer guilt is what we term *action guilt*. Action guilt arises once an individual engages in a guilt-inducing action—for example, when he eats an unhealthy food, acts rudely to another person, throws away a gift, or splurges on a frivolous purchase (Dahl et al. 2003). Thus, it aligns with the traditional concept of guilt in consumer research, arising when consumers behave in a manner perceived to cause harm (Baumeister et al. 1994; Dahl et al. 2003).

To summarize, we propose that a consumer's overall experience of guilt associated with a given behavior can be unpacked into two components: decision guilt that arises in association with the realization that one will act, and action guilt that arises in association with the actual action. (Note, however, that the current research does not investigate the guilt that may arise after a period of rumination following the behavior; Rachman 1993.) This decomposition of guilt into two components prompts a set of novel predictions as to the dynamic nature of guilt and its corresponding impact on consumers' experiences and behaviors.

THE TEMPORAL DYNAMICS OF GUILT

Emotions are dynamic experiences that can decay over time (Ekman 1984; Gilovich, Medvec, and Kahneman 1998; Jager et al. 2014; Kahneman 1995), and guilt is no exception (Kivetz and Keinan 2006). Prior work investigating the temporal profile of guilt suggests that it peaks shortly after a behavior and decays over time thereafter (Macht and Dettmer 2006; Ramanathan and Williams 2007). Our theoretical framework predicts that decision guilt, the specific component of overall guilt that is linked to initial realizations that one will act, will also decay over time (and importantly, in the interim period between decision and action).

A variety of psychological and physiological processes likely contribute to this decay (Gilbert et al. 2004; Taylor 1991). Consumers may consciously rationalize their decisions (Dahl et al. 2003), engaging in explicit emotion regulation to reevaluate the event's underlying meaning and reduce its emotional impact (Gross 1998). This rationalization process may also operate passively and unconsciously (Gyurak, Gross, and Etkin 2011; Lieberman et al. 2001). Emotional crowding out can also play a role: a consumer who decides to buy an expensive purse and feels guilty about it may proceed to answer work-related emails, go rock climbing, listen to a podcast, and so on. The relative salience of guilt may fade, pushed aside by the more salient and vivid emotions elicited by such events (Izard 1977). Unconscious, biological adaptation and habituation processes may also work to reduce guilt over time. That is, the moderate physiological arousal response associated with

guilt (Baumeister et al. 1994; Smith and Ellsworth 1985) may organically return to homeostatic baseline (Sandvik, Diener, and Larsen 1985), attenuating this emotion. Furthermore, the salience and vividness of the memory of one's personal responsibility for the focal decision (i.e., the appraisal associated with guilt) may decay over time, and accordingly the guilt-eliciting cue may decay as well. Note that which mechanism operates most strongly is likely dependent on the context, the length of the decision-enactment gap, and the intensity of guilt. Regardless of which process is most responsible, we propose and find that decision guilt decays over time (pilot study 2). Accordingly, when time elapses between initial realizations and actual behaviors, these decision-enactment gaps should allow decision guilt to decay prior to the consumer acting. As a result, decision-enactment gaps should also reduce the overall guilt consumers experience when acting.

GUILT DYNAMICS FRAMEWORK

Figures 1 and 2 present our overall theoretical framework, with curves depicting predicted levels of guilt over time. While there are several possible shapes for such curves, for illustration purposes, they are drawn with simplifying assumptions. (The web appendix provides additional curves that depict different shapes.) First, these figures depict a case in which decision guilt and action guilt reach approximately equal peak levels, although our central predictions would also hold when decision guilt exceeds action guilt, or when action guilt exceeds decision guilt.¹

Second, we map the decay of guilt as a smooth, continuous process (analogous to that of short-term memory; Peterson and Peterson 1959). Note that our results would also hold if the decay of guilt follows a different function (e.g., a step-wise decay); the only requirement for our predictions is a decrease in the level of guilt felt over time. Finally, these figures depict decision guilt and action guilt as additive components of overall guilt. However, our results would still hold with subadditivity between these components, or with other forms of interaction. The only requirement for our analysis is that when decision guilt and action guilt are experienced in close temporal proximity, the resultant overall guilt experienced is higher than the

1 Consider that the guilt a consumer experiences while acting is "overall guilt," a composite of (decayed) decision guilt and action guilt. Even when the initial decision guilt is low, it should still decay. As a result, decision guilt after a decision-enactment gap should be lower than decision guilt absent such a gap, with the former producing lower overall guilt upon acting. That said, although mathematically our predictions would hold even when decision guilt is low and action guilt is high, the decay of decision guilt would not make a large difference, proportionally, on overall guilt in this situation. Such a difference may not be large enough to measure using traditional tools (e.g., self-report).

FIGURE 1

DYNAMICS OF GUILT WITH AND WITHOUT DECISION-ENACTMENT GAPS

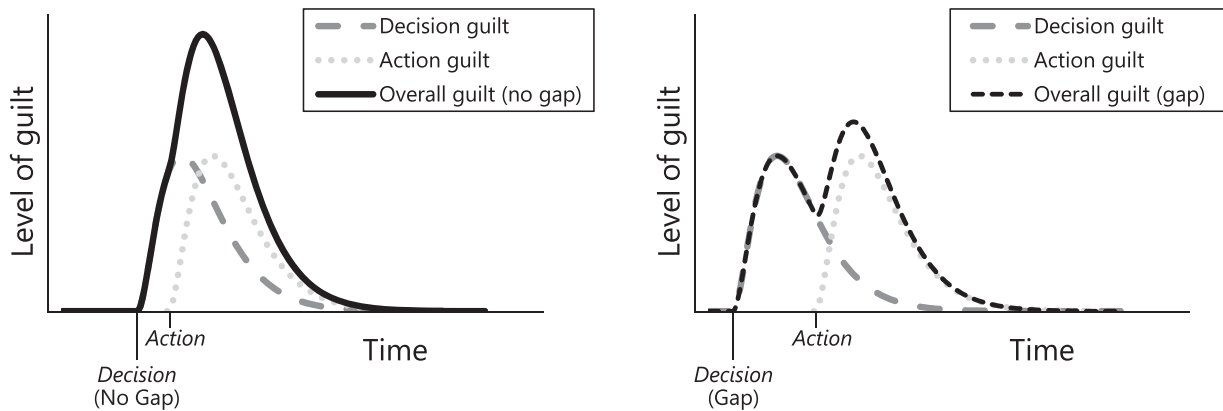
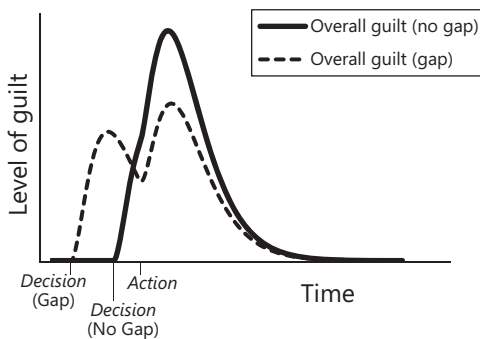


FIGURE 2

COMPARING PREDICTED OVERALL GUILT WITH AND WITHOUT A DECISION-ENACTMENT GAP



overall guilt experienced when decision guilt has had time to decay before the action begins.

The graphs in figure 1 depict two key tenets of our theory. First, the global decay of guilt over time is indicated by the downward trend in guilt as time progresses. Second, our representation of overall guilt is depicted such that the black curve in each graph is a composite of decision guilt and action guilt. Importantly, the left graph depicts a scenario in which the realization that one will act and the enactment of that action occur in close temporal proximity. Thus, in this scenario, decision guilt and action guilt are initiated at similar points in time (i.e., there is no decision-enactment gap). In contrast, the right graph depicts a scenario in which time elapses between the initial realization and the action (i.e., there is a decision-enactment gap). According to our theoretical framework, such a situation allows decision guilt to

decay prior to the action. As a result, the overall level of guilt a consumer experiences while acting should be lower than it was in the left graph, where there was no decision-enactment gap.

Next, figure 2 directly compares the overall guilt predicted to arise with and without a decision-enactment gap. As shown, our framework predicts that individuals should experience less guilt when there is a gap. Note that we investigate the level of guilt, rather than consumers' cumulative experience of guilt (the total area under the overall guilt curve), for which we make no prediction.

In summary, we propose that consumers experience a pang of guilt upon the initial realization that they will act (decision guilt). This emotional experience decays over time. Thus, when time passes between a decision and the action (i.e., a decision-enactment gap), this decision guilt can decay and contribute less emotional distress to consumers' experiences while carrying out the action, so that they will experience a lower level of guilt.

In this analysis, then, we conceptualize a process in which consumers may emotionally "prepay" their guilt by reaching a decision to act and allowing time to pass before actually acting ("paying" their decision guilt in the interim period). This process resembles a component of intertemporal mental accounting (Prelec and Loewenstein 1998; Thaler 1985). Research in that domain has shown that consumers experience a pain of payment (e.g., when paying for an expensive vacation), and so they prefer to prepay financial costs prior to the experience to prevent this pain from undermining their enjoyment (Prelec and Loewenstein 1998). A key feature of this dynamic is that consumers gradually adapt to financial costs that they have paid with the passage of time (Gourville and Soman 1998). Just as consumers adapt to financial payments, then, we posit that they also adapt to emotional costs, and that

decision-enactment gaps enable “prepayment” of these emotional costs so that consumption experiences can be enjoyed with less guilt.²

THE BEHAVIORAL CONSEQUENCES OF GUILT

The current framework has implications not only for how consumers feel, but also for how they act. Guilt affects behavior in two phases: interruption and then reparation (Amodio, Devine, and Harmon-Jones 2007). Initially, the experience of guilt encourages consumers to interrupt and cease their ongoing guilt-inducing behavior (Monteith et al. 2002). That is, experiencing guilt tends to reduce individuals' approach motivation (Amodio et al. 2007) and inhibit negative action, such as by reducing consumption of unhealthy food (Giner-Sorolla 2001).

Guilt also performs a critical function after the behavior has already occurred: promoting atonement. Particularly, guilt motivates engagement in reparative actions with the goal of amending the harm imposed (Lindsay-Hartz, De Rivera, and Mascolo 1995; Miceli and Castelfranchi 1998; Tangney et al. 1996). For example, a consumer who feels guilty for eating an indulgent meal may decide to hit the gym in an attempt to repair the damage to her health, and a consumer who feels guilty for letting down a friend might purchase a gift in hopes of repairing the relationship. Thus, after the action has been performed, guilt promotes approach motivation oriented toward repairing this harm (Amodio et al. 2007).

Drawing on these empirical foundations, we posit that decision-enactment gaps should not only reduce guilt when acting, as discussed, but also (1) diminish the interruptive function of guilt, allowing consumers to behave more freely during the experience, and (2) diminish the atonement function of guilt, reducing consumers' willingness to engage in reparations after acting.

