

The Mere Deadline Effect: Why More Time Might Sabotage Goal Pursuit

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Contrary to the common belief that having more time facilitates goal pursuit by allowing for more flexibility and fewer restrictions, the current work argues that long deadlines may produce unintended detrimental consequences on goal pursuit. In particular, this research identifies a mere deadline effect, showing that longer versus shorter deadlines, once imposed, lead consumers to infer that the focal goal is more difficult, even when the deadline length results from incidental factors that cannot be meaningfully used to make any other diagnostic inferences about the task itself besides completion frame. Further, these difficulty inferences consequently lead consumers to commit more resources (e.g., time and money). Thus, while long incidental deadlines might be beneficial for essential yet often underestimated aspects of long-term well-being (e.g., when consumers exert more effort to save for college and plan for retirement), the unintended difficulty perception arising from deadline length will sometimes sabotage goal pursuit (e.g., when consumers commit more resources that are beyond their capability, and when elevated resource estimates lead to increased procrastination and higher likelihood of quitting).

Keywords: mere deadline effect, deadlines, goals, procrastination, inference making, time constraints and scarcity

Imagine that Mr. Long and Mr. Short each moved into a townhouse in a recently developed local community at the beginning of the year. The houses are practically identical. As it so happens, both decided to host their annual family reunion at their house this year. In order to find a

date that works for everyone, they each conducted a Doodle poll among all family members. While the date that works best for Mr. Long's entire family is three months from now, the date that works for Mr. Short's family is one month from now. They both plan to clean the house thoroughly by themselves before the reunion, as they have not yet had a chance to do so since they moved in. While both want to begin the cleaning project immediately, they set different deadlines for completing this goal, basing it on their respective family reunion dates. They both need to assess the amount of resources—such as time and money—that they would devote to this cleaning project. Will the difference in the length of the two deadlines impact the level of resources each of them commits? If so, why?

Consider the two goals again—both have supposedly identical current and desired end states. The only difference between the two goals is the deadline, which is imposed by an incidental constraint. This is because, while the family members' availability influences the time frame for project completion, it offers no other diagnostic

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information about the project. Indeed, one cannot meaningfully use the deadline to make inferences about the task—how difficult it is, how much resource is required, and so on. We refer to such constraints as incidental or nondiagnostic, and to deadlines imposed by such constraints as incidental or nondiagnostic deadlines.

Now, how might such incidental deadlines influence resource commitment? A naïve perspective may be that differences in deadlines due to incidental factors should not impact resource commitment. This is because while the family members' availability influences the project timeline, it cannot be meaningfully used to make any other diagnostic inferences about the project.

An alternative hypothesis can also be offered: given that longer incidental deadlines give one more time to prepare, one might consider the focal task as easier and requiring a lower amount of resources. In support of this intuition, prior research has demonstrated that individuals categorize objects associated with distant (vs. near) future events in fewer, broader categories (Liberman, Sagristano, and Trope 2002; Trope and Liberman 2003). Unpacking a complicated task into fewer versus more steps could lead to the inference that the task is easier, which might result in underestimation of resources needed to complete the task (Buehler, Griffin, and Ross 1994).

We propose yet another contrarian hypothesis. We argue (and demonstrate) that longer incidental deadlines increase, rather than decrease, resource commitment. In particular, we propose a mere deadline effect; that is, longer versus shorter incidental deadlines, once imposed, will lead to the inference that the goal is more difficult. These difficulty inferences will then impact resource commitment, such that consumers will commit more resources to goals that have a longer deadline.

A natural question then arises: Why does this occur? We believe the mere deadline effect may occur because of the kinds of associations consumers encounter on a regular basis. Consider difficult tasks, such as a challenging project. Usually, such tasks will require more time as well as other resources to complete. Thus, in many circumstances, a longer deadline may serve as a diagnostic signal of goal difficulty. Consequently, over time consumers learn that deadline length and task difficulty are positively associated. But why might consumers make such inferences when the deadline length is nondiagnostic? This may be due to overgeneralization. Because intuitive correlations and their corresponding naïve theories are often repeated and practiced in circumstances where they are relevant and, thus, functional, they remain activated even in situations where the correspondence is nonfunctional or reversed (Arkes and Ayton 1999; Dai, Wertenbroch, and Brendl 2008; Deval et al. 2013; Hsee, Yang, and Ruan 2015; Labroo and Kim 2009). Accordingly, we suggest that when deadlines are long versus short, consumers may infer that the focal task is more difficult, not only in

situations where deadlines are diagnostic—that is, they meaningfully signal task difficulty—but also in situations where they are not. In other words, deadlines will serve as a basis for making inferences about goal difficulty and will affect subsequent resource commitment, even if they are incidentally imposed due to causes that are clearly unrelated to the difficulty level of the focal task.

