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Looking forward, looking back: The impact of goal progress and time urgency on consumer responses to mobile reward apps

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ABSTRACT

The authors conduct two studies to examine how time urgency affects consumer responses to mobile reward apps. For participants who have made high progress toward reaching goals, short expiration dates (“collect 10 stamps for a free coffee *by tomorrow*”) cause to-go framing (“2 more stamps to go”) to be more effective than to-date framing (“8 stamps collected so far”), but for participants who have a long way to go before reaching the goal, short expiration dates cause to-date framing to be more effective than to-go framing. However, a long expiration date produced no difference between to-go and to-date framings, under both high and low progress.

Looking forward, looking back.

I have come a long way down the track.

.....

I will be leaning forward, to see what's coming.

—Slim Dusty, Looking Forward, Looking Back.

Slim Dusty may have been unaware of Target's or Starbucks's mobile reward applications (apps, hereafter) when he wrote those lyrics, but the quote resonates with many digital marketers. Most retailers offer mobile apps to allow customers to visualize their progress toward loyalty rewards. For example, Target's mobile app resembles the Target logo and features a cartwheel, called “cartwheel perks,” that allows customers to visually *look forward* and *look back* to see how many points they have earned and how many points they must earn to receive free items or discounts.

To encourage purchases, apps may highlight progress toward final rewards, for example by using “to-go,” looking-forward claims that highlight how many more points are needed to earn the discount or by using “to-date,” looking-back frames that highlight how much progress has been made so far (Koo and Fishbach, 2008; Min et al., 2013). In this study, goal progress framing is a communication strategy that signals information about what has been accomplished (to-date frame) or what remains to be accomplished (to-go frame) to make progress toward a

goal. Koo and Fishbach (2012) proposed the small-area hypothesis to explain how progress frames work: people are more motivated to pursue a goal when their attention is directed to whichever is smaller in size—the area of their initial accumulated or remaining progress needed to reach the goal. That is, to-date frames will be more effective for consumers who are less than half-way through and are thus closer to the starting point; to-go frames will be more effective for those who have progressed more than half-way through and are closer to the end. Building on that research, we identify a boundary condition for the effect. Specifically, we propose that mobile reward apps that impose expiration deadlines add time urgency that then magnifies the small-area effect.

Time urgency refers to the extent to which an individual is sensitive to internally imposed time constraints (Rastegary and Landy, 1993). Scholars have discussed how time pressure and time urgency affect various aspect of consumer responses, such as choice deferral (Dhar and Nowlis, 1999), product attitude (Suri and Monroe, 2003), purchase intention (Aggarwal et al., 2011), and coupon redemption (Inman and McAlister, 1994). For example, time-limited promotions accelerated attitude toward the deal and willingness to purchase (Aggarwal and Vaidyanathan, 2003). Mobile reward apps frequently use limited time frames (e.g., Only 2 days before your reward offer ends) to elicit a sense of urgency and motivate action. Research has further noted that time urgency is a strong and important motivator in goal pursuits (Etkin, 2019), but they have not examined how time urgency affects consumer

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reactions toward mobile reward offers, as we do here to fill the gap.

Mobile reward apps are a timely topic (Iyer et al., 2018). Recent statistics indicate that 90% of U.S. consumers use retail loyalty programs (Mintel, 2019). Particularly, Gen Z and Millennial consumers are more interested in app-based loyalty programs featuring a tiered reward point system than older consumers (Mintel, 2019). Approximately 61% of consumers subscribe to mobile messaging because of incentives or coupons; 55% subscribe because of reward points (U.S. Mobile Consumer Report, 2018); 69% of consumers who have positive experiences with brand apps are interested in adopting loyalty or rewards programs (Willowtree, 2018). These statistics highlight that mobile apps and reward loyalty programs go hand in hand (Mintel, 2019).

The purpose of this study was two-fold: (a) to investigate whether time urgency influences goal progress effects on consumer responses to mobile reward apps and (b) to explore how a third factor, initial progress level—the extent to which people have already accumulated an amount of progress toward the goal (e.g., 20% vs. 80% complete to redeem rewards)—further moderates the joint effect of goal progress framing and time urgency.

Building on the small-area hypothesis (Koo and Fishbach, 2012) and goal gradient theory (Hull, 1932; Kivetz et al., 2006), we argue that goal progress framing will lead to divergent responses depending on how much initial progress has been made toward reward redemption. Evidence suggests that initial progress level significantly influences goal attainment and subsequent motivation (Koo and Fishbach, 2012; Zhang and Huang, 2010). When initial progress toward achieving a goal is low, people are more sensitive to the difficulty of reaching it; when initial progress is high, they are more concerned about the value of the goal (Zhang and Huang, 2010). In a similar vein, people infer goal value from resource scarcity, such as time restrictions (Cannon et al., 2019). Given this reasoning, when a reward offer generates a sense of urgency with an impending deadline, endowing a high (low) level of initial progress will lead consumers to be more likely to accept to-go (to-date) framed messages. We recognize that goal importance reflects the effort invested in pursuing a goal or the restriction of personal autonomy (Baek et al., 2015; Yoon et al., 2016; Zhang et al., 2011), so we consider perceived goal importance as a key mediator in the impact of goal progress framing and time urgency on consumer response.

Our findings make important contributions. First, we add to the literature about consumer goal pursuit by identifying time urgency as a key moderator that affects the persuasive effect of goal progress framing. Given that time constraints lead to greater motivation to adhere to a goal (Etkin, 2019), we reported the interaction between time urgency and reward goal pursuit in consumer response to goal progress framing. Second, we identified the underlying process by showing that consumers use limited time as a reference value to make inferences about goal importance, in turn influencing consumer responses to mobile reward apps. Third, we offer a nuanced understanding of the phenomenon by demonstrating how and why initial progress level can alter consumer responses to mobile reward apps using to-date vs. to-go framed information under time pressure.