OVERVIEW OF THE EXPERIMENTS

Two pilot studies and four experiments test our theoretical framework. Pilot study 1 provides evidence of decision guilt, establishing that consumers indeed feel guilty upon learning that they will engage in a harmful behavior—prior to the actual action. Further, it demonstrates that decision guilt is a unique emotional experience, distinct from anticipated and anticipatory guilt. Pilot study 2 then establishes that decision guilt decays over time (in the period prior to acting). The remaining experiments test for the consequences of decision-enactment gaps, and all follow the same

² Note, however, the key difference between separating two distinct actions (e.g., payment and consumption), as in the mental accounting literature, and separating a decision from its linked action, as in the current research.

FIGURE 3

GENERAL OVERVIEW OF EXPERIMENTAL TIMELINES, EXPERIMENTS 1–4

Decision-Enactment Gap (Decision and Action are Separated)



No Decision-Enactment Gap (Decision and Action are Unseparated)



general structure, which is depicted in figure 3 (specific timelines for each experiment are also presented in the web appendix). Participants make a decision (or come to a realization), complete filler tasks, perform their chosen action, and complete various focal measures. For certain participants, the filler tasks arise in between the initial decision/realization and the action, thus producing a decision-enactment gap.

Experiment 1 find that decision-enactment gaps reduce the guilt consumers experience upon acting, but not other negative emotions such as shame and regret, thus providing discriminant validity. Next, experiment 2 employs a repeated-measures design to link the results of pilot study 2 with those of experiment 1. Specifically, it identifies a relationship between the decay of decision guilt during a decision-enactment gap and the resultant lower guilt upon acting.

Following, experiment 3 draws on the behavior-interruptive function of guilt to find that decision-enactment gaps increase the amount of unhealthy food consumed. Finally, experiment 4 demonstrates that, in line with the restorative function of guilt, decision-enactment gaps reduce consumers' atonement for their guilt-inducing behavior. In all experiments, we report all manipulations and all measures. For conciseness, we include information on how we determined sample sizes and details on data exclusions (if any) for all studies, as well as additional methodological details, in the web appendix.

PILOT STUDY 1: IDENTIFYING DECISION GUILT AND DISTINGUISHING IT FROM ANTICIPATED GUILT

Pilot study 1 tests whether consumers can feel guilty upon mere realizations that they will act in a guilt-inducing manner. Participants learn that they will steal from another participant, and are led to believe that their actions played a part in this role determination. After realizing they will need to steal, but prior to the actual theft (i.e., before carrying out the guilt-inducing action), participants report how

guilty they currently feel. This post-realization value is compared to a baseline condition in which individuals report their guilt prior to the realization, to demonstrate that such a realization indeed induces (decision) guilt.

Further, this decision guilt is also compared to the guilt participants anticipate feeling upon stealing, measured at two points in time: either (a) before the realization (i.e., anticipatory guilt as defined in prior literature), or (b) after the realization, but before the theft (i.e., at the same point as decision guilt, but rather than capturing guilt felt in that moment, capturing the guilt participants *expect* to feel when they carry out the action). We propose that decision guilt is a distinct emotional experience and accordingly will differ from anticipated guilt (a cognitive awareness of one's future emotions) measured at either point in time.

Method

Overview. Two hundred forty-two undergraduates (59% female, $M_{\text{age}} = 21.2$ years, $SD_{\text{age}} = 2.2$ years) participated for partial course credit. Participants were randomly assigned to one of four conditions (baseline, anticipatory guilt, decision guilt, or post-decision anticipated guilt), between-subjects. All participants completed the same study and responded to a set of measures assessing their emotional state, but the timing of this measurement varied across conditions.

Game Introduction. At the beginning of the experiment, baseline participants read, "Before we begin, we are interested in how you feel in this moment. Right now, to what extent do you feel...guilty?" (1 = "Not at all" to 9 = "Very much"). Then, all participants learned that they would play a game and responded to an attention check (see the [web appendix](#)). Thereafter, participants chose one of two options labeled "left" or "right," which would assign them to play as either a rich or a poor player for the duration of the game. Participants were unaware which option corresponded to which wealth level. (The [web appendix](#) presents the full text presented to participants for this and all remaining game situations and choices.)

Regardless of which option they had clicked, the next page read, "You chose the left [right] option. This option assigns you to the rich wealth level. This means you will play as a rich player. You will have an advantage over other lab participants playing as poor players." On the following page, participants read that poor players would complete a challenging task, but some would get lucky and receive an "inheritance" (\$50). At the end of the week, one participant would be selected to receive any money won in this game. Rich players would either rob a poor person (and steal the inheritance, if that player had one) or donate to a poor person, which meant receiving \$25 themselves and giving an additional \$25 to a poor player. They learned

they would "choose" their game strategy in the same manner that they had "chosen" to play as poor or rich.

At this point, anticipatory guilt participants reported how they expected to feel if they stole: "Please imagine that you chose to rob the poor. Now, imagine you have completed this role—that is, you selected a poor player to rob out of a list of SONA IDs [anonymous, unique participant identifiers]. At that moment, to what extent would you feel...guilty?" (1 = "Not at all" to 9 = "Very much").

Role Determination. On the following page, all participants chose one of two options labeled "top" or "bottom," which would ostensibly assign them to either rob or donate. Here again, participants were unaware which box corresponded to which action. Regardless of what they chose, the next page read, "You chose the top [bottom] option. This option is rob the poor. This means you will select a poor player to rob out of a list of SONA IDs."

At this point, decision guilt participants reported how they currently felt: "Right now, to what extent do you feel-guilty?" (1 = "Not at all" to 9 = "Very much"). At the same point in time, post-decision anticipated guilt participants reported how they expected to feel after stealing: "Now, imagine you have completed the role of robbing the poor—that is, you selected a poor player to rob out of a list of SONA IDs. After stealing, at that moment, to what extent would you feel...guilty?" (1 = "Not at all" to 9 = "Very much").

Stealing. Finally, all participants selected the poor player they would rob by choosing a SONA ID from a drop-down list and then provided demographic information.

Results

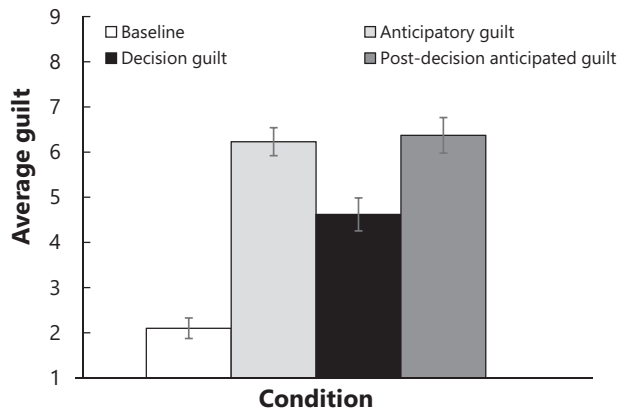
Figure 4 displays average levels of guilt (experienced or anticipated) in each condition. Supporting the existence of decision guilt, individuals in the decision guilt condition felt significantly guiltier ($M = 4.62$; $SD = 2.83$) than did baseline participants ($M = 2.10$, $SD = 1.78$; $t(119) = 5.87$, $p < .001$).

Further supporting our predictions, decision guilt also significantly differed ($M = 4.62$, $SD = 2.83$) from both anticipatory guilt (measured prior to the realization; $M = 6.23$, $SD = 2.42$; $t(119) = 3.37$, $p = .001$) and post-decision anticipated guilt (measured after the realization; $M = 6.37$, $SD = 3.04$; $t(118) = 3.26$, $p = .001$). The two anticipated guilt measures did not differ from one another ($t(119) = .27$, $p = .784$).

Discussion

Pilot study 1 demonstrates that individuals feel guilty upon realizing they will commit a guilt-inducing action—that is, they experience decision guilt. Further, decision guilt was

FIGURE 4

CURRENT OR ANTICIPATED GUILT IN EACH CONDITION,
PILOT STUDY 1NOTE.—Error bars represent ± 1 se around the mean.

different from the guilt individuals anticipated feeling upon carrying out the action, when measured either at the same point in time as decision guilt or in the earlier decision-making phase. These findings demonstrate that decision guilt is not a manifestation of forecasted action guilt; rather, it seems to be a distinct emotional experience. According to our theoretical framework, decision guilt should also decay over time. We test this possibility in pilot study 2.

PILOT STUDY 2: DEMONSTRATING THE DECAY OF DECISION GUILT

As in pilot study 1, participants in this study learn that they will steal from another participant, and are led to believe that their actions played a part in this role determination. Prior to the theft (i.e., before carrying out the guilt-inducing behavior), participants report on their emotional states, either immediately upon learning of their role or after time has elapsed. We predict that consumers will again report experiencing decision guilt. Importantly, we also predict that this emotion will decay over time. However, a decrease in reported guilt after a delay may reflect other unrelated dynamics. Participants could report lower emotions throughout the course of a study because of scale adaptation; similarly, the awareness of their role could increase all reported emotions, which would then decline back to baseline after a break. To reject these alternative accounts for the predicted pattern of guilt, participants also report a set of additional emotions; we show that these emotions do not reveal the same temporal pattern.

Method

Overview. One hundred ninety-nine Amazon Mechanical Turk (MTurk) workers (51% female, $M_{age} = 36.9$ years, $SD_{age} = 11.8$ years) participated for a small monetary payment. Participants were randomly assigned to one of two conditions (no-delay or delay), between-subjects. No-delay participants completed filler tasks, learned about the game (similar to pilot study 1, and described next) and flipped a coin to determine their role, and then reported their emotional state. Delay participants completed the same activities, but instead completed the filler tasks after the coin flip—before reporting their emotions. Thus, during the filler tasks, there was time for their emotional response to decay before it was measured. Finally, all participants stole the payoffs of another participant, per the game rules. We describe each of these actions next.

Game Role Determination and Filler Tasks. Participants learned that they would play a game and then responded to the same attention check as in pilot study 1 (except “lab participants” was replaced with “MTurk workers”). Next, they learned they would flip a coin to determine their role in the game. They would play the game either as a knight and “fight honorably” by solving puzzles, where the knight who solved more (vs. fewer) puzzles would earn a 50 cent (vs. 5 cent) bonus payment, or instead could play as a thief. Thieves would “select a knight and take all the money that knight has worked for, leaving that knight with \$0.” Participants then practiced flipping a (fair) virtual coin. On the following screen, participants flipped a second virtual coin that determined their role. Unbeknownst to them, this latter coin was not fair/random; all participants were assigned to the role of thief, and would thus need to steal the bonus earnings of another participant.