Understanding the interplay between incidental deadlines, goal difficulty, and resource commitment is of both theoretical and practical importance. While extant literature primarily treats deadlines as an outcome of factors that are meaningfully connected to the focal task (e.g., assignment due dates set by the instructor or the students themselves after carefully considering the nature of the assignments; Ariely and Wertenbroch 2002; Buehler and Griffin 2003; Solomon and Rothblum 1984), in our daily lives, deadline length frequently results from incidental factors. Consider the introductory example again. Besides the family members' availability, deadlines for preparing for a family reunion may also be imposed by other incidental constraints, such as the schedule of one's favorite catering service. Likewise, the deadlines imposed for planning a wedding, a conference, an exhibition, a picnic, and many other everyday events regularly arise from incidental factors that are not logically interpretable as signals of task difficulty, such as availability of the venue and guests, weather conditions, and market promotions. The list is substantial. Yet extant research is silent on how such incidental deadlines influence consumer perceptions.

The current research makes several contributions. First, we add to the literature on inferential and heuristic decision making by identifying an important instance where consumers overgeneralize intuitive correlations and naïve theories, and delineate the downstream consequences of such overgeneralization on everyday consumer behavior. Second, we contribute to research on deadlines and goals. While extant literature has focused mainly on examining the downstream consequences of deadlines that are meaningfully connected to the focal task, we show how incidental factors affect goal perceptions and resource commitment (and discuss when and why they might sabotage goal pursuit). Further, we identify the underlying process. We demonstrate that consumers use deadlines to make inferences about task difficulty, which then impacts resource commitment. We also provide a nuanced understanding of the phenomenon by demonstrating how two factors—one relating to the task, and the other to the performer—affect this relationship. Together, this not only corroborates our theoretical rationale but also allows us to demarcate theoretically driven boundary conditions for this novel effect.

The remainder of the article is organized as follows. We first review the relevant literature that forms the basis for our prediction and delineate theoretically driven boundary conditions. We then present a series of five experiments

that provide support for the proposed mere deadline effect and test the underlying mechanisms. We conclude with theoretical and practical implications of our findings, noting when and why longer deadlines may produce detrimental (vs. beneficial) consequences.

THEORETICAL BACKGROUND

The word *deadline* originated in the 1860s to refer to a perimeter around a prison (Report of the Secretary of War 1865). From the early 1900s, the word has been used to refer to any line that should not be crossed (Henry 1909). In recent times, however, the word refers more to the time frame given to complete a task (Chicago Daily Tribune 1913), and is used pervasively. Indeed, most of us negotiate our daily activities around deadlines—at work, at home, and in between. Suggestions for setting effective deadlines and meeting them appear in self-help books (Allen 2002; Covey 2013; Horovitz and Ohlsson-Corboz 2007), in mass media (Burnett 2015; Kisel 2013; Korkki 2013), as well as in management training workshops (American Management Association 2017).

Given the important role deadlines play in influencing our lives, they have drawn extensive attention in academic research too. A consistent finding in this literature is that individuals exhibit “planning fallacy”—that is, they underestimate the length of time it takes to complete tasks (Buehler and Griffin 2003; Kahneman and Lovallo 1993). However, it is also not surprising that, when given an option, individuals prefer longer deadlines (Solomon and Rothblum 1984). Admittedly, individuals do sometimes also impose “costly” deadlines. They do so as a self-control device in tasks where procrastination can lower performance (Ariely and Wertenbroch 2002). In spite of a rich body of literature, previous research has focused primarily on examining diagnostic deadlines—deadlines that could be used to make meaningful inferences about a preset goal. The role of incidental deadlines has not been investigated. Building upon several distinct streams of research, we elucidate how and why consumers might infer the difficulty of a goal from the length of an incidental deadline, and then use the inferred goal difficulty as a guide for deciding their level of resource commitment. In the next few sections we define incidental deadlines, followed by how such deadlines might affect goal difficulty perception and resource commitment. We conclude by delineating two boundary conditions, namely task type (defined vs. less defined) and individual differences in prior task knowledge (low vs. high).