1. Literature review

1.1. To-date versus to-go goal frames

Goal progress is defined as “reduction in the discrepancy to goal attainment” (Fishbach and Dhar, 2008, p. 619). The self-regulation literature explains that goal progress is a main driver of goal pursuit. That is, goal seekers need to feel that they are moving forward from their actual state to their desired end state (Carver and Scheier, 1998; Fishbach and Dhar, 2005; Koo and Fishbach, 2008). When they perceive progress, they are motivated to adhere to the goal (e.g., Fishbach and Dhar, 2005; Kim et al., 2019; Wallace and Etkin, 2018). The goal gradient hypothesis explains that more highly motivated seekers will work harder the closer they get to the goal (Hull, 1932; Kim et al., 2019;

Kivetz et al., 2006; Liberman and Forster, 2012). The hypothesis was tested and validated in a study of a customer loyalty program showing that when customers were offered a free coffee after buying ten, they made more coffee purchases as they came closer to the reward (Kivetz et al., 2006). By the same logic, consumers who required 10 car wash purchases for a free car wash with two stamps already endowed (20% progress) exhibit greater motivation to reach their goal, than those who required only 8 car wash purchases with no stamps (0% progress; Nunes and Drèze, 2006).

To indicate goal progress, marketers can use “to-date” frames indicating what has been accomplished or “to-go” frames indicating how much is yet to be done (Koo and Fishbach, 2008). We build on the self-regulation literature (Fishbach et al., 2009; Koo and Fishbach, 2008; 2012) indicating that when goal seekers have relatively high initial commitment,¹ to-go framing will better motivate them to adhere to their goal. In contrast, when they have relatively low or uncertain initial commitment, to-date framing is best. That is, greater commitment generates higher perceived goal importance and emphasizes the need for immediate, goal-directed actions (Koo and Fishbach, 2012). In support, a study of tourism advertising revealed that to-go framing was more effective for motivating individuals who had reached 80% of the goal (i.e., high progress), but to-date framing was more effective for those who had reached 20% of the goal (i.e., low progress) (Min et al., 2013).

We extend the prior work by identifying time urgency as a new moderator that changes the dynamics between goal progress framing and progress level. Many goals are defined by time (e.g., walk 10,000 steps a day), pursued over time (e.g., lose ten pounds before a wedding), and constrained over time (e.g., cut sleep time to add exercise time) (Etkin, 2019). Considering that time and goals are closely related, we argue that impending deadlines are essential for goal frames to interact with goal progress (Min et al., 2013). In other words, time-limited reward offers will motivate customers to respond to mobile reward apps.

1.2. The role of time urgency

Time urgency, often called “time pressure,” indicates that time is scarce (Landy et al., 1991), and is known to impact judgment and decision making (Dhar and Nowlis, 1999; Mogilner et al., 2008; Rastegary and Landy, 1993). As task completion becomes more urgent, the task may appear more important (Cialdini, 2009). Thus, limited time frames heighten attention to tasks, escalate motivation to process subsequent information, and prompt task completion (Suri and Monroe, 2003; Zhu et al., 2018), perhaps explaining why deadline-setting is a strategy for ensuring that tasks are completed (Waller et al., 2001).

Similar to a marathon runner who uses the finish line as a reference point to determine the most strategic pace (Markle et al., 2018), consumers may use promotion expiration dates to judge how much effort to put into shopping. The principle of diminishing sensitivity explains the phenomenon: value function becomes greater near the reference point (Health et al., 1999; Thaler, 1985). This line of reasoning has implications for the relationship between goal progress and motivation. Wallace and Etkin (2018) found that accumulating goal progress increased subsequent motivation in the specific goal condition because it should make the value function steeper closer to the focal reference point. Thus, when individuals consider the distance remaining to the goal as a reference point, the goal feels closer as they near the deadline. In other words, as deadlines loom, action becomes more urgent.

Marketers intuitively understand and utilize the resource-scarcity principle (Mukherjee and Lee, 2016; Yoon and Vargas, 2010, 2011). Previous findings on scarcity show that a promotional offer with a time restriction exerted a profound impact on purchase intention (Aggarwal et al., 2011) and increased coupon redemption near the expiration date

¹ High/low commitment can be intrinsic (e.g., level of individual motivation) or extrinsic (e.g., level of goal progress).

(Inman and McAlister, 1994). Indeed, time restrictions featured in scarcity appeal trigger positive inferences about the product (Mukherjee and Lee, 2016). Extending this line of research into the current context, we proposed that creating temporal scarcity in marketing promotions (e.g., “Call now,” “Sale ends tomorrow”) could expedite goal pursuit activity. Near deadlines create a sense of urgency and pressure to buy quickly (e.g., Aggarwal et al., 2011; Spears, 2001), increase willingness to buy, and lower intention to search further for deals (Aggarwal and Vaidyanathan, 2003). Deadlines are also effective in other contexts, such as online auctions (Ariely et al., 2005; Kim et al., 2019).

In the next section, we integrate theoretical perspectives regarding the diminishing sensitivity of time perception (e.g., Health et al., 1999; Thaler, 1985) and empirical evidence of the to-go versus to-date framing effect (e.g., Koo and Fishbach, 2012; Min et al., 2013) and hypothesize that time urgency modifies previous findings on to-go versus to-date framing effect. We propose that an expiration date alters the shape of the value function during reward goal pursuit, and thus changes how goal progress framing affects subsequent motivation to purchase through reward mobile apps.

1.3. Hypotheses

To reiterate, the literature on goal pursuit indicates that to-go framing should be more effective than to-date framing for motivating goal seekers who have sufficiently progressed in their pursuit (e.g., Min et al., 2013). However, we argue that time urgency is necessary because time urgency increases perceived importance of reward goals, leading to our first hypothesis:

H1. When an offer includes an expiration date, a to-go (vs. to-date) framed reward will elicit more positive consumer responses; without an expiration date, to-go or to-date framing will elicit the same responses.