As mentioned previously, participants also completed approximately five minutes of unrelated filler tasks (details in the [web appendix](#)). No-delay participants completed these filler tasks before learning about the game. Delay participants completed these filler tasks after flipping a coin to determine their role of the thief; thus, there was a delay between the role revelation and when they reported their emotions.

Reporting Emotions. Next, in randomized order, participants indicated how ashamed, regretful, guilty, sad, fearful, and happy they felt “right now” (1 = “Not at all” to 9 = “Extremely”). These emotions were selected to match certain characteristics of guilt. Shame and regret are both self-caused emotions that are negative in valence, like guilt (Roseman 1984). Sadness and fear were included as control emotions that are negative in valence, but not self-caused. Finally, happiness was included as a control emotion that is positive in valence. For no-delay participants,

as mentioned, this reporting occurred immediately after they learned that they would play as a thief. Thus, any emotions measured at this point reflect the emotions they experienced upon the initial realization that they would engage in a harmful behavior (stealing), before the theft. For delay participants, this reporting occurred after the filler tasks that followed their role revelation. This delay should allow emotions to dissipate before being reported.

Stealing. Next, all participants were directed to steal the bonus earnings of one participant playing as a knight. They chose which participant they would steal from by selecting a participant ID from a drop-down list (these IDs were fictitious, but followed the structure of typical MTurk worker IDs). On the following screen, participants learned that they stole a 50 cent bonus from this selected MTurk worker. Finally, participants answered, “How responsible do you feel about MTurk worker [ID] losing his/her earnings?” (1 = “Not responsible at all” to 9 = “Completely responsible”) and provided demographic information.

Results

Guilt. Supporting the idea that consumers experienced decision guilt that decayed over time, no-delay participants reported feeling significantly higher guilt ($M = 3.16$, $SD = 2.65$) than did delay participants ($M = 1.99$, $SD = 1.77$; $t(197) = 3.67$, $p < .001$).

Other Emotions. We tested whether other emotions showed the same pattern as guilt. As with guilt, albeit with a smaller decline, participants reported higher shame in the no-delay condition ($M = 2.84$, $SD = 2.47$) than in the delay condition ($M = 2.09$, $SD = 2.01$; $t(197) = 2.35$, $p = .020$). However, this reduction in shame following a delay is not robust across the remaining studies. Furthermore, participants were similarly regretful (no-delay: $M = 3.21$, $SD = 2.67$; delay: $M = 2.79$, $SD = 2.47$; $t(197) = 1.16$, $p = .248$), sad (no-delay: $M = 2.94$, $SD = 2.26$; delay: $M = 2.71$, $SD = 2.42$; $t(197) = .69$, $p = .490$), fearful (no-delay: $M = 2.47$, $SD = 2.06$; delay: $M = 2.16$, $SD = 2.03$; $t(197) = 1.09$, $p = .279$), and happy (no-delay: $M = 5.38$, $SD = 2.46$; delay: $M = 5.19$, $SD = 2.33$; $t(197) = .57$, $p = .569$) in both conditions, suggesting no significant reduction in these emotions following a delay.

Discussion

Pilot study 2 reveals that decision guilt decays with the passage of time. But what is the significance of decision guilt and its decay in the period prior to acting? Does it contribute, as we have posited, to a reduction in the overall level of guilt consumers experience upon acting, or is it swamped by action guilt, leaving no measurable influence? The next experiment addresses these questions by testing

whether decision-enactment gaps reduce overall guilt upon acting.

EXPERIMENT 1: DECISION-ENACTMENT GAPS REDUCE GUILT UPON ACTING

As in the pilot studies, experiment 1 participants are led to steal the earnings of another participant either immediately after learning that they have earned this role, or after a delay. However, unlike the pilot studies, this experiment examines the overall guilt participants feel immediately *after* engaging in the guilt-inducing action of stealing. We predict that decision-enactment gaps will reduce the overall guilt participants experience upon acting. In addition to testing for this effect, experiment 1 also seeks discriminant validity by testing whether decision-enactment gaps reduce other emotions beyond guilt.

Method

Overview. One hundred twenty-one undergraduates (33% female; $M_{\text{age}} = 21.5$ years, $SD_{\text{age}} = 1.9$ years) participated for partial course credit. Participants were randomly assigned to one of two conditions (unseparated or separated), between-subjects. All participants completed four activities in this experiment. Separated participants learned about the game (similar to pilot study 2, and described next) and flipped a coin to determine their role, completed filler tasks, stole money from another participant, and finally reported their emotions. Thus, there was a decision-enactment gap between the realization (the coin flip) and the behavior (stealing), immediately after which emotional states were assessed. Unseparated participants completed the same activities, but instead completed the filler tasks before the coin flip; thus, there was no temporal separation between the initial realization that they will steal and the actual theft.

Game Role Determination and Filler Tasks. Participants were taken one at a time to a side room, where they learned they would participate in a study that involved creating audio recordings. Consenting participants remained in the room and began the study; participants who did not consent were dismissed. Separated participants learned they would play a game alongside other participants and completed the same attention check as pilot study 1. At the end of the week, one participant would be randomly selected to receive his/her full game earnings as cash. Participants could either play as a knight and “fight honorably” by solving puzzles, with the knight who solved more puzzles earning \$50 and the other earning \$25, or instead could play as a thief. Thieves would “select a knight and take all the money that knight has worked for, leaving that knight with \$0.” Participants then practiced flipping a (fair) virtual coin.

Next, to enhance the social realism of the game, ensure comprehension, and increase engagement, we had participants make a verbal recording explaining the setup of the game in front of a research assistant. They read, "You should imagine you are explaining to another person what just happened and what will happen in the game. You should describe: how many players are in the game, the roles of the players, the potential actions and consequences in the game, etc." On the following screen, participants flipped a second virtual coin that determined their role. Unbeknownst to them, this latter coin was not fair/random; all participants were assigned to the role of thief, and would thus steal the earnings of another participant. Thereafter, participants made a second verbal recording. The instructions were, "You should imagine you are explaining to another person what just happened in the game and how you feel about it. Describe what happened and how you feel in your own words." As with the previous recording, this was designed to reinforce the role determination and heighten participants' engagement in the game.

After this role determination, separated participants completed unrelated filler tasks (approximately five to eight minutes long; details in the [web appendix](#)). As mentioned previously, unseparated participants completed this same set of activities, but in an alternate order, completing the filler tasks before learning about the game and determining their role.

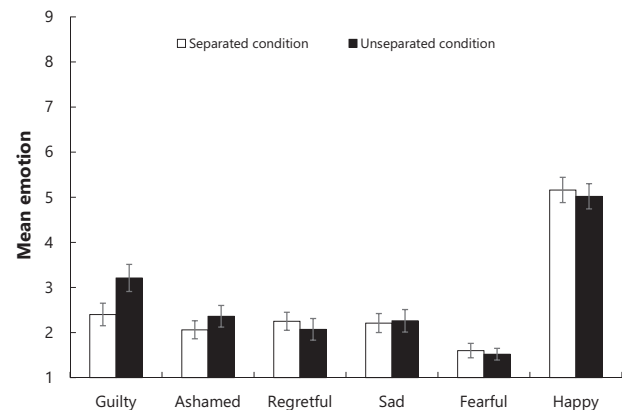
Stealing. Next, all participants were directed to steal the earnings of one participant playing as a knight. They selected a participant ID from a drop-down list (these IDs were fictitious, but followed the structure of typical IDs in the lab). On the following screen, they learned that they stole \$50 in potential winnings from this selected participant. Thus, if they were chosen at the end of the week, they would receive \$50. However, if the knight they stole from was chosen, the knight would learn that he/she won, but would receive nothing. Immediately thereafter, all participants made a third recording with the same instructions as the previous one: to explain what happened and how they felt.

Reporting Emotions. On the next page, participants reported the emotions they were currently feeling (the same emotions reported in pilot study 2). In randomized order, they indicated how sad, ashamed, regretful, guilty, fearful, and happy they felt "right now" (1 = "Not at all" to 9 = "Extremely"). Finally, participants answered, "How responsible do you feel about participant [ID] losing his/her earnings?" (1 = "Not at all" to 9 = "Completely responsible") and provided demographic information.

Results

Guilt. Figure 5 displays all emotions by condition. In line with our predictions, participants felt significantly

FIGURE 5
SELF-REPORTED EMOTIONS, EXPERIMENT 1



NOTE.—Error bars represent ± 1 se around the mean.

guiltier in the unseparated condition ($M = 3.21$, $SD = 2.25$) than in the separated condition ($M = 2.40$, $SD = 1.95$; $t(119) = 2.11$, $p = .037$). This result reveals that the decision-enactment gap indeed reduced participants' guilt upon acting.

Other Emotions. Although the decision-enactment gap reduced guilt, it did not reduce any of the other emotions measured. Participants did not report significantly different levels of shame in the unseparated ($M = 2.36$, $SD = 1.56$) and the separated conditions ($M = 2.06$, $SD = 1.84$; $t(119) = .96$, $p = .337$). Participants were also similarly regretful in both conditions (unseparated: $M = 2.07$, $SD = 1.80$; separated: $M = 2.25$, $SD = 1.63$; $t(119) = -.59$, $p = .553$), a pattern repeated with sadness (unseparated: $M = 2.26$, $SD = 1.87$; separated: $M = 2.21$, $SD = 1.63$; $t(119) = .16$, $p = .870$), fear (unseparated: $M = 1.52$, $SD = .98$; separated: $M = 1.60$, $SD = 1.26$; $t(119) = -.42$, $p = .678$), and happiness (unseparated: $M = 5.02$, $SD = 2.13$; separated: $M = 5.16$, $SD = 2.26$; $t(119) = -.35$, $p = .724$). These results suggest that the effect of a decision-enactment gap in this experiment was isolated to guilt.

Discussion

Experiment 1 reveals that decision-enactment gaps reduce how guilty individuals feel upon engaging in a guilt-inducing behavior. Together, pilot study 2 and experiment 1 demonstrate decision guilt and its decay, and reveal the effect of decision-enactment gaps on overall guilt upon acting. However, our theoretical framework supports a direct

link between these two findings. We test this notion in experiment 2.

EXPERIMENT 2: LINKING THE GUILT-REDUCING POWER OF DECISION-ENACTMENT GAPS TO THE DECAY OF DECISION GUILT

Experiment 2 employs a similar experimental setup as experiment 1, but with a repeated-measures design. It tests for a link between the decay of decision guilt and the ability of decision-enactment gaps to reduce the overall guilt consumers feel upon acting.