Incidental Deadlines

While extant literature primarily treats deadlines as an outcome of factors that are meaningfully connected to the focal task (e.g., assignment due dates set by the instructor

or the students themselves; Ariely and Wertenbroch 2002; Buehler and Griffin 2003; Solomon and Rothblum 1984), deadline length frequently results from incidental factors. As noted earlier, deadlines for planning events (e.g., a wedding) or working on personal or professional projects or tasks can be influenced by many different factors. These factors could range from issues relating to personnel (e.g., some key guests may not be available), location (e.g., a historic building, church, hotel, museum, or park may not be available), and context-specific factors such as the weather (e.g., weather may dictate when an outdoor event is planned) to opportunistic market-driven factors (e.g., better deals may be available at certain times of the year that may dictate schedule). We refer to these factors as incidental because they offer no other diagnostic information about the task. Indeed, one cannot meaningfully use the deadline to evaluate the task—how difficult it is, how much resource is required, and so on. We refer to deadlines imposed by such nondiagnostic constraints as incidental deadlines.

An important question might be whether consumers use incidental deadlines to make inferences. Indeed, research on inference making has shown that consumers often rely on readily accessible cues in their immediate environments to make inferences (Broniarczyk and Alba 1994; Kardes, Posavac, and Cronley 2004). Due to limited processing capacity, consumers are frequently uncertain about their own preferences and the requirements of a given task or goal (Bettman, Luce, and Payne 1998; Slovic 1995), and often make inferences and construct meanings based on salient, yet nondiagnostic, information available in the local decision context (Kardes et al. 2004). For example, Ariely, Loewenstein, and Prelec (2003) show that consumers rely on numerical estimates that are salient in the decision context but unrelated to the valuation of the product. More germane to our research, consumers often make inferences about the characteristics of a task or a goal from salient contextual cues, and such inferences consequently affect their goal pursuit. For example, task deadlines categorized in a like-the-present category (e.g., December XX of the current calendar year) versus an unlike-the-present category (e.g., January XX of the next calendar year) lead consumers to infer a stronger implementation tendency, which results in a greater likelihood of task initiation (Tu and Soman 2014). Together, these findings demonstrate that consumers often rely on salient, albeit nondiagnostic, contextual cues to make inferences. Next, we discuss why incidental deadlines might be used to make inferences about goal difficulty.

The Mere Deadline Effect

Past research suggests that constraints draw attention (Berlyne 1969; Mullainathan and Shafir 2013; Pribram and McGuinness 1975; Roux, Goldsmith, and Bonezzi 2015).

For example, research on activation suggests that attention is typically drawn to inputs that are constrained and limited (Berlyne 1969; Pribram and McGuinness 1975). Mullainathan and Shafir (2013) suggest that resource constraints yield a “focus dividend”; this occurs because inputs associated with constraints impose themselves on us, capturing our attention above all else. Given that incidental deadlines are essentially an imposed constraint requiring one to complete a task within a specified time window, they should emerge as a salient cue in the local decision-making environment. Thus, we expect consumers to rely on incidental deadlines to make inferences about the focal goal. But what might these inferences be? These inferences may be dependent on the existing associations formed between deadline length and task difficulty.

Difficult goals normally require longer time to complete. As a result, long deadlines are often set for more difficult tasks. For example, managers often set shorter due dates for easier projects and relatively longer due dates for harder and more challenging assignments. Likewise, while sending manuscripts to journals for publication consideration, researchers may self-impose shorter deadlines for straightforward minor revisions, but may plan a longer turnaround time for riskier major revisions. Because longer deadlines serve as a meaningful signal of task difficulty in these situations and others alike, over time consumers may learn that deadline length and goal difficulty are positively associated. Furthermore, prior research on overgeneralization and naïve theories suggests that while intuitive correlations are often practiced and learned in situations where they are functional, they may continue to be used in situations where they are not applicable (Arkes and Ayton 1999; Hsee et al. 2015), or even where the correspondence is reversed (Dai et al. 2008; Labroo and Kim 2009). For instance, while it is easy to understand why the value of an object might increase when it is scarce (Brock 1968), research suggests that consumers also make the inverse association: they infer scarcity from value (Dai et al. 2008).