Previous findings about self-regulation (Fishbach and Dhar, 2005; Koo and Fishbach, 2008) suggest that progress monitoring leads to greater goal importance, influencing subsequent motivation. Goal importance is defined as the inherent value and/or importance of achieving a specific goal (Hollenbeck and Williams, 1987). It is also referred to as goal value, which can be experienced as the extent to which people expend effort in pursuing a goal (Zhang et al., 2011). Greater effort implies higher goal value. For example, when consumers invest more effort monitoring their progress toward reward redemption, they are likely to perceive the goal as highly important and valuable (Kim et al., 2019). In a similar vein, a short (vs. long) deadline for reward redemption enhances consumer motivation to pursue incentive offers as the focal goal (Roehm and Roehm, 2011). Following this reasoning, we proposed that the interactive effect of goal progress framing and time urgency would emerge because those with a short expiration date are more likely to relate to goal importance when monitoring their progress to-go (vs. to-date). However, this tendency is less likely to be observed when an expiration date is not imposed. Accordingly, we expected that reward apps that use an explicit expiration date for reward redemption would cause consumers to perceive reward goals as important, in turn eliciting positive responses to mobile reward apps. Therefore, we proposed the following hypothesis:

H2. Perceived goal importance will mediate the interactive effect of goal progress framing and time urgency on consumer responses.

In addition, the effect of goal progress framing might depend on how much progress has been made toward the goal. The small-area hypothesis (Koo and Fishbach, 2012) explains that motivation depends on the relative actions yet to be completed: when goal seekers begin pursuing a goal and have made 20% progress, they will focus more on how much progress is behind them. In contrast, when they have reached the end and have completed 80% of the effort, they will focus on the effort ahead. Consequently, goal seekers will focus on accumulated progress

(remaining progress) when they are less (more) than half-way to the goal.

Building on those findings, we show that perceived time urgency can boost or suppress the small-area effect. That is, when reward programs require purchases by a deadline that expires in the near (distant) future, the small-area effect emerges (disappears). Thus, we hypothesize:

H3a. Under high progress levels, short expiration dates will cause to-go (vs. to-date) framed rewards to elicit more positive consumer responses, but long expiration dates will cause to-date and to-go framings to elicit the same level of responses.

H3b. Under low progress levels, short expiration dates will cause to-date (vs. to-go) framed rewards to elicit more positive consumer responses, but long expiration dates will cause to-date and to-go framings to elicit the same level of responses.

2. Overview of studies

We conducted two experiments to test our conceptualization. In Study 1, we explored the interaction effect between goal progress framing and time urgency on consumer responses (H1) and investigated whether perceived goal importance mediated the effect (H2). In Study 2, we examined a boundary condition for the interaction effect by identifying initial progress level as the second moderator (H3). To measure the multi-faceted aspects of consumer responses, we used three different dependent measures: purchase intention (Study 1), attitude toward the mobile reward app (Study 2), and attitude toward the brand (Study 2).

3. Study 1

In Study 1, we used a mobile reward app for Target to examine responses to goal progress frames when paired with different urgency levels. We also explored the underlying mechanism for the observed effect. The study was a 2 (goal progress framing: to-date vs. to-go) x 2 (time urgency: urgent vs. control) between-subjects design.

3.1. Method

3.1.1. Participants and procedure

We recruited 138 undergraduate students from a northeastern U.S. university to participate in a lab experiment in exchange for course credit; 61.6% men, mean age 19.9. When participants arrived at the lab, they read about a fictitious mobile reward app for Target and were then randomly assigned to view one of four stimulus conditions (Appendix A). The to-date frame/urgency, to-date frame/non-urgency, to-go frame/urgency, and to-go frame/non-urgency conditions were depicted as circle progress bars resembling the actual Target mobile app. Participants then completed the dependent measures.

3.1.2. Manipulations

To-date framing stated: “You’ve earned 3500 points so far to get 5% off your entire purchase.” To-go framing stated: “You need to earn 1500 more points to get 5% off your entire purchase.” To induce a sense of time urgency, the app had a countdown timer. In the urgent condition, the timer read: “Your chance to get 1500 bonus points with Target gift card purchases expires in 1 h 26 min 1 s” In the non-urgent condition, the app had no countdown timer: “Your chance to get 1500 bonus points with Target gift card purchases does not expire as long as your account is open.”

3.1.3. Measures

For a dependent measure, participants indicated their likelihood of shopping at Target on a 7-point scale anchored with *unlikely/likely*, *impossible/possible*, and *improbable/probable* (Baek and Yoon, 2017), averaged to form an index for purchase intentions ($\alpha = .94$). They also answered two questions—How important is it to pursue the reward

goal? How meaningful is it to pursue the reward goal?—on a 7-point scale (1 = *not at all*, 7 = *extremely*), averaged to form an index for perceived goal importance ($\alpha = .91$). Next, participants reported their focus on mobile app information for a manipulation check of goal progress frame using 7-point semantic differential scale items anchored with *what has been accomplished/what has yet to be accomplished*, *what has been done/what remains to be done*, and *monitoring accumulated progress/monitoring remaining progress* ($\alpha = .94$). As a manipulation check, we assessed how much the countdown timer induced perceived time urgency with a 7-point scale anchored with *not urgent/very urgent*.

Finally, participants responded to demographic questions, brand familiarity, previous reward app usage experience, and an open-ended

question to check demand characteristics (“What do you think was the purpose of this study?”). Brand familiarity and previous reward app usage experience were not significantly different across experimental conditions. No participants correctly guessed our research hypotheses. Thus, we discuss those variables no further.

3.2. Results

3.2.1. Manipulation checks

As expected, participants judged that to-date framing was focused on accumulated progress and to-go framing emphasized remaining progress ($M_{\text{to-date frame}} = 3.51$ versus $M_{\text{to-go frame}} = 4.59$; $t = 3.41, p < .001$).