Method

Overview. One hundred fifty undergraduates (60% female, $M_{\text{age}} = 21.2$ years, $SD_{\text{age}} = 2.7$ years) participated for partial course credit. Participants were randomly assigned to one of two conditions in a mixed design (between-subjects: separated or unseparated; repeated measure: feelings of guilt). All participants completed eight activities in this experiment, four of which were reporting their current level of guilt. All participants began by reporting their baseline levels of guilt. Thereafter, separated participants learned about the game (similar to that of experiment 1, with slight variations described next), selected an option to determine their role, reported their decision guilt, completed filler tasks, reported their post-filler-task guilt, stole money from another participant, and finally reported their post-theft feelings of guilt. Thus, there was a decision-enactment gap between the realization and the behavior (stealing). Unseparated participants completed the same activities, but instead completed the filler tasks before the role determination; thus, there was no temporal separation between the realization and the theft.

Details. At the beginning of the experiment, all participants read, "Before we begin, we are interested in how you feel in this moment. Right now, to what extent do you feel-guilty?" (1 = "Not at all" to 9 = "Very much"). The rest of the game followed the setup of experiment 1 (filler task details are in the [web appendix](#)), with a few exceptions. Participants completed the study in a main computer lab with no audio recordings (participants only self-reported guilt). Rather than a coin flip, the role determination mirrored that of pilot study 1, where the choices of "left" or "right" and "top" or "bottom" determined participants' roles in the game. (Again, all participants ended up as thieves who must steal from another participant.) Participants also reported their guilt at three additional times throughout the experiment, in the same manner as baseline guilt.

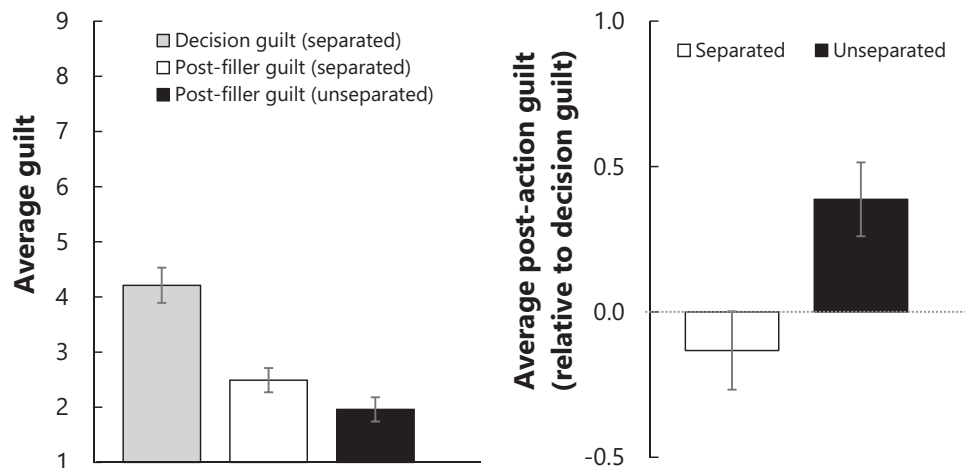
Results

The Decay of Decision Guilt. Participants again experienced decision guilt, and it decayed over time. Specifically, participants reported significantly higher guilt after the realization that they would steal ($M = 3.98$, $SD = 2.77$) than they did at baseline ($M = 1.93$, $SD = 1.78$; paired $t(149) = 8.44$, $p < .001$). Furthermore, participants in the separated condition (i.e., those for whom the filler tasks followed the realization) reported significantly higher guilt immediately after the realization (i.e., decision guilt, $M = 4.21$, $SD = 2.77$) than they did after the filler tasks that followed the realization (i.e., post-filler guilt, $M = 2.49$, $SD = 1.91$; paired $t(74) = 6.43$, $p < .001$; see [figure 6](#), left panel). This suggests that in the condition in which decision guilt could decay, it did. However, it did not decay all the way back to baseline ($M = 1.76$, $SD = 1.45$; paired $t(74) = 3.45$, $p < .001$), suggesting that on average in this experiment, a residual level of decision guilt remained. Consistent with this idea, this measure of post-filler guilt in the separated condition ($M = 2.49$, $SD = 1.91$) was marginally higher than the post-filler guilt reported in the unseparated condition (i.e., after the same filler tasks but absent a decision; $M = 1.96$, $SD = 1.90$; $t(148) = 1.72$, $p = .09$).

Decision-Enactment Gaps and Post-Action Guilt. We predicted that separated participants would report lower guilt upon stealing than unseparated participants would. To test this in accordance with the repeated-measures design, we first ensured that participants reported equal guilt at baseline. Indeed, participants reported similar levels of baseline guilt prior to the experimental manipulation (separated: $M = 1.76$, $SD = 1.45$ vs. unseparated: $M = 2.09$, $SD = 2.05$; $t(148) = 1.15$, $p = .253$). We also expected and observed no difference in the level of decision guilt participants felt after learning they would steal from a peer (separated: $M = 4.21$, $SD = 2.77$ vs. unseparated: $M = 3.75$, $SD = 2.77$; $t(148) = 1.03$, $p = .303$). Thus, to account for differences between participants attributable to their individual sensitivity to the guilt-inducing scenario (in line with this repeated-measures design), we control for these measures when comparing participants' post-action guilt. As one might expect, a regression predicting post-action guilt from decision guilt, baseline guilt, and condition (separated vs. unseparated) finds a significant positive effect of decision guilt ($\beta = .94$, $t(146) = 27.39$, $p < .001$). There was no main effect of baseline guilt ($\beta = -.03$, $t(146) = -.66$, $p = .513$; excluding baseline guilt as a predictor in these analyses does not affect the results). Importantly, there was also a main effect of condition: participants reported significantly higher post-action guilt in the unseparated condition (least-squares $M = 4.36$, $SE = .13$) than in the separated condition (least-squares $M = 3.86$, $SE = .13$; $\beta = .50$, $t(146) = 2.70$, $p = .008$; see [figure 6](#), right panel). Thus, introducing a decision-enactment gap

FIGURE 6

THE DECAY OF DECISION GUILT, EXPERIMENT 2



NOTE.—In the left panel, the left and middle bars show the level of guilt felt at the point of the decision and the guilt felt after a delay, demonstrating the decay of decision guilt (in the separated condition, where this decay was possible). Comparing the middle and right bars reveals that the guilt felt after a delay remained higher than the guilt felt after the same filler tasks, but absent a decision (i.e., the unseparated condition). In both panels, error bars represent ± 1 se around the mean.

again reduced the level of guilt individuals felt immediately after performing the action.

The Link between Decision Guilt Decay and the Effect of a Decision-Enactment Gap. We predicted that (a) decision-enactment gaps should reduce the level of guilt individuals feel upon acting because (b) such gaps allow decision guilt to decay. The results already presented support predictions (a) and (b) separately, but these findings should also be related to one another. Specifically, among separated participants, the level of post-filler guilt should reflect the residual level of decision guilt felt. Accordingly, it should directly correspond to the overall guilt participants feel upon acting: the lower the (residual) level of decision guilt, the lower overall guilt participants should feel upon acting (because overall guilt is a composite of action guilt and [decayed] decision guilt). In other words, our theoretical framework predicts a positive correlation between post-filler guilt and post-action guilt among separated participants. However, among unseparated participants, the post-filler guilt measure does not represent the residual level of decision guilt experienced (as these participants have not yet experienced the realization), and thus it should not correlate with post-action guilt.

To test this prediction, we regressed post-action guilt on post-filler guilt (mean-centered), condition (separated or unseparated, effect-coded), and their interaction. In line with our predictions, this analysis reveals the previously

uncovered main effect of condition ($\beta = 1.93$, $t(146) = 2.82$, $p = .006$), whereby participants report higher post-action guilt in the unseparated condition than in the separated condition. There was also a main effect of post-filler guilt ($\beta = .86$, $t(146) = 5.50$, $p < .001$), whereby the higher a participant's level of post-filler guilt, the higher the reported post-action guilt (or said otherwise, the lower the level of post-filler guilt, the lower the level of post-action guilt). Further, these effects were qualified by a significant interaction ($\beta = -.67$, $t(146) = -3.03$, $p = .003$). Simple-effects analyses reveal that within the separated condition, there was the predicted positive main effect of post-filler guilt on post-action guilt ($\beta = .86$, $t(73) = 6.32$, $p < .001$). However, as expected, there was no such effect within the unseparated condition ($\beta = .19$, $t(73) = 1.08$, $p = .283$).

Discussion

Experiment 2 converges with pilot study 2 and experiment 1 to demonstrate that consumers experience decision guilt that decays during a decision-enactment gap. Further, it identifies a link between this decay and the ability of decision-enactment gaps to lower the guilt consumers feel upon acting. Together, these studies establish the guilt-reducing power of decision-enactment gaps as measured via self-report. Nevertheless, there are pitfalls of emotional self-reports (Pham 2004; Robinson and Clore 2002;

Winkielman and Berridge 2004). Thus, the next experiment tests the behavioral consequences of decision-enactment gaps.

EXPERIMENT 3: DECISION-ENACTMENT GAPS INCREASE INDULGENT CONSUMPTION

Experiment 3 shifts from examining interpersonal harm to exploring self-control and consumption. Participants choose between a healthy and an unhealthy food item (Shiv and Fedorikhin 1999), and then consume their chosen item. Drawing on prior research establishing that guilt compels consumers to stop their guilt-inducing behavior (Amodio et al. 2007; Giner-Sorolla 2001; Monteith et al. 2002), we predict that decision-enactment gaps will disrupt this “stopping mechanism,” enabling individuals to carry out their guilt-inducing behavior more freely. Accordingly, decision-enactment gaps should increase consumption of the guilt-inducing (unhealthy) item, but not impact the healthy item that should not elicit guilt.

Method

Overview. Two hundred fifty-one undergraduates (59% female; $M_{\text{age}} = 21.0$ years, $SD_{\text{age}} = 2.9$ years) participated for partial course credit. Participants were randomly assigned to one of two conditions (separated or unseparated), between-subjects. All participants completed five activities in this experiment. Separated participants chose a food option, completed filler tasks, reported their anticipation, consumed their chosen food, and finally had their food weighed. Thus, there was a decision-enactment gap between their choice and consumption. Unseparated participants completed the same activities, but instead completed the filler tasks before making the food choice, eliminating the temporal gap between choice and consumption. Participants in both conditions completed the same set of tasks, and ended up consuming their chosen items at approximately the same time. In this way, we aimed to prevent intertemporal considerations from muddying the choice or consumption (Read and Van Leeuwen 1998).

Food Choice and Filler Tasks. Upon entering the lab, all participants indicated how hungry they were (1 = “Not at all hungry” to 7 = “Very hungry”) and the time since they last ate. Participants in the separated condition then received a packet informing them that at some point in the session, they would watch and evaluate a movie. They read that we were studying whether eating during a movie affects perceptions of the movie, and so they could choose one of two food options to consume during the movie. The food options were caramel-covered popcorn (an unhealthy option) or shelled edamame (a healthy, control food). The ingredients and nutritional facts for both options were

printed in the packet. A pretest described in the [web appendix](#) confirms the intuition that choosing caramel-covered popcorn over edamame induces guilt.