In accordance with these lines of reasoning, we expect that a long versus short incidental deadline will lead consumers to infer that the focal task is more difficult, even when the deadline cannot be meaningfully used to make such an inference. Further, because accomplishing a more difficult goal frequently entails devoting more time, money, and other resources, we expect that the increased difficulty perception arising from longer incidental deadlines will lead individuals to commit more resources to a preset goal.

We refer to the aforescribed effects of incidental deadlines on difficulty perception and resource commitment as the mere deadline effect. These predictions are also consistent with prior work suggesting that inference making often leads individuals to generate additional meaning than is explicitly provided in the decision context (Dick, Chakravarti, and Biehal 1990; Kardes et al. 2004).

H1a: A long versus short incidental deadline of a preset goal will increase the amount of resources committed to the goal.

H1b: A long versus short incidental deadline of a preset goal will increase perceived goal difficulty.

H2: The impact of an incidental deadline length on resource commitment will be mediated by perceived goal difficulty.

It may be important to differentiate our proposed difficulty-based inference-making account from alternative accounts based on construal level theory. Construal level theory suggests that distant versus near future events (in this case, tasks accompanied by longer vs. shorter incidental deadlines) should activate more abstract mental representations. Consequently, a longer incidental deadline might lead one to categorize a preset goal into fewer, broader categories (Liberman et al. 2002; Trope and Liberman 2003). Given that unpacking a complicated task into fewer versus more steps often leads to the inference that the task is easier and therefore results in underestimation of resources needed to complete the task (Buehler et al. 1994), a longer incidental deadline might decrease, rather than increase, difficulty perception and resource commitment. Construal level theory may also influence inferences via a different route. Goals that are construed at a higher (i.e., abstract) level might be perceived as being more important, and may therefore lead to a higher level of resource commitment. While our predictions directly contradict the first possibility (as our predictions are opposite), the importance-based account could potentially explain the proposed mere deadline effect (i.e., why longer deadlines lead to an increase in resource commitment). We therefore subject this explanation to an empirical test. Our findings suggest that not only does perceived goal importance not differ as a function of deadline length, but it also does not mediate the relationship between deadline length and resource commitment, thus effectively ruling this out as an alternate explanation.

The Mere Deadline Effect and the Role of Task Type

Our fundamental thesis is that longer incidental deadlines increase resource commitment toward a preset goal because the deadline leads to the inference that the focal task is more difficult. Our thesis rests on the assumption that tasks lend themselves to this inference and that individuals make such inferences from tasks. We further posit that not all tasks will be subject to such inferences to the same extent—some tasks, such as less defined (vs. defined) tasks, will be more amenable to such inferences. While less defined tasks do not have definite solutions, defined tasks have rather clear solutions and clear procedures for arriving at that solution (Duncker 1945). Consider an illustrative example. Conducting a strengths-weaknesses-opportunities-threats (SWOT) analysis—a common

approach used to study the value of ideas, projects, or businesses—would be a less defined task. This is because there is no one definitive solution and also no clear procedures. In contrast, reporting statistical results from a survey would be a defined task. This is because it has one definitive solution and a clear procedure for arriving at that solution.

Now if the mere deadline effect is indeed driven by the perceived task difficulty inferred from the length of the deadline, then a defined task with a clear solution should attenuate the mere deadline effect. This is because the nature of this task leaves little room for inferring goal difficulty from the deadline length, which should then ameliorate its effects on resource commitment. Conversely, when the focal task is less defined, by definition, the task does not have a certain and definite solution. In such instances, there is more room for variation in inferring difficulty. Therefore, a long versus short incidental deadline should increase perceived goal difficulty and subsequently increase resource commitment (e.g., the amount of time devoted). Therefore, we hypothesize that:

H3: Task type will moderate the impact of incidental deadline length on resource commitment. More specifically, while a long versus short incidental deadline will increase resource commitment for tasks with less defined solutions, no such difference will emerge for tasks with defined solutions.