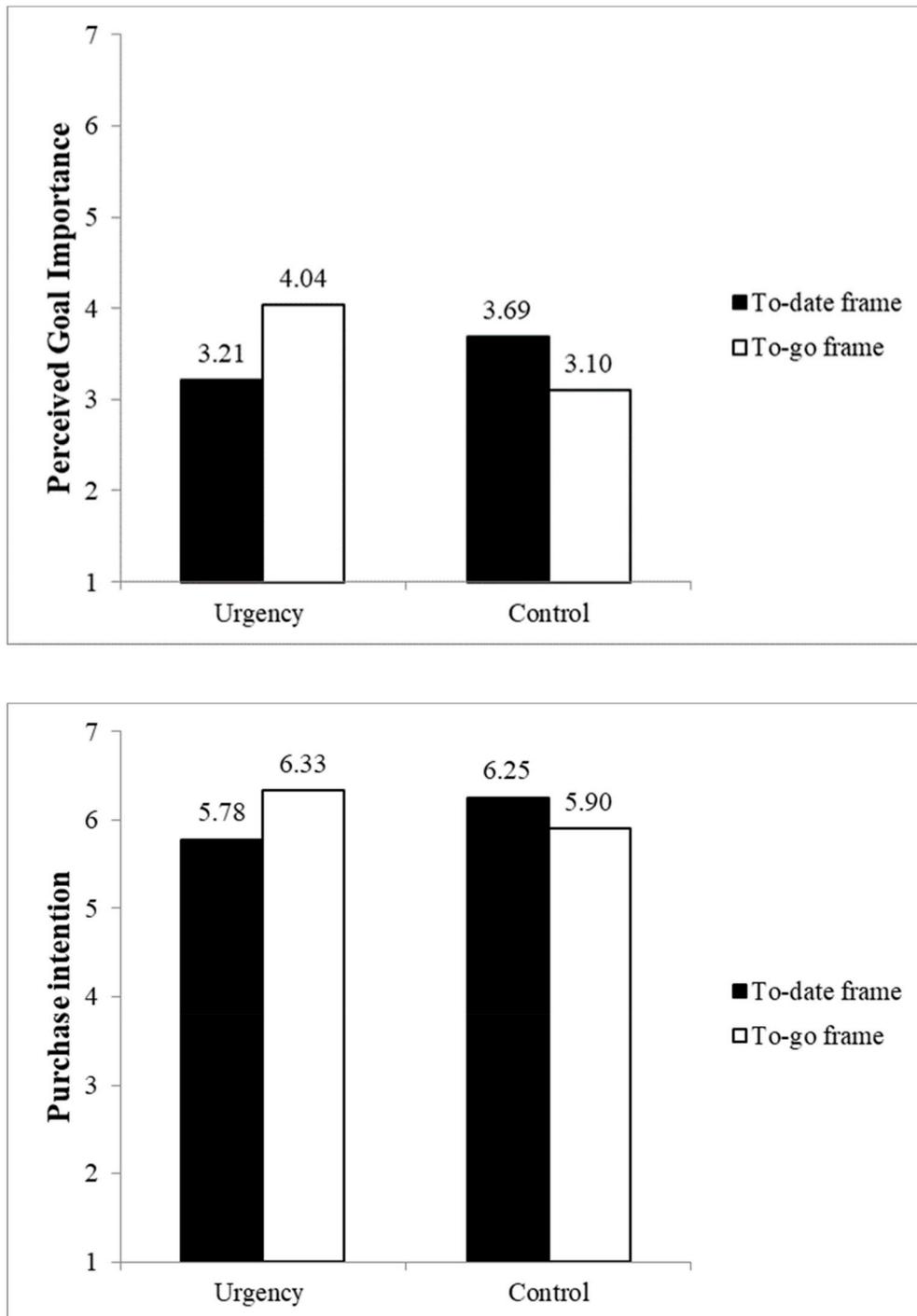


Fig. 1. Study 1 results: Effect of goal progress frame and time urgency on perceived goal importance and purchase intention.

Similarly, they rated the time-urgent condition to be more urgent than the control condition ($M_{\text{time-urgency}} = 5.54$ versus $M_{\text{control}} = 3.54$; $t = 6.81, p < .001$). Thus, the manipulation checks for goal progress frame and time urgency were successful.

3.2.2. Perceived goal importance

A 2 (goal progress frame: to-date vs. to-go) x 2 (time urgency: urgent vs. control) ANOVA revealed no main effects of goal progress frame ($F(1, 134) = .20, p = .66$) and time urgency ($F(1, 134) = .75, p = .39$). As anticipated, a significant two-way interaction effect occurred for perceived goal importance ($F(1, 134) = 6.95, p < .01$). As Fig. 1 shows, follow-up contrasts showed that participants in the urgent condition perceived greater goal importance when exposed to a to-go rather than to-date framed message ($M_{\text{to-date frame}} = 3.21$ versus $M_{\text{to-go frame}} = 4.04$; $F(1, 134) = 4.74, p < .05$). In contrast, under the control condition, a to-date rather than to-go message led to greater but statistically insignificant perceived goal importance ($M_{\text{to-date frame}} = 3.69$ versus $M_{\text{to-go frame}} = 3.14$; $F(1, 134) = 2.41, p = .12$).

3.2.3. Purchase intention

A 2 (goal progress frame: to-date vs. to-go) x 2 (time urgency: present vs. control) ANOVA indicated no main effects of goal progress frame ($F(1, 134) = .26, p = .61$) and time urgency ($F(1, 134) = .01, p = .91$). As expected, a significant two-way interaction effect emerged for purchase intention ($F(1, 134) = 5.17, p < .05$). Follow-up contrasts revealed that participants in the urgent condition had stronger purchase intentions when they viewed to-go rather than to-date framing ($M_{\text{to-date frame}} = 5.78$ versus $M_{\text{to-go frame}} = 6.33$; $F(1, 134) = 3.88, p < .05$). However,

under the control condition, no significant difference was seen between to-date and to-go framing ($M_{\text{to-date frame}} = 6.25$ versus $M_{\text{to-go frame}} = 5.90$; $F(1, 134) = 1.56, p = .21$). Altogether, hypothesis 1 was supported.