Participants circled an option to indicate their choice, and then proceeded to complete unrelated lab filler tasks (approximately 15 minutes long; details in the [web appendix](#)). Unseparated participants completed the same two tasks, but in the reverse order (first completing filler tasks and then choosing a food item).

Reporting Anticipation. After completing these two tasks, participants received a sheet and responded to two questions: “How excited are you to watch a movie?” (movie anticipation) and “How excited are you about eating the snack?” (eating anticipation) (1 = “Not at all excited”; 5 = “neutral”; 9 = “Extremely excited”). Prior research has shown that having a longer wait time before consumption can increase anticipation and consumption enjoyment (Nowlis, Mandel, and McCabe 2004), so the latter measure was designed to account for the potential influence of this nonguilt factor on amount consumed. The movie excitement measure was designed as a distractor item.

Food Consumption. Next, research assistants handed participants their chosen items in preweighed paper bags (180 grams of food; details about this quantity are in the [web appendix](#)), informed participants they could eat the snack during the movie, and instructed them to put on their headphones. Participants then freely consumed their food while watching a movie clip (the first 18 minutes and 20 seconds of the documentary *Free to Play*).

Food Weighing and Post-Consumption Measures. After each participant’s movie clip ended, a research assistant collected his/her snack bag and brought it to a separate room to weigh it. Participants were not made aware that their food would be, nor that it was, weighed; they were merely told the food was removed so that they could complete the remainder of the experiment without distraction. Amount consumed was converted from weight (in grams) to volume (in milliliters) to more accurately represent how much food was consumed, but this conversion does not affect the pattern of our results (e.g., the same pattern of results arises when we examine calories consumed).

Next, each participant completed a follow-up survey to maintain the cover story that we were interested in whether eating influenced their perceptions of the movie (details in the [web appendix](#)). They then reported which food they chose and why they chose it, as well as how the food tasted (1 = “Extremely bad” to 7 = “Extremely good,” or N/A = “didn’t eat any”). Finally, they reported demographic and individual difference information (details in the [web appendix](#)).

This experiment did not directly measure participants' self-reported guilt, as its primary focus was to capture real behavior. The process of consciously reporting one's emotional state can significantly alter emotional experiences themselves (Kassam and Mendes 2013), so measuring self-reported guilt before measuring its behavioral consequences may have distorted participants' behavior (Lieberman et al. 2007; Scheier and Carver 1977). On the other hand, measuring reported guilt after participants had acted would also be problematic, as this measurement could be influenced by the very behavior under investigation: the amount consumed. (If decision-enactment gaps increase the amount consumed, this increased consumption could accordingly increase action guilt, canceling out the decay of decision guilt.)

Results

Choice. To test for possible selection effects in the form of different choices made in the two conditions, we examined the percentage of participants in each condition who chose caramel-covered popcorn. As desired, there was no significant difference between the proportion of separated (71.32%) and unseparated (64.75%) participants choosing popcorn ($\chi^2(1, N = 251) = .96, p = .327, \phi = .06$), suggesting that the temporal separation manipulation did not result in two different distributions of participants' choices.

Anticipation. To ensure that separated participants were not more eager to consume than were unseparated participants, as would be predicted by a savoring or anticipation account (because more time had elapsed after their choice), we analyzed participants' self-reported excitement to eat. For this and all remaining analyses, we effect-coded (1 vs. -1) each of our binary condition variables (here, condition and food) to allow for interpretation of our main effects. A linear regression with condition, food, and their interaction as predictors revealed no main effect of condition ($\beta = -.09, t(246) = -.65, p = .515$), no main effect of food ($\beta = .15, t(246) = .115, p = .252$), and no interaction between food and condition ($\beta = -.05, t(246) = -.37, p = .711$). These results suggest that anticipation did not drive any differences by condition on amount consumed, but to further contend with this possibility, we also directly control for eating anticipation when examining amount consumed.

Amount Consumed. Amount consumed (in milliliters) was right-skewed (skewness = 1.47), and a Shapiro-Wilk test (Shapiro and Wilk 1965) revealed a violation of normality ($W = .86, p < .001$). To account for this violation, we analyzed the median amount consumed using a quantile regression; the web appendix includes alternative analyses and additional details. Condition (separated or unseparated), chosen food (popcorn or edamame), and their

interaction served as predictors, and eating anticipation (mentioned above; $\beta = 15.87, t(235) = 4.31, p < .001$), time of day ($\beta = 22.56, t(235) = 1.37, p = .173$), and perceived tastiness of the food ($\beta = 20.60, t(235) = 3.12, p = .002$) served as control variables. This analysis revealed a main effect of food ($\beta = 84.10, t(235) = 8.90, p < .001$) such that participants consumed a higher volume of popcorn than edamame, and a main effect of condition ($\beta = 19.37, t(235) = 2.13, p = .034$), whereby participants consumed more food in the separated condition than in the unseparated condition. Further, these effects were qualified by a significant interaction between food and condition ($\beta = 23.96, t(235) = 2.59, p = .010$), suggesting that condition differently affected consumption of the two foods.

An analysis of the simple effects using median quantile regressions (with the same control variables as in the prior analysis) revealed the predicted effect of condition on popcorn consumed, ($\beta = 73.93, t(161) = 1.97, p = .051$). That is, separated participants consumed more popcorn (median = 273.56 ml, 95% CI (bootstrapped) [230.70, 307.40]) than unseparated participants did (median = 221.80 ml, 95% CI (bootstrapped) [185.70, 262.10]). In contrast, there was no effect of condition on the amount of edamame consumed ($\beta = -3.25, t(71) = -.26, p = .797$), as separated participants (median = 65.41 ml, 95% CI [44.56, 83.59]) and unseparated participants (median = 62.63 ml, 95% CI (bootstrapped) [46.25, 77.90]) consumed similar amounts. Figure 7 presents covariate-adjusted means to complement the medians presented in the current analyses (a graphical presentation of the medians, revealing the same pattern, is presented in the web appendix).

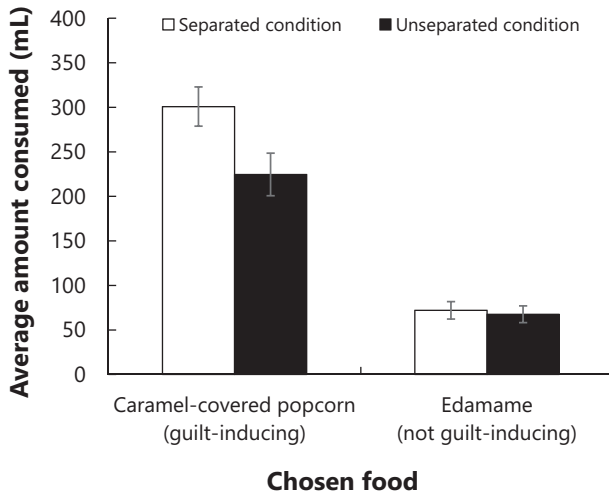
Discussion

Experiment 3 reveals that decision-enactment gaps allow individuals to carry out their otherwise guilt-inducing behavior more freely. Specifically, it finds that temporally separating choice and consumption increased the amount of indulgent food consumed, but did not affect the consumption of healthy food. Thus, in support of our theoretical account, decision-enactment gaps can mitigate the initial function of guilt: behavior interruption (Amodio et al. 2007). Experiment 4 investigates whether decision-enactment gaps can also mitigate the subsequent function of guilt: motivating reparation (Tangney et al. 1996).

EXPERIMENT 4: DECISION-ENACTMENT GAPS REDUCE ATONEMENT

Guilt, unlike other emotions, triggers reparative actions to atone for the guilt-inducing behavior (Tangney et al., 1996). Thus, one may infer how guilty someone feels by observing the extent to which he makes amends. To this end, experiment 4 tests whether decision-enactment gaps

FIGURE 7

COVARIATE-ADJUSTED AMOUNT OF FOOD CONSUMED,
EXPERIMENT 3

NOTE.—Outliers were excluded based on the median absolute deviation method (see the web appendix for details). the covariates were time of day, eating anticipation, and perceived tastiness of the food. error bars represent ± 1 se around the mean.

reduce post-behavior atonement. Participants choose between completing (a) an easy task and (b) a difficult task that will earn a charitable donation. We predict that participants who choose the easy option will feel guilty about the foregone opportunity to aid charity, prompting them to subsequently atone by donating a portion of their earnings. Indeed, prior research shows that consumers who feel guilty often alleviate this guilt by donating to charity (Zemack-Rugar et al. 2015). However, this atonement should be tempered when there is a decision-enactment gap between choice and task performance.

Method

Overview. Four hundred fifty-five MTurk workers (47% female, $M_{age} = 36.5$ years, $SD_{age} = 11.7$ years) participated for a small monetary payment. Participants were randomly assigned to one of three conditions (unseparated, separated, or decision-only), between-subjects. The third condition (decision-only) was included in this experiment to assess the consequences of decision guilt alone (more details are provided next). All participants completed four activities in this experiment. Participants learned they would complete several tasks and could choose which of two to complete at some point in the experiment. After choosing a task, separated participants completed filler

tasks (approximately three to six minutes long; details in the web appendix), then completed the task they had chosen, and finally saw an opportunity to donate potential raffle winnings to a charity. In contrast, unseparated participants completed their chosen task immediately after choosing it. Thus, these two conditions differed only in that separated participants had a temporal gap between their task choice and the completion of that task. Decision-only participants chose a task, then saw the donation opportunity before completing their chosen task and then the filler task. Thus, they had made a decision but not performed the action before having the chance to donate. This third condition was designed to further corroborate the notion that mere decisions can rouse guilt, even before the actions associated with those decisions.

Task Choice. Participants chose between two tasks: one option was to rate the quality of three one-line jokes (e.g., “Q: What did the apple say to the worm? A: You’re boring me”) on a 1–10 star scale, while the other involved transcribing a paragraph of text that was scanned in at a 90-degree rotation. Accompanying the latter task description was, “If you choose this boring task, we will also donate 25 cents to the Save the Children charity on your behalf.” We expected that the majority of individuals would choose the easier joke-rating task, but that they would feel a bit guilty about choosing not to aid the Save the Children charity. A pretest described in the web appendix confirms that choosing an easy task instead of a difficult, donation-generating task would be guilt-inducing, in line with our intuitions.