The Mere Deadline Effect and the Role of Prior Knowledge

Just as tasks differ in their ability to induce differential inferences, individuals also may differ in terms of which cues they use to make inferences. One individual difference variable that may affect which cue is used is prior knowledge. Prior knowledge may influence judgments of which cue is more diagnostic in the decision-making context, and may therefore influence which cue is utilized. Indeed, consumers are less likely to rely on information when it is judged as being nondiagnostic (Feldman and Lynch 1988). In our contexts, the imposed deadlines are incidental and hence are nondiagnostic of actual goal difficulty. Consider the introductory example, for instance. Obviously, an incidental deadline resulting from the availability of family members is not a diagnostic indicator of how difficult it is to clean one's own house. We posit that those with *lower knowledge* in the focal task domain, such as those who do not often clean homes by themselves, may rely more on the intuitive association between deadline length and task difficulty to make inferences, as they do not possess the ability to process task-relevant information. Thus, these individuals are likely to infer greater difficulty when the deadline length is longer. In contrast, individuals with *higher knowledge* in the task domain, such as those who clean their homes often, are more likely to rely on

more diagnostic difficulty signals, such as the number and size of the rooms, to infer goal difficulty. Thus, these individuals are less likely to use nondiagnostic signals, such as availability of their family members, to judge how difficult it is to clean their newly bought townhouse. Therefore, high prior knowledge might serve as a boundary condition for our proposed mere deadline effect.

Notably, prior literature alludes to another possibility regarding what happens for the higher-knowledge group, which would lead to a quadratic pattern of effects. More specifically, consumers with both low and high prior knowledge levels might be more subject to the influences of incidental, nondiagnostic cues than consumers with a moderate level of prior knowledge. This occurs because consumers with moderate knowledge have both the ability and motivation to process the currently available task information and therefore rely to a lesser degree on prior knowledge structures, whereas the low-knowledge consumers do not possess the ability to process current task information and the high-knowledge consumers do not have the motivation to do so (Bettman and Park 1980; Rao and Monroe 1988). Thus, longer incidental deadlines might increase resource commitment for the low- and high-knowledge groups but not for the moderate-knowledge group. We will empirically explore which of the two potential moderation patterns (i.e., a simple attenuation pattern at the higher knowledge level vs. a quadratic effect of knowledge level) might emerge in the context we study and then discuss boundary conditions for the different patterns in the General Discussion.

H4: Prior knowledge will moderate the impact of incidental deadline length on resource commitment.

We investigate how the length of an incidental deadline imposed for completing a preset goal influences the amount of resources committed to the goal in a series of five experiments. Experiments 1 and 2 demonstrate the basic mere deadline effect: longer incidental deadlines increase planned and actual resource commitment, respectively. Experiments 3 and 4 provide process insights by showing that perceived goal difficulty mediates the relationship between deadline length and resource commitment, and that these inferential effects of deadline length are moderated by task type. Finally, experiment 5 explores whether a higher level of prior knowledge in the focal task domain serves as a boundary condition for the mere deadline effect.

EXPERIMENT 1: DEMONSTRATION OF THE MERE DEADLINE EFFECT ON PLANNED RESOURCE COMMITMENT

The objective of experiment 1 is to provide support for the proposed mere deadline effect that a long versus short

incidental deadline of a preset goal increases the amount of resources committed to the goal (hypothesis 1a). We used a tax return scenario where we manipulated deadline length by varying the arrival date of participants' lost W-2 form. Participants indicated how much money they planned to spend on the preparation of their tax return. We predicted that the longer the incidental deadline, the more money participants would commit to their tax return.

Methods

One hundred nine students from a North American university (70 females; $M_{\text{age}} = 32.39$, $SD = 12.17$) participated in a short survey and were randomly assigned to one of two incidental deadlines: long or short. All participants were presented with the same tax return scenario, and were asked to imagine that they would be filing their tax return independently (i.e., they would not be claiming dependents).

All participants then learned that their W-2 form was lost, but they received it today. In the long (short) incidental deadline conditions, they were further told that the federal tax filing deadline was eight (two) weeks away. All participants were then presented with more specifics of the tax return case, indicating an annual income of \$60,000 along with information about deductions that they might be able to claim, including \$2,500 on medical expenses, \$750 on charity donations, \$4,500 on real estate taxes, \$1,500 on moving expenses, and \$1,750 on student loan interest.

Participants then responded to several questions, including how much money (in US dollars) they plan to spend on completing their tax return, which served as our main dependent variable, and how they would file the tax return (print out the forms and file via mail, use tax preparation software and file online, or use a tax preparation company). Finally, they indicated their age, gender, marital status, and income level.

Results and Discussion

On average, participants committed to spending \$48.93 ($SD = \46.83) on the tax return. To investigate the impact of deadline length on the amount of resources committed, we ran a regression on the total amount of money they planned to spend. We log-transformed the raw dollar amounts to obtain homogeneity in the error variance. As the natural log transformation requires a positive argument, we added a small amount (.01) to the zero values before the log transformation. We regressed this dependent variable on our main independent variable, deadline length. We report untransformed means for ease of understanding. We also included filing format, age, gender, marital status, and income as covariates in our analyses to control for respondents' own tax-filing situations and preferences. Excluding the covariates from the analysis does not

substantively change the results. None of the interaction terms between these factors and deadline length were significant (all $ps > .23$).