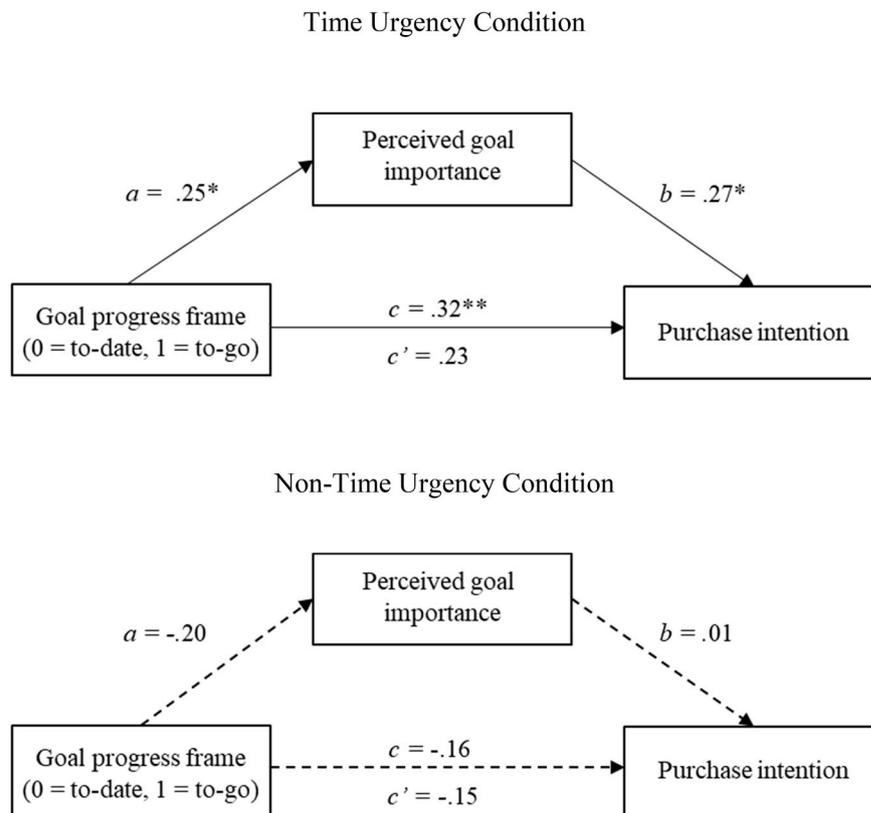
3.2.4. Moderated mediation

We conducted a moderated mediation analysis using model 8 of the PROCESS SPSS macro (Hayes, 2013) to test the conditional indirect effect of goal progress frame on purchase intention through perceived goal importance. As Fig. 2 shows, this analysis with 5,000 bootstrapped samples revealed that within the urgent condition, perceived goal importance significantly mediated the impact of goal progress frame (0 = to-date frame, 1 = to-go frame) on purchase intentions ($B = .67, SE = .28, p < .05, 95\% CI = 0.12$ to 1.23). However, no mediation occurred under the control condition ($B = -.44, SE = 2.78, p = .12, 95\% CI = -.99$ to 0.11).

3.3. Discussion

Study 1 initially supported our proposition that to-go rather than to-date message framing will more effectively increase purchase intentions for participants who perceive time urgency, but that to-go and to-date framing will be equally effective without time urgency. We also clarified that perceived goal importance in the urgent condition but not in the control condition mediated the effect of goal progress frame on purchase intentions.

However, high progress was the only consideration: participants in both to-go and to-date conditions had 3,500 points earned for the 5,000



Note. Path coefficients are standardized betas; path c represents the total effect; path c' represents the direct effect; $*p < .05, **p < .01$.

Fig. 2. Moderated Mediation Model for Study 1, Note. Path coefficients are standardized betas; path c represents the total effect; path c' represents the direct effect; $*p < .05, **p < .01$.

points as the reward goal. That is, they had made 70% progress on the progress wheel. Would we have observed the same results had participants made low progress? We address this question in Study 2.

4. Study 2

In Study 2, we conceptually replicated the findings from Study 1 with three variations. First, we used a fictitious reward app for a university coffee shop. Second, we used different manipulations of goal progress frame and time urgency with different dependent variables—attitudes toward the reward app and the brand—as a proxy for customer loyalty (Chaudhuri, 1999). Third, we identified a boundary condition: we tested whether initial progress level might moderate the interaction observed in Study 1. We used a 2 (goal progress frame: to-date vs. to-go) \times 2 (time urgency: high vs. low) \times 2 (progress level: high vs. low) between-subjects design. The experiment was implemented in a controlled lab setting.

4.1. Method

4.1.1. Participants and procedure

We recruited 188 undergraduate students from a northeastern U.S. university in exchange for course credit; 57.4% men, mean age 19.6. We used the procedure from Study 1, and randomly assigned participants to view one of eight stimulus apps.

4.1.2. Manipulations

Participants evaluated a fictitious mobile reward app for a university coffee shop offering a free coffee drink after shoppers earned ten digital stamps. We manipulated progress level by varying the number of stamps received—eight stamps for high progress and two stamps for low progress. The manipulation of goal progress framing was similar to that in Study 1. Specifically, as Appendix B shows, participants in the to-date framing paired with the high (low) progress condition read: “You have collected 8 (2) stamps for a free coffee.” Those in the to-go framing paired with high (low) progress condition read: “You need 2 (8) more stamps for a free drink.” To manipulate time urgency, we used a countdown timer similar to Study 1. The high-urgent condition read, “Valid until the countdown timer expires—1 day 19 min 15 s” The low-urgent condition read, “Valid until the countdown timer expires—95 days 1 h 59 min 41 s”

4.1.3. Measures

After participants viewed the app, they reported their attitudes toward the app and the brand on 7-point semantic differential items anchored with *bad/good*, *unfavorable/favorable*, and *unpleasant/pleasant* (Bellman et al., 2011), separately averaged to form an index for app attitude ($\alpha = .98$) and brand attitude ($\alpha = .97$). Next, as in Study 1, they completed the manipulation check items for goal progress framing and time urgency. Finally, participants answered demographic questions and reported their perceptions regarding the purpose of the study to gauge demand characteristics. All participants failed to correctly guess our hypotheses.

4.2. Results

4.2.1. Manipulation checks

Participants judged to-date framing as highlighting accumulated progress and to-go framing as emphasizing remaining progress ($M_{\text{to-date frame}} = 3.86$ versus $M_{\text{to-go frame}} = 4.59$; $t = 2.72$, $p < .01$). Similarly, they perceived the high time-urgent condition as more urgent than the low time-urgent condition ($M_{\text{high time-urgency}} = 5.81$ versus $M_{\text{low time-urgency}} = 3.56$; $t = 8.46$, $p < .001$). Accordingly, the goal progress framing and time urgency manipulations were successful.

4.2.2. Mobile Reward App Attitude

We conducted a 2 (goal progress framing: to-date vs. to-go) \times 2 (time

urgency: high vs. low) \times 2 (progress level: high vs. low) ANCOVA on attitude toward the reward mobile app as the dependent variable. The frequency of drinking coffee served as a covariate because it significantly influenced attitudes toward the app ($F(1, 179) = 33.28$, $p < .001$).