Donation Opportunity. Participants learned they would be entered in a raffle to win a \$25 bonus and could donate any amount of it to Save the Children if they won. In this way, participants could atone for their transgression of not aiding the charity. We designed this atonement opportunity to aid the specific charity that had been affected by participants’ initial decision, based on prior findings that although guilt often promotes a general tendency to be prosocial (de Hooge, Zeelenberg, and Breugelmans 2007), it does so most strongly when the beneficiary of that prosociality is the person(s) whom the individual had wronged (Cryder, Springer, and Morewedge 2012).

Additional Measures. Finally, all participants indicated whether they had heard of Save the Children before and reported how familiar they were with the charity (1 = “not at all” to 4 = “a great deal”). They also indicated how often they give to charity in general (1 = “never” to 6 = “six or more times a year”) and provided demographic information.

Results

Choice. Given that participants in all conditions had identical experimental experiences prior to making their

choice, we expected no differences in the rate of choosing the easy, guilt-inducing task (rating jokes) over the donation-generating task (transcription) in each condition. Indeed, there were no differences among the proportion of separated (79.74%), unseparated (72.67%), and decision-only (75.66%) participants who chose the jokes task ($\chi^2(2, N = 455) = 2.10, p = .350, \phi = .07$).

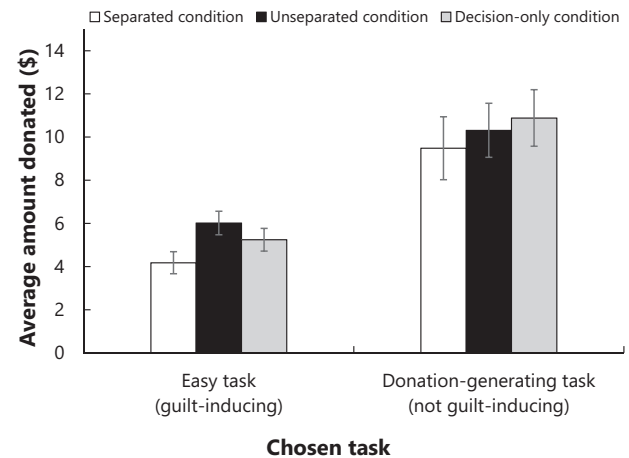
Participants Choosing the Hard, Donation-Generating Task. The small proportion of participants who chose the difficult task (23.95%) selected themselves into a group of individuals who should not feel guilt, and who likely have a taste for helping charities (as they were willing to endure an arduous task to earn a 25 cent donation). Thus, we would expect them to also donate a larger share of their potential raffle earnings (vs. participants who chose the easy task). However, this choice should reflect their orientation toward helping charity, with no relation to guilt; therefore, these individuals' actions are outside the realm of our predictions. Our data support these notions: these individuals donated substantially more of their potential raffle earnings than did the easy-task choosers ($M = \$10.30, SD = 7.85$ vs. $M = \$5.11, SD = 5.90; t(453) = 7.36, p < .001$), and also reported donating significantly more to charity every year ($M = 3.76, SD = 1.56$ vs. $M = 2.98, SD = 1.59; t(453) = 4.52, p < .001$). We therefore focus our analyses on those participants who chose the guilt-inducing task.

Amount Donated as a Function of Separation. Figure 8 displays average donation amounts by condition and by task choice. For participants choosing the guilt-inducing task, we predicted that temporal separation would reduce the amount donated. To test this, we conducted a linear regression including these participants, with two dummy variables representing condition (one for the unseparated condition, and one for the decision-only condition) as predictors, while controlling for participants' average charitable contributions ($\beta = 1.08, t(341) = 5.55, p < .001$). (Whether they had heard of the Save the Children charity was not a strong predictor, $\beta = -.06, t(341) = -.18, p = .855$, and including/excluding this covariate does not influence the main results.) This analysis revealed the predicted effect of the unseparated condition ($\beta = 1.83, t(342) = 2.46, p = .015$), whereby unseparated participants donated significantly more (least-squares $M = \$6.01, SE = .54$) than did separated participants (least-squares $M = \$4.18, SE = .51$). There was no significant effect of the decision-only condition (least-squares $M = \$5.25, SE = .53; \beta = 1.07, t(342) = 1.46, p = .145$), illustrating that these participants donated directionally but not significantly more than did separated participants.

We next conducted a similar regression in which the dummy variables instead represented the decision-only and the separated conditions, so that the unseparated condition became the reference level. This analysis revealed a non-significant effect of the decision-only condition ($\beta = -.76,$

FIGURE 8

COVARIATE-ADJUSTED AMOUNT DONATED, EXPERIMENT 4



NOTE.—The covariates were awareness of the charity and average annual charity contributions. error bars represent ± 1 se around the mean.

$t(342) = -1.01, p = .314$). Thus, participants who had decided which task to complete—but not yet completed it—fell in between the separated and unseparated participants. Although they did not significantly differ, the relative levels fell in line with expectations, whereby unseparated participants donated directionally more than did decision-only participants, who themselves donated directionally more than did separated participants. More importantly, participants for whom there was a decision-enactment gap between task choice and task completion indeed atoned less (i.e., donated less) than did those with no temporal separation.

Discussion

Supporting the second behavioral consequence of guilt, experiment 4 finds that decision-enactment gaps decrease post-behavior atonement in the form of charitable donations. These findings corroborate the role of guilt in our theoretical framework and identify an important consequence of decision-enactment gaps.

GENERAL DISCUSSION

Decades of research have explored how consumers choose between “oughts” and “wants,” between prosocial and selfish acts, between indulgence and restraint. In the face of such conflicts, and against our better nature, we often neglect our workout routines, turn down charity

appeals, break our diets, and spend more than we should. These actions, although often inherently pleasurable, can also elicit the unpleasant feeling of guilt. The current research demonstrates that merely separating in time an initial decision to perform such behaviors from their actual performance can attenuate this emotion, reducing how guilty individuals feel while acting. These “decision-enactment gaps” can thus lead us to indulge with less guilt (experiments 1 and 2), consume more than we otherwise would (experiment 3), and atone less for our behavior afterward (experiment 4).

This research also introduces the notion that mere realizations that one will act can elicit guilt. This “decision guilt” is distinct from the guilt consumers anticipate experiencing upon acting (pilot study 1), and importantly, decays over time (pilot study 2), in the period between decisions and actions. This decay contributes to the reduction of overall guilt consumers feel while acting (experiment 2). Furthermore, the reduction in guilt resulting from decision-enactment gaps arises both when individuals freely make a choice to perform a guilt-inducing act (experiments 3 and 4) and when they do not freely decide, but merely perceive a sense of personal responsibility in determining that they will perform the action (pilot studies 1 and 2, experiments 1 and 2).

In addition to offering evidence for our predicted effects, the current data also address certain alternative explanations. First is the possibility that emotions other than guilt, such as regret or shame, might be responsible for the current results. Although many emotions decay over time (Ekman 1984; Gilovich et al. 1998; Jager et al. 2014; Kahneman 1995), experiment 1 provides evidence that only guilt (and not shame, regret, sadness, (un)happiness, or fear) decayed in the period between an initial realization that one would act and its actual enactment. Further, the behavioral responses to decision-enactment gaps identified in experiments 3 and 4—increased indulgence and reduced atonement—align particularly with the dual functions of guilt: interruption and reparation (Amodio et al. 2007). Together, these results underscore the notion that guilt is acutely affected by decision-enactment gaps.

An additional possible concern is the potential for selection effects to influence our findings. For example, participants in experiment 3 chose between eating caramel-covered popcorn (an unhealthy, though admittedly delicious, indulgence) and edamame (a healthy food) either toward the beginning of the experimental session (i.e., the separated condition) or after completing a few minutes of filler tasks (i.e., the unseparated condition). One might speculate that intertemporal considerations led individuals to select their food options differently in the two conditions. However, participants were not aware of when they would be consuming the food items, and indeed rates of choice were equivalent in both conditions. This pattern repeated in experiment 4 as well. Furthermore, we find the predicted effects of

decision-enactment gaps even when participants did not choose their actions at all (pilot studies 1 and 2, experiments 1 and 2). Thus, selection effects cannot explain these results. Instead, these findings support the notion of guilt decaying during decision-enactment gaps.

Theoretical Contributions

The present work makes notable contributions to the consumer behavior literature. First, it provides a deeper understanding of the consequences of what we term decision-enactment gaps: the time that passes between decisions and actions. Past research has investigated how people choose different actions for the present versus the future; in other words, this tests how knowing that a decision-enactment gap will arise influences choice. For example, individuals tend to choose healthier items to consume in the future than in the present (Read and Van Leeuwen 1998; VanEpps, Downs, and Loewenstein 2016). Accordingly, such work often touts the benefits of “precommitting” by reaching decisions earlier (but see Kivetz and Simonson 2002), such as by ordering meals in advance. Our research complements these findings in two ways. First, it explores the effects of decision-enactment gaps not on what is chosen, but on the actual experience of the chosen behavior. Second, it notes an important caveat to the notion that consumers behave more virtuously when choosing for the future. Although individuals may order fewer unhealthy treats in advance (vs. shortly before consumption), the items they do preorder are likely to elicit less guilt while they are eating. Paradoxically, then, consumers might restrict their in-the-moment consumption of these unhealthy items more when their order immediately precedes consumption (as in experiment 3), undermining some benefits of preordering. Future research may seek to identify the conditions under which delays are (vs. are not) beneficial for consumers’ overall well-being.

This work also builds on prior research examining non-guilt-related effects of decision-enactment gaps on the experience of behaving, an understudied stage in the consumption process (Pham 2013). One effect of such gaps is that they may allow for savoring, which is the current pleasure derived from anticipating a future consumption experience (Amir and Ariely 2007; Chun, Diehl, and MacInnis 2017; Nowlis et al. 2004). Savoring shares certain conceptual features with decision guilt. However, savoring and anticipation tend to build up over time (Amir and Ariely 2007), unlike decision guilt, which decays. Moreover, savoring in a period prior to behavior tends to increase ongoing enjoyment during the experience (Chun et al. 2017). In contrast, we find that the decay of decision guilt results in lower guilt during an experience. Guilt is also different in this respect from anxiety or dread, which may intensify over time, and which may also amplify negative emotional experiences (consider the familiar mental anguish of

dreading going to the dentist, and how that buildup makes you feel once you get to the office). This suggests a sharp contrast between emotions that increase (vs. decrease) over time and amplify (vs. attenuate) the complementary emotional experiences during an action—a ripe opportunity for future research.

The current research also draws attention to the dynamic nature of emotions in consumer behavior. Whereas a rich body of literature has examined the antecedents and consequences of guilt and other emotions in consumer contexts (Allard and White 2015; Cavanaugh, Bettman, and Luce 2015; Coleman et al. 2017; Morales, Wu, and Fitzsimons 2012; Zemack-Rugar, Bettman, and Fitzsimons 2007), much of this work takes a “snapshot” view of emotions, studying them at one point in time. By positing a dynamic model of guilt and tracing its implications not only over time, but also through actual consumption, this research improves our understanding of the roles of specific, functional emotions while highlighting the benefits of developing a richer temporal framework for them.