The regression model was significant ($F(6, 102) = 6.85$, $p < .001$), with the independent variables explaining 24.5% of the variation in the dependent variable. Consistent with our prediction, planned monetary commitment was higher with a longer incidental deadline ($\beta = 1.186$, $SE = .559$, $p = .036$; $M_{\text{long}} = \$55.31$ vs. $M_{\text{short}} = \$41.67$). The regression also yielded a significant effect for filing format ($\beta = 2.904$, $SE = .516$, $p < .001$), and a marginally significant effect of gender ($\beta = -.978$, $SE = .584$, $p = .097$). Age, marital status, and income did not produce any significant results (all $ps > .19$).

Together, these results provide preliminary empirical evidence for the mere deadline effect. Consistent with hypothesis 1a, a long versus short incidental deadline led respondents to commit more money to filing their tax returns, even though the length of the deadline arose from an incidental factor—arrival date of the lost W-2 form. In the next experiment, we examine whether the same pattern of results holds for actual resource commitment.

EXPERIMENT 2: DEMONSTRATION OF THE MERE DEADLINE EFFECT ON ACTUAL RESOURCE COMMITMENT

Experiment 2 extends the findings of experiment 1 in two ways. First, whereas in experiment 1 we measured planned resource commitment, in experiment 2 we measure actual resource commitment. To do so, we assigned participants to the same task—to answer three questions about retirement planning—and measured the amount of time spent on each of the three questions as well as the number of characters they wrote in response to each question. Second, while in experiment 1 we employed an unexpected incidental deadline (a lost tax form), in experiment 2 we employed a preset incidental deadline—that is, the availability of the server to administer the survey. We predicted that the longer the incidental deadline, the more time participants would spend on writing about retirement planning and the more content they would generate.

Methods

Students from an online participant pool of a large North American university were asked to volunteer for a short retirement planning study. The link to the online survey was included in the initial invitation email sent. One hundred twenty-six volunteers (83 females; $M_{\text{age}} = 28.30$, $SD = 10.46$) completed this study. Participants were randomly assigned to either a long or a short incident deadline condition.

As background information, all volunteers were informed that the survey was being conducted on behalf of the Association of Collegiate Financial Well-Being

(ACFW), a nationwide organization dedicated to improving the well-being of college students. We were helping ACFW in collecting feedback regarding how college students save for retirement. We then manipulated incidental deadline. In the long (short) condition, respondents were informed that the server for administering the survey would undergo a major update in fourteen (seven) days from today. Therefore, we would like them to complete the survey by then. We also informed all respondents that the survey contained three questions on retirement planning and should take a few minutes to complete. Participants were then given fourteen (seven) days to complete their responses.

In the survey, volunteers responded to the following three questions: (1) Please describe some factors that are important when saving for retirement; (2) Please describe how you would determine how much money you need per month once you retire; and (3) Please describe some steps that you could implement now to help you increase your savings for retirement. These questions were adapted from a Fidelity survey on retirement planning (Fidelity 2017). Participants also indicated how important they thought it was to save for retirement and how important it was to complete the survey (1 = not at all important, 7 = very important). Finally, participants responded to demographic questions and were thanked for volunteering.

We recorded how much time (in seconds) volunteers spent on answering each of the three retirement planning questions and calculated the number of characters they wrote for each question. These served as measures of resources committed to the task. The mere deadline effect posits that consumers would commit more resources (i.e., spend more time and write more content) in the longer deadline condition.

Results and Discussion

On average, volunteers spent 323.55 seconds ($SD = 454.85$) on the three questions and wrote 470.40 characters ($SD = 419.15$). To examine whether volunteers faced with a longer incidental deadline spent more time answering the retirement planning questions, we conducted a 2 (deadline length: long vs. short; between-subjects) \times 3 (question ordering: first, second vs. third retirement question; within-subjects) mixed repeated-measures ANOVA with the amount of time taken as our dependent measure. We log-transformed response time to obtain homogeneity in the error variance. The analysis revealed a significant between-subjects effect of deadline length ($F(1, 124) = 6.89, p = .010$) and a significant within-subjects effect of question ordering ($F(2, 248) = 7.67, p = .001$). The interaction between deadline length and question ordering, however, was not significant ($F < 1$). A polynomial within-subject contrast revealed a significant linear trend, indicating that the amount of time spent on each question decreased as it appeared later in the survey ($M_{1n_time} = 4.36, 4.16$ vs. 4.11, respectively; $F(1, 124) = 13.21, p < .001$).