Progress level had a main effect ($M_{\text{high progress level}} = 5.88$ versus $M_{\text{low progress level}} = 5.51$, $F(1, 179) = 3.87$, $p < .05$), suggesting that participants had more favorable attitudes toward the app when they were presented with a high level of progress (8 stamps for a free coffee), rather than a low level of progress (2 stamps for a free coffee). However, no other main effects of goal progress frame ($F(1, 179) = .03$, $p = .87$) and time urgency ($F(1, 179) = .01$, $p = .96$) or two-way interactions were significant (goal progress framing \times time urgency, $F(1, 179) = .04$, $p = .84$; goal progress framing \times progress level, $F(1, 179) = 1.52$, $p = .22$; time urgency \times progress level, $F(1, 179) = .19$, $p = .67$). As anticipated, a significant three-way interaction emerged for attitude toward the app ($F(1, 179) = 8.38$, $p < .01$). We performed two separate analyses to further examine the two-way interactions between goal progress framing and time urgency within the high and low progress conditions.

Under high progress levels, a marginally significant two-way interaction occurred between goal progress framing and time urgency ($F(1, 86) = 3.51$, $p = .06$). As Fig. 3 shows, follow-up contrasts showed that participants in the high time-urgent condition had more favorable attitudes toward the mobile reward app when presented with to-go rather than to-date framing ($M_{\text{to-date frame}} = 5.50$ versus $M_{\text{to-go frame}} = 6.34$; $F(1, 86) = 3.85$, $p < .05$). Participants in the low time-urgent condition had equally favorable app attitudes when presented with to-go and to-date framing ($M_{\text{to-date frame}} = 5.96$ versus $M_{\text{to-go frame}} = 5.71$; $F(1, 86) = .41$, $p = .52$).

Under low progress levels, a significant two-way interaction occurred between goal progress framing and time urgency ($F(1, 92) = 4.92$, $p < .05$). Follow-up contrasts indicated that participants in the high urgent condition had more favorable attitudes toward the app when they were presented with to-date rather than to-go framing ($M_{\text{to-date frame}} = 5.87$ versus $M_{\text{to-go frame}} = 5.02$; $F(1, 92) = 4.92$, $p < .05$). Participants in the low urgent condition had equally favorable attitudes toward the app when they were presented with to-date and to-go framing ($M_{\text{to-date frame}} = 5.38$ versus $M_{\text{to-go frame}} = 5.74$; $F(1, 92) = .39$, $p = .36$).

4.2.3. Brand attitude

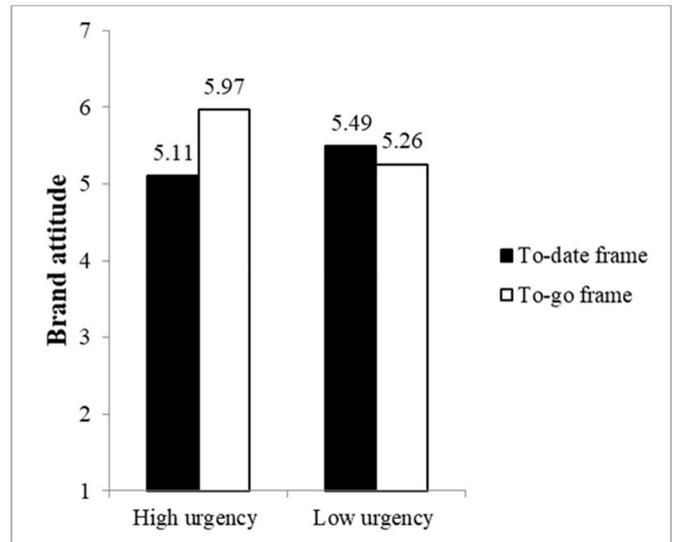
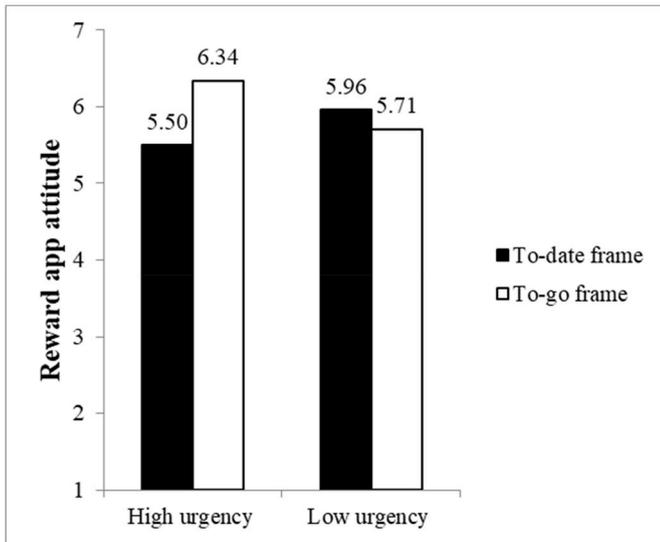
We conducted a 2 (goal progress framing: to-date vs. to-go) \times 2 (time urgency: high vs. low) \times 2 (progress level: high vs. low) ANCOVA on brand attitude, with coffee drink frequency as a covariate. Coffee drink frequency significantly influenced brand attitude ($F(1, 179) = 67.73$, $p < .001$). No main effects occurred for goal progress framing ($F(1, 179) = .36$, $p = .55$), time urgency ($F(1, 179) = .84$, $p = .36$), and progress level ($F(1, 179) = .15$, $p = .70$). No other two-way interaction effects were observed (goal progress framing \times time urgency, $F(1, 179) = .24$, $p = .62$; time urgency \times progress level, $F(1, 179) = 3.10$, $p = .08$) except the interaction effect of goal progress framing and progress level ($F(1, 179) = 4.96$, $p < .05$). As predicted, brand attitude showed a significant three-way interaction ($F(1, 179) = 5.60$, $p < .05$). We conducted two separate analyses to better understand the interaction between goal progress frame and time urgency under high and low progress conditions.