Limitations and Directions for Future Research

Our theoretical framework and the limitations of the current work provide opportunities for future research. When consumers reach decisions, our results suggest that their corresponding guilt can decay prior to their acting—but what is responsible for this decay? The introduction presents a set of candidate explanations; however, which account can best explain this decay remains an open question for future research.

Regardless of the cause of this decay, we find that decision-enactment gaps have a measurable impact on how guilty consumers feel when acting. Yet another key question arises: what do decision-enactment gaps do to the total amount of guilt experienced across an entire decision-enactment episode? Decision-enactment gaps may simply shift the experience of decision guilt to an earlier period, retaining the same total amount of guilt experienced. An alternate possibility is that decision guilt and action guilt interact when they are experienced in close temporal proximity (i.e., when there is no decision-enactment gap); perhaps there is a diminishing marginal impact of guilt, so that the total amount of guilt experienced concurrently is lower than when these two sources are experienced separately (subadditivity). A similar attenuation effect could arise if guilt interacts with other emotions in the course of behaving (e.g., the joy of indulging) such that these emotions reduce each other’s impact, or even amplify each other (Goldsmith, Cho, and Dhar 2012). Determining the total guilt consumers experience is an important future question from a consumer welfare perspective.

Furthermore, future research might investigate whether decision-enactment gaps influence remembered guilt a period of time after the behavior. Might the reduction in guilt

experienced during the behavior influence the amount of guilt consumers remember having experienced? Prior research gives reason to believe that changing consumers’ guilt during experiences may impact the guilt they recall even weeks afterward (Goldsmith et al. 2012). If decision-enactment gaps reduce not only experienced guilt but also remembered guilt, this effect may have additional significant consequences, as individuals often rely on their memory of past emotional experiences to guide their decisions (Baumeister et al. 2007).

There are additional interesting directions for future research in exploring the behavioral consequences of decision-enactment gaps. For example, through reducing consumers’ guilt, decision-enactment gaps may decrease the extent to which individuals opt for utilitarian over hedonic items post-consumption (Levav and McGraw 2009; Ramanathan and Williams 2007; Zemack-Rugar et al. 2007). In this way, decision-enactment gaps may encourage individuals to continue indulging after their initial indulgences, producing a consumption cycle.

Our experiments all involved situations in which participants made a choice (or were partly responsible for the decision) to engage in a particular action and then carried out that action; there was no opportunity for them to change their minds prior to the behavior. This is true of many situations in consumers’ lives. However, in some cases, consumers reach decisions to engage in an action, but then may rethink their choice. Experiencing decision guilt in advance of an action may, in certain circumstances, motivate consumers not to perform the action after all. Further research is needed to identify when this pattern could arise.

Finally, the current research focused specifically on guilt because of the significant consequences it has for consumer behavior. However, one might question whether a similar dynamic exists for other emotions. Our framework takes into account two key features of guilt: (a) its associated sharpened focus on a specific behavior, rather than a broader evaluation of the self (Lewis 1971; Tracy and Robins 2004), and (b) its attribution of personal responsibility and self-blame for the behavior (Smith and Ellsworth 1985; Tangney et al. 1996). That is, guilt follows from a cognitive realization that one will cause harm that is one’s own responsibility—an awareness that can plausibly develop after one merely reaches a decision or comes to a realization, thus laying the foundation for decision guilt. The prediction that decision-enactment gaps will lower guilt during an action follows from both the existence of this decision guilt and its decay over time. Although many other emotions also decay over time, it is less clear whether such emotions would have a similar decision component. Consider the emotion of shame, which involves an attribution of personal responsibility, like guilt: although shame may decay over time (as in pilot study 2), it tends not to be associated with a focal choice or realization, but rather a global evaluation of oneself/one’s identity (Tangney et al.

1996). For this reason, it is possible but less likely for decision-enactment gaps to reduce the experience of shame (indeed, we found no such effect in experiment 1), although further research is needed to investigate whether and when decision-enactment gaps might impact shame and other emotions. Note that our measures for shame included only self-reports; to properly investigate the dynamic effects of shame, one ought to design behavioral experiments that focus on this emotion.

Practical Implications

In the marketplace, consumers engage in numerous actions with the potential to induce guilt. These findings have broad application, given that decisions and their enactment are naturally separated in many situations in individuals' lives. Students may purchase vending machine snacks before class to consume afterward, and may decide either in advance or mid-viewership how many episodes of a TV show to watch on a school night. Customers can use mobile apps to place advance orders for restaurant meals (e.g., Zest) and cappuccinos (e.g., Starbucks), and can pre-order video games (e.g., at Best Buy), movies, and more. Our findings suggest that these preordering decisions can influence the emotional costs consumers bear during these experiences.

Based on this notion, marketers of products and services that may elicit guilt, such as calorie-dense desserts, extravagant vacations, or luxurious massages, may wish to encourage consumers to reach the decision to indulge further in advance. Sending advance mailings to encourage consumers to "precommit" to indulging not only may increase their likelihood of actually doing so (Gollwitzer 1999), but also may improve their experiences by mitigating the unpleasant experience of guilt. From a hedonic perspective, consumers may be better off in terms of their enjoyment when decision-enactment gaps are included.

On the other hand, the reduction of guilt associated with decision-enactment gaps may have adverse consequences that marketers and policy makers wish to prevent. Guilt performs the beneficial functions of prompting behavioral interruption and atonement. Thus, individuals who indulge, perhaps by consuming an unhealthy dessert or buying an expensive vacation, may be less inclined to go to the gym or restrict future expenses to make up for these actions with (vs. without) a decision-enactment gap. Marketers of products and services that can alleviate guilt, or policy makers seeking to encourage beneficial post-behavior atonement, may wish to caution against precommitment to indulgence.

Conclusion

Just as financially prepaying for experiences prevents pain-of-payment considerations from undermining

enjoyment (Prelec and Loewenstein 1998), and just as individuals adapt to prior financial costs with the passage of time (Gourville and Soman 1998), this article finds that individuals can "prepay" their guilt, adapting to these emotional costs prior to commencing their chosen experiences. Thus, adding time between a decision and its enactment can protect experiences from the pain of guilt. Conversely, our findings also suggest that reducing temporal separation between individuals' choices and their enactment can aid self-control efforts and enable adaptive guilt mechanisms to better manage behavioral challenges.

DATA COLLECTION INFORMATION

The first author supervised the collection of data by research assistants and the lab manager at the Atkinson Behavioral Lab, Rady School of Management, for experiments 1 (June 2017), 2 (January 2018), and 3 (October 2016), the pretest for experiment 3 (December 2017), and pilot study 1 (January 2018). Both authors supervised the collection of data on Amazon Mechanical Turk for pilot study 2 (June 2017), experiment 4 (October 2016), and the pretest for experiment 4 (February 2017). The first author analyzed these data under the supervision of the second author.

REFERENCES

- Allard, Thomas and Katherine White (2015), "Cross-Domain Effects of Guilt on Desire for Self-Improvement Products," *Journal of Consumer Research*, 42 (3), 401–19.
- Amir, On and Dan Ariely (2007), "Decisions by Rules: The Case of Unwillingness to Pay for Beneficial Delays," *Journal of Marketing Research*, 44 (1), 142–52.
- Amodio, David M., Patricia G. Devine, and Eddie Harmon-Jones (2007), "A Dynamic Model of Guilt: Implications for Motivation and Self-Regulation in the Context of Prejudice," *Psychological Science*, 18 (6), 524–30.
- Baumeister, Roy F., Arlene M. Stillwell, and Todd F. Heatherton (1994), "Guilt: An Interpersonal Approach," *Psychological Bulletin*, 115 (2), 243–67.
- Baumeister, Roy F., Kathleen D. Vohs, C. Nathan DeWall, and Liqing Zhang (2007), "How Emotion Shapes Behavior: Feedback, Anticipation, and Reflection, Rather than Direct Causation," *Personality and Social Psychology Review* 11 (2), 167–203.
- Cavanaugh, Lisa A., James R. Bettman, and Mary Frances Luce (2015), "Feeling Love and Doing More for Distant Others: Specific Positive Emotions Differentially Affect Prosocial Consumption," *Journal of Marketing Research*, 52 (5), 657–73.
- Chun, HaeEun Helen, Kristin Diehl, and Deborah J. MacInnis (2017), "Savoring an Upcoming Experience Affects Ongoing and Remembered Consumption Enjoyment," *Journal of Marketing*, 81 (3), 96–110.
- Coleman, Nicole Verrochi, Patti Williams, Andrea C. Morales, and Andrew Edward White (2017), "Attention, Attitudes, and Action: When and Why Incidental Fear Increases