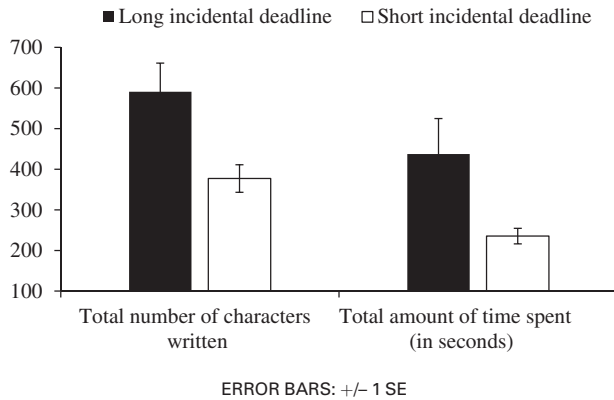
Furthermore, these differences did not emerge because of differential responses to one of the questions—instead, when the deadline was long versus short, volunteers spent significantly more time on the first ($M_{1n_time} = 4.54$ vs. 4.23; $F(1, 124) = 4.24, p = .042$), second ($M_{1n_time} = 4.37$ vs. 4.01; $F(1, 124) = 6.23, p = .014$), and third question ($M_{1n_time} = 4.31$ vs. 3.95; $F(1, 124) = 4.80, p = .030$).

Next, we examined whether deadline length affected the number of characters volunteers wrote for the retirement planning questions through a similar 2 (deadline length: long vs. short; between-subjects) \times 3 (question ordering: first, second vs. third retirement question; within-subjects) mixed repeated-measures ANOVA with number of characters written as the dependent measure. This analysis yielded a significant between-subjects effect of deadline length ($F(1, 124) = 8.54, p = .004$). The within-subjects effect of question ordering ($M_{1st, 2nd \text{ vs. } 3rd \text{ question}} = 167.76, 152.04$ vs. 150.60 characters; $F(2, 248) = 1.24, p = .292$) and the interaction between deadline length and question ordering ($F < 1$) were not significant. Consistent with our hypotheses, when the incidental deadline was long versus short, volunteers wrote more characters for the first ($M = 206.56$ vs. 137.70; $F(1, 124) = 6.30, p = .013$), second ($M = 192.25$ vs. 120.89; $F(1, 124) = 6.85, p = .010$), and third question ($M = 192.00$ vs. 118.54; $F(1, 124) = 6.31, p = .013$). A similar pattern of effects emerged when we used number of words (as opposed to number of characters) as our dependent measure.

Overall, consistent with hypothesis 1a, the longer the incidental deadline, the more total time participants spent on writing about retirement planning (437.34 vs. 235.41 seconds; $F(1, 124) = 6.37, p = .013$) and the more content they wrote (590.82 vs. 377.13 characters; $F(1, 124) = 8.54, p = .004$, see figure 1). Further, the groups did not differ with regards to how important they thought it was to save for retirement ($M_{long} = 6.21$ vs. $M_{short} = 6.34$; $F(1, 124) = .34, p = .560$) or to fill out the survey ($M_{long} = 3.04$ vs. $M_{short} = 3.15$; $F(1, 124) = .18, p = .674$), suggesting that longer deadlines did not lead participants to infer that the focal goal was more important.

In addition, while 126 volunteers successfully completed our survey, a total of 236 students had responded initially to our volunteer request—thus, 53.4% of the initial respondents successfully submitted their answers before their respective deadlines (i.e., fourteen [seven] days in the long [short] condition). Interestingly, of those who initially volunteered, a smaller percentage of respondents successfully completed the task when the deadline was longer (47%) relative to when it was shorter (60%; $\chi^2(1) = 3.80, p = .051$). This result parallels the prior finding that consumers are less likely to redeem a coupon when they have a longer time frame to do so (Silk 2004). Normatively, with more time, individuals should have found it easier to complete the task in time. Yet this seemingly counterintuitive result is consistent with our proposed

FIGURE 1

IMPACT OF DEADLINE LENGTH ON RESOURCE COMMITMENT
(EXPERIMENT 2)

inference-making account that longer incidental deadlines increase perceived goal difficulty. Further, we also found that volunteers who successfully completed the task procrastinated more in the longer deadline condition (the amount of time taken before starting the survey: $M = 38.75$ vs. 21.14 hours; $F(1, 124) = 4.88$, $p = .029$). The increased goal difficulty arising from longer deadlines might have been responsible for the observed escalation of resource commitment, increased procrastination, and higher likelihood of quitting. We directly examine the impact of goal difficulty in experiment 3.