Under high progress level, goal progress framing and time urgency significantly interacted for brand attitude ($F(1, 86) = 4.01$, $p < .05$). As Fig. 4 shows, follow-up contrasts revealed that participants in the high urgent condition had more favorable brand attitudes when presented with to-go rather than to-date framing ($M_{\text{to-date frame}} = 5.11$ versus $M_{\text{to-go frame}} = 5.97$; $F(1, 86) = 4.61$, $p < .05$). Participants in the low urgent condition had equal brand attitudes when presented with to-go and to-date framing ($M_{\text{to-date frame}} = 5.49$ versus $M_{\text{to-go frame}} = 5.26$; $F(1, 86) = .39$, $p = .53$).

Under low progress level, goal progress framing failed to interact with time urgency ($F(1, 92) = 1.73$, $p = .19$). We further performed post

High Progress

High Progress



Low Progress

Low Progress

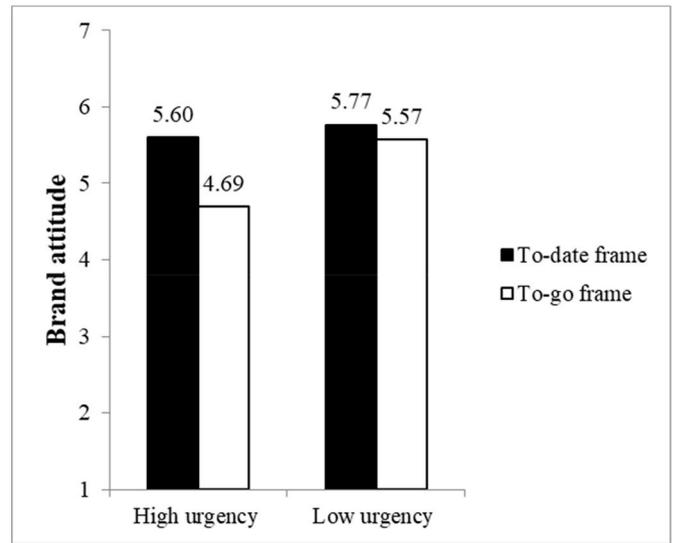
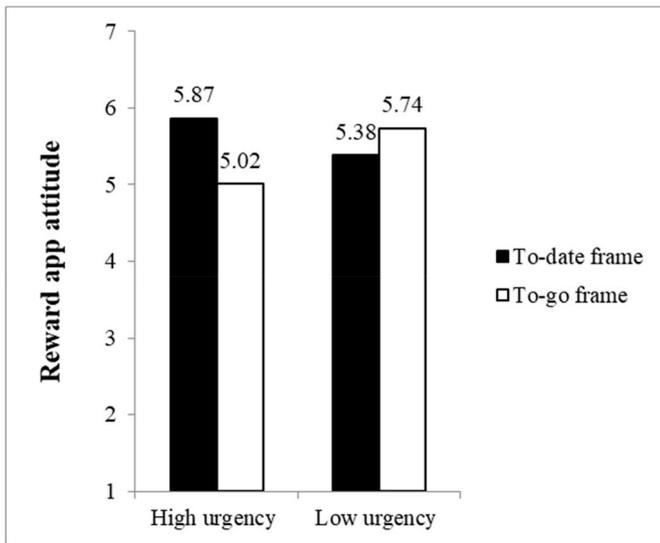


Fig. 3. Study 2 results: Effect of goal progress frame, time urgency, and progress level on reward app attitude.

Fig. 4. Study 2 results: Effect of goal progress frame, time urgency, and progress level on brand attitude.

hoc comparisons to clarify predicted effects (Keppel, 1991) and found that participants in the high urgent condition had more favorable brand attitudes when presented with to-date rather than to-go framing ($M_{\text{to-date frame}} = 5.60$ versus $M_{\text{to-go frame}} = 4.69$; $F(1, 92) = 5.76$, $p < .05$). In the low urgent condition, goal progress frame had the same effect for to-date and to-go framing ($M_{\text{to-date frame}} = 5.77$ versus $M_{\text{to-go frame}} = 5.57$; $F(1, 92) = .27$, $p = .60$). Taken together, hypotheses 2a and 2b were supported.

4.3. Discussion

Study 2 replicated Study 1. Under high progress levels, a short expiration date imposed time urgency, making a to-go framing produce more favorable attitudes toward the mobile reward app and brand. Interestingly, a mirror effect occurred under low progress levels: time urgency made a to-date framing produce more favorable attitudes toward the app and brand. A long expiration date produced no difference

between to-go and to-date framings, under both high and low progress. The findings align with our overall conceptualization that time-urgency determines whether progress frame and progress level have joint effects.

5. General discussion

Our findings from two studies support our overall theorization. Aligned with previous literature (e.g., Koo and Fishbach, 2012; Min et al., 2013), we find that goal progress framing interacts with progress amount to influence responses to brands and mobile reward apps. Furthermore, we uniquely demonstrate that the interaction depends on how urgent consumers feel about reaching the reward. In other words, the matching effect of to-go (to-date) framing with high (low) progress must reach a threshold, and perceived time urgency is the trigger. Specifically, in Study 1, we show that when a Target mobile app reward program has an expiration deadline, to-go framing focused on the remaining effort strengthens purchase intentions. In a non-urgent, no

deadline condition, framing type no longer matters. Additionally, perceived goal importance mediates the effect. In Study 2, the low progress condition had a mirror effect for a coffee house app. As in Study 1, to-go was more persuasive for individuals who had high initial progress by earning eight digital stamps in the urgent condition. However, individuals who had low initial progress by earning only two digital stamps in the urgent condition were more persuaded by to-date frames.

Our research has several theoretical implications. First, we contribute to the literature on goal progress and motivation, which has identified various moderating factors that facilitate or hinder the progress effect such as autonomous motivation (Koestner et al., 2008), goal commitment (Koo and Fishbach, 2008), mood (Fishbach and Labroo, 2007), goal specificity (Wallace and Etkin, 2018), and goal endowment (Nunes and Drèze, 2006). However, few researchers have systematically investigated time as a constraint on goal pursuit. Our findings fill this gap by identifying time urgency as a new moderator that deserves more research attention in terms of goal theory recognizing that temporal boundedness significantly influences goal pursuit (Etkin, 2019). For example, time constrains goals to walk 10,000 steps, whether in a day, a week, or a month. To our best knowledge, we are the first to demonstrate the effect of progress level and progress frame under limited time. Importantly, we extend Koo and Fishbach, 2008, 2012) by combining progress framing, progress level, and time urgency as a third moderator that reshapes the effect. Our work goes beyond finding that commitment increases as goals loom closer. Instead, we reveal boundary conditions that activate, mitigate, and reverse the pursuit of rewards.