- Consumer Choice," *Journal of Consumer Research*, 2 (1), 283–312.
- Cryder, Cynthia E., Stephen Springer, and Carey K. Morewedge (2012), "Guilty Feelings, Targeted Actions," *Personality & Social Psychology Bulletin*, 38 (5), 607–18.
- Dahl, Darren W., Heather Honea, and Rajesh V. Manchanda (2003), "The Nature of Self-Reported Guilt in Consumption Contexts," *Marketing Letters*, 14 (3), 159–71.
- De Hooge, Ilona E., Marcel Zeelenberg, and Seger M. Breugelmans (2007), "Moral Sentiments and Cooperation: Differential Influences of Shame and Guilt," *Cognition and Emotion*, 21 (5), 1025–42.
- Ekman, Paul (1984), "Expression and the Nature of Emotion," in *Approaches to Emotion*, ed. Klaus R. Scherer and Paul Ekman, Hillsdale, NJ: Erlbaum, 319–43.
- Gilbert, Daniel T., Matthew D. Lieberman, Carey K. Morewedge, and Timothy D. Wilson (2004), "The Peculiar Longevity of Things Not So Bad," *Psychological Science*, 15 (1), 14–9.
- Gilovich, Thomas, Victoria Husted Medvec, and Daniel Kahneman (1998), "Varieties of Regret: A Debate and Partial Resolution," *Psychological Review*, 105 (3), 602–5.
- Giner-Sorolla, Roger (2001), "Guilty Pleasures and Grim Necessities: Affective Attitudes in Dilemmas of Self-Control," *Journal of Personality and Social Psychology*, 80 (2), 206–21.
- Goldsmith, Kelly, Eunice Kim Cho, and Ravi Dhar (2012), "When Guilt Begets Pleasure: The Positive Effect of a Negative Emotion," *Journal of Marketing Research*, 49 (6), 872–81.
- Gollwitzer, Peter M. (1999), "Implementation Intentions: Strong Effects of Simple Plans," *American Psychologist*, 54 (7), 493–503.
- Gourville, John T. and Dilip Soman (1998), "Payment Depreciation: The Behavioral Effects of Temporally Separating Payments from Consumption," *Journal of Consumer Research*, 25 (2), 160–74.
- Gross, James J. (1998), "The Emerging Field of Emotion Regulation: An Integrative Review," *Review of General Psychology*, 2 (3), 271–99.
- Gyurak, Anett, James J. Gross, and Amit Etkin (2011), "Explicit and Implicit Emotion Regulation: A Dual-Process Framework," *Cognition and Emotion*, 25 (3), 400–12.
- Izard, Carroll E. (1977), *Human Emotions*, New York: Plenum.
- Jager, Gerry, Pascal Schlich, Irene Tjissen, Jiali Yao, Michel Visalli, Cees De Graaf, and Markus Stieger (2014), "Temporal Dominance of Emotions: Measuring Dynamics of Food-Related Emotions during Consumption," *Food Quality and Preference*, 37 (October), 87–99.
- Kahneman, Daniel (1995), "Varieties of Counterfactual Thinking," in *What Might Have Been: The Social Psychology of Counterfactual Thinking*, ed. Neale J. Roese and James M. Olson, Mahwah, NJ: Erlbaum, 375–96.
- Kassam, Karim S. and Wendy Berry Mendes (2013), "The Effects of Measuring Emotion: Physiological Reactions to Emotional Situations Depend on Whether Someone Is Asking," *PLoS One*, 8 (6), e64959.
- Kivetz, Ran and Anat Keinan (2006), "Repenting Hyperopia: An Analysis of Self-Control Regrets," *Journal of Consumer Research*, 33 (2), 273–82.
- Kivetz, Ran and Itamar Simonson (2002), "Self-Control for the Righteous: Toward a Theory of Precommitment to Indulgence," *Journal of Consumer Research*, 29 (2), 199–217.
- Kouchaki, Maryam, Christopher Oveis, and Francesca Gino (2014), "Guilt Enhances the Sense of Control and Drives Risky Judgments," *Journal of Experimental Psychology: General*, 143 (6), 2103–10.
- Lascu, Dana-Nicoleta (1991), "Consumer Guilt: Examining the Potential of a New Marketing Construct," in *NA—Advances in Consumer Research*, Vol. 18, ed. Rebecca H. Holman and Michael R. Solomon, Provo, UT: Association for Consumer Research, 290–5.
- Levav, Jonathan and A. Peter McGraw (2009), "Emotional Accounting: How Feelings about Money Influence Consumer Choice," *Journal of Marketing Research*, 46 (1), 66–80.
- Lewis, Helen B. (1971), "Shame and Guilt in Neurosis," *Psychoanalytic Review*, 58 (3), 419–38.
- Lieberman, Matthew D., Naomi I. Eisenberger, Molly J. Crockett, Sabrina M. Tom, Jennifer H. Pfeifer, and Baldwin M. Way (2007), "Putting Feelings into Words: Affect Labeling Disrupts Amygdala Activity to Affective Stimuli," *Psychological Science*, 18 (5), 421–8.
- Lieberman, Matthew D., Kevin N. Ochsner, Daniel T. Gilbert, and Daniel L. Schacter (2001), "Do Amnesics Exhibit Cognitive Dissonance Reduction? The Role of Explicit Memory and Attention in Attitude Change," *Psychological Science*, 12 (2), 135–40.
- Lindsay-Hartz, Janice, Joseph de Rivera, and Michael F. Mascolo (1995), "Differentiating Guilt and Shame and Their Effects on Motivation," in *Self-Conscious Emotions: The Psychology of Shame, Guilt, Embarrassment, and Pride*, ed. June P. Tangney and Kurt W. Fischer, New York: Guilford Press, 274–300.
- Lindsey, Lisa L. Massi (2005), "Anticipated Guilt as Behavioral Motivation: An Examination of Appeals to Help Unknown Others through Bone Marrow Donation," *Human Communication Research*, 31 (4), 453–81.
- Loewenstein, George F., Elke U. Weber, Christopher K. Hsee, and Ned Welch (2001), "Risk as Feelings," *Psychological Bulletin*, 127 (2), 267–86.
- Macht, Michael and Dorothee Dettmer (2006), "Everyday Mood and Emotions after Eating a Chocolate Bar or an Apple," *Appetite*, 46 (3), 332–6.
- Miceli, Maria and Cristiano Castelfranchi (1998), "How to Silence One's Conscience: Cognitive Defenses against the Feeling of Guilt," *Journal for the Theory of Social Behaviour*, 28 (3), 287–318.
- Monteith, Margo J., Leslie Ashburn-Nardo, Corrine I. Voils, and Alexander M. Czopp (2002), "Putting the Brakes on Prejudice: On the Development and Operation of Cues for Control," *Journal of Personality and Social Psychology*, 83 (5), 1029–50.
- Morales, Andrea C., Eugenia C. Wu, and Gavan J. Fitzsimons (2012), "How Disgust Enhances the Effectiveness of Fear Appeals," *Journal of Marketing Research*, 49 (3), 383–93.
- Mukhopadhyay, Anirban and Gita Venkataramani Johar (2009), "Indulgence as Self-Reward for Prior Shopping Restraint: A Justification-Based Mechanism," *Journal of Consumer Psychology*, 19 (3), 334–45.
- Neumann, Roland (2000), "The Causal Influences of Attributions on Emotions: A Procedural Priming Approach," *Psychological Science*, 11 (3), 179–82.
- Nowlis, Stephen M., Naomi Mandel, and Deborah Brown McCabe (2004), "The Effect of a Delay between Choice and

- Consumption on Consumption Enjoyment," *Journal of Consumer Research*, 31 (3), 502–10.
- Peloza, John, Katherine White, and Jingzhi Shang (2013), "Good and Guilt-Free: The Role of Self-Accountability in Influencing Preferences for Products with Ethical Attributes," *Journal of Marketing*, 77 (1), 104–19.
- Peterson, Lloyd and Margaret Jean Peterson (1959), "Short-Term Retention of Individual Verbal Items," *Journal of Experimental Psychology*, 58 (3), 193–8.
- Pham, Michel Tuan (2004), "The Logic of Feeling," *Journal of Consumer Psychology*, 14 (4), 360–9.
- (2013), "The Seven Sins of Consumer Psychology," *Journal of Consumer Psychology*, 23 (4), 411–23.
- Prelec, Drazen and George Loewenstein (1998), "The Red and the Black: Mental Accounting of Savings and Debt," *Marketing Science*, 17 (1), 4–28.
- Rachman, Stanley (1993), "Obsessions, Responsibility, and Guilt," *Behaviour Research and Therapy*, 31 (2), 149–54.
- Ramanathan, Suresh and Patti Williams (2007), "Immediate and Delayed Emotional Consequences of Indulgence: The Moderating Influence of Personality Type on Mixed Emotions," *Journal of Consumer Research*, 34 (2), 212–23.
- Read, Daniel and Barbara Van Leeuwen (1998), "Predicting Hunger: The Effects of Appetite and Delay on Choice," *Organizational Behavior and Human Decision Processes*, 76 (2), 189–205.
- Rick, Scott I., Cynthia E. Cryder, and George Loewenstein (2008), "Tightwads and Spendthrifts," *Journal of Consumer Research*, 34 (6), 767–82.
- Robinson, Michael D. and Gerald L. Clore (2002), "Belief and Feeling: Evidence for an Accessibility Model of Emotional Self-Report," *Psychological Bulletin*, 128 (6), 934–60.
- Roseman, Ira J. (1984), "Cognitive Determinants of Emotion: A Structural Theory," *Review of Personality & Social Psychology*, 5, 11–36.
- Sandvik, Ed, Ed Diener, and Randy J. Larsen (1985), "The Opponent Process Theory and Affective Reactions," *Motivation and Emotion*, 9 (4), 407–18.
- Scheier, Michael F. and Charles S. Carver (1977), "Self-Focused Attention and the Experience of Emotion: Attraction, Repulsion, Elation, and Depression," *Journal of Personality and Social Psychology*, 35 (9), 625–36.
- Shapiro, Samuel S. and Martin B. Wilk (1965), "An Analysis of Variance Test for Normality (Complete Samples)," *Biometrika*, 52 (3/4), 591–611.
- Shiv, Baba and Alexander Fedorikhin (1999), "Heart and Mind in Conflict: The Interplay of Affect and Cognition in Consumer Decision Making," *Journal of Consumer Research*, 26 (3), 278–92.
- Smith, Craig A. and Phoebe C. Ellsworth (1985), "Patterns of Cognitive Appraisal in Emotion," *Journal of Personality and Social Psychology*, 48 (4), 813–38.
- Tangney, June Price (1992), "Situational Determinants of Shame and Guilt in Young Adulthood," *Personality and Social Psychology Bulletin*, 18 (2), 199–206.
- Tangney, June Price, Rowland S. Miller, Laura Flicker, and Deborah Hill Barlow (1996), "Are Shame, Guilt, and Embarrassment Distinct Emotions?" *Journal of Personality and Social Psychology*, 70 (6), 1256–69.
- Taylor, Shelley E. (1991), "Asymmetric Effects of Positive and Negative Events: The Mobilization-Minimization Hypothesis," *Psychological Bulletin*, 110 (1), 67–85.
- Thaler, Richard (1985), "Mental Accounting and Consumer Choice," *Marketing Science*, 4 (3), 199–214.
- Tracy, Jessica and Richard W. Robins (2004), "Putting the Self into Self-Conscious Emotions: A Theoretical Model," *Psychological Inquiry*, 15 (2), 103–25.
- VanEpps, Eric M., Julie S. Downs, and George Loewenstein (2016), "Advance Ordering for Healthier Eating? Field Experiments on the Relationship between the Meal Order–Consumption Time Delay and Meal Content," *Journal of Marketing Research*, 53 (3), 369–80.
- Winkielman, Piotr and Kent C. Berridge (2004), "Unconscious Emotion," *Current Directions in Psychological Science*, 13 (3), 120–3.
- Zemack-Rugar, Yael, James R. Bettman, and Gavan J. Fitzsimons (2007), "The Effects of Nonconsciously Priming Emotion Concepts on Behavior," *Journal of Personality and Social Psychology*, 93 (6), 927–39.
- Zemack-Rugar, Yael, Rebecca Rabino, Lisa A. Cavanaugh, and Gavan J. Fitzsimons (2015), "When Donating Is Liberating: The Role of Product and Consumer Characteristics in the Appeal of Cause-Related Products," *Journal of Consumer Psychology*, 26 (2), 213–30.