Second, we provide a more nuanced approach to progress monitoring by highlighting perceived goal importance as the mechanism underlying the effect of progress framing and time urgency. By integrating the dynamics of self-regulation (Fishbach and Dhar, 2005; Koo and Fishbach, 2008) and diminishing sensitivity (Health et al., 1999; Thaler, 1985), we suggest that consumers might use limited time as a reference point for choosing their commitment to a mobile reward app. When consumers are faced with time urgency, they might infer that reward goals are more important. Consequently, they will focus on the remaining effort needed. Finally, our findings enrich the growing marketing literature on loyalty/reward programs where the focus has been on various characteristics of reward programs, such as target markets and marketing channels, for effects on consumer judgment, satisfaction, and brand loyalty (e.g., Kivetz and Simonson, 2002; Kuester and Benkenstein, 2014; Ryu and Feick, 2007; Sharp and Sharp, 1997). Our research complements prior work by showing that to-go or to-date framing can alter responses to mobile reward apps.

From a practical standpoint, we offer important implications for devising effective mobile app communication strategies. Marketers want to enhance meaningful consumer engagement and satisfaction in mobile

reward apps by rewarding their loyal customers with free food and drink items, invitations to special events and recipe books, as well as exclusive coupons and deals. We suggest that marketers should consider how goal progress framing (to-date versus to-go messaging) will subtly impact brand attitudes and purchase behaviors when developing their mobile loyalty reward apps as a brand engagement platform. Progress feedback systems using to-date and to-go framing could be improved by making use of mobile gamification technology (Högberg et al., 2019), with stronger capabilities for personalized visualization (Bang and Wojdynski, 2016) and augmented reality (Baek et al., 2018). Adding a visual presentation of goal progress (e.g., countdown progress bars) to mobile reward apps can also enhance the effectiveness of to-date and to-go framing on brand attitude and purchase intention. For example, showing an animated graphic on loop for immediate progress feedback might be more effective to improve consumer engagement with mobile reward apps. In such cases, marketers could capitalize on push notifications on their reward apps offering countdown timers to signal urgency.

5.1. Limitations and directions for future research

Our research has some limitations that warrant future research. First, we conducted both studies in a controlled lab setting to maximize control over extraneous factors. Replications in a field setting would increase the robustness of our observations (Rossi et al., 2015). Second, although college student samples are a suitable population for using shopping mobile apps and testing theory (Baek and Yoo, 2018), they might limit the generalizability of our results. Previous findings suggest that the relationship between chronological age and time constraints becomes more salient as individuals age (Strough et al., 2016). An investigation using a non-student adult sample might provide valuable insights into the interplay between goal progress framing and time urgency. Future research is also needed to examine the current research across more representative samples of different mobile app categories (Kim and Baek, 2018; Kim et al., 2016).

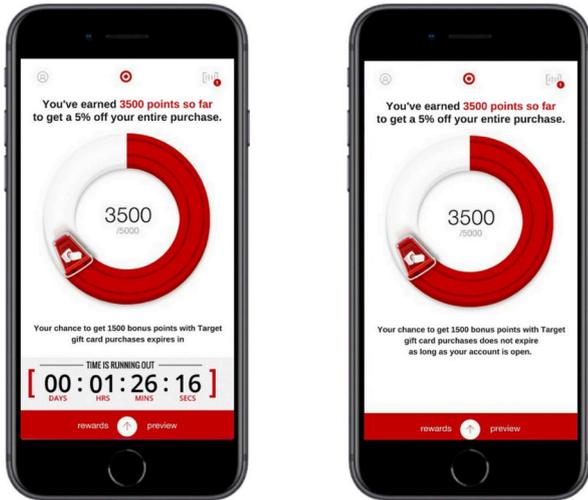
Finally, as previous findings indicate that attitude and behavioral intention both predict future behavior (Ajzen, 1991), we used three different dependent measures across the two studies: purchase intention (Study 1), attitude toward the mobile reward app (Study 2), and attitude toward the brand (Study 2). These constructs are widely used as dependent variables in consumer-retailing research (e.g., Baek et al., 2015; Bellman et al., 2011; Han et al., 2019; Yim et al., 2018; Yoon et al., 2016), yet people often express attitudes that are inconsistent with their behaviors (Hidalgo-Baz et al., 2017). Although we observed convergence in the three measures, scholars should consider simultaneously examining all three variables in a single study.

Appendix A. Supplementary data

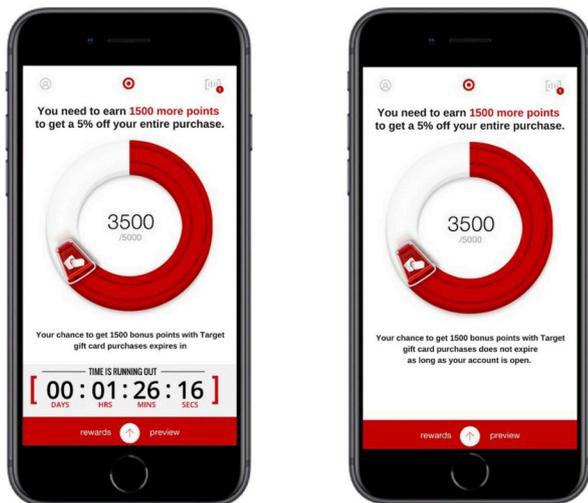
Supplementary data to this article can be found online at <https://doi.org/10.1016/j.jretconser.2020.102046>.

APPENDIX A

Study 1: To-Date Frame/Time Urgency (vs. Control)



Study 1: To-Go Frame/Time Urgency (vs. Control)



APPENDIX B

Study 2: To-Date Frame/Time Urgency (1 day vs. 95 days)/Progress Level (8 vs. 2 Stamps)



Study 2: To-Go Frame/Time Urgency (1 day vs. 95 days)/Progress Level (8 vs. 2 Stamps)



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