Together, experiments 1 and 2 provide converging evidence for the proposed mere deadline effect: longer incidental deadlines lead to increased resource commitment, even when the deadline length results from incidental factors that cannot be meaningfully used to evaluate the focal task itself (e.g., lost tax form or server availability). We also find that longer incidental deadlines increase not only time but also monetary commitment (e.g., the amount of time spent on answering retirement saving questions, and the amount of money committed to filing tax returns). In addition, we observe the same pattern of results for both planned and actual resources committed. In the next three experiments, we provide evidence for the proposed inference-making account by showing that the mere deadline effect is mediated by perceived goal difficulty (experiment 3) and moderated by task type (experiment 4) and prior knowledge (experiment 5).

EXPERIMENT 3: A DIFFICULTY-BASED ACCOUNT

The main objective of experiment 3 is to provide evidence for the proposed mediating role of perceived goal

difficulty in the relationship between deadline length and resource commitment (hypothesis 1b and hypothesis 2). We use another incidental constraint—a friend's availability—to manipulate deadline length. More specifically, we told participants that they planned to organize a weekend party for their best friend from high school either three months or one month from now, as their friend would be available to visit them then. To ensure that the end goal did not differ across conditions (for instance, participants might imagine inviting more people in the long vs. short deadline condition), we explicitly told all participants that they would host an afternoon tea party for 25 people. To measure resource commitment, we asked participants to indicate how much money in total they would spend on this tea party. We measured perceived goal difficulty by asking participants to indicate how difficult they expected organizing this tea party to be. We predicted that longer incidental deadlines would increase resource commitment and that this mere deadline effect would be mediated by perceived goal difficulty. In order to rule out the alternative explanation that longer deadlines lead people to infer that the focal goal is more important (rather than more difficult) and therefore increase resource commitment, we also assess whether perceived goal importance serves as an alternative mediating factor.

Methods

One hundred seventy American adults recruited from Amazon Mechanical Turk (64 females; $M_{\text{age}} = 31.46$, $SD = 10.75$) completed a short online survey in exchange for nominal payment. Participants were randomly assigned to one of two incidental deadline conditions: long or short. In the long (short) incidental deadline condition, participants were asked to imagine that their best friend from high school would visit them for a weekend three months (one month) from now. All participants were then told that they planned to organize a party for their friend at their home that weekend. More specifically, they would host an afternoon tea party, where they planned to serve homemade refreshments, for 25 people.

Participants then indicated how much money in total (in US dollars) they would spend on hosting this party. Participants also indicated how difficult they expected organizing this party would be (1 = not at all difficult, 7 = very difficult) and how important this party was for them (1 = not at all important, 7 = very important). Finally, participants responded to demographic questions and were thanked and compensated for their participation.

Results and Discussion

On average, participants committed to spending \$159.80 ($SD = \124.71) for the party. As in experiment 1, we log-transformed the dollar amounts in our analyses to obtain

homogeneity in the error variance (the untransformed values are reported for ease of exposition). One participant indicated that he or she would not engage in tea party shopping, so this response was not included in the analysis. An ANOVA with the log-transformed dollar amount as the dependent variable elicited a significant main effect of deadline ($F(1, 167) = 4.90, p = .028$). Consistent with hypothesis 1a, the total planned monetary commitment was higher when the party was three months versus one month from now ($M_{\text{long}} = \$185.24, SD = \148.01 vs. $M_{\text{short}} = \$133.75, SD = \88.74).

An ANOVA with difficulty perception also elicited a main effect of deadline ($F(1, 168) = 4.14, p = .043$). Consistent with hypothesis 1b, participants expected organizing the party to be more difficult when it was three months versus one month away ($M_{\text{long}} = 4.33, SD = 1.81$ vs. $M_{\text{short}} = 3.80, SD = 1.56$). Further, importance did not differ as a function of deadline length ($M_{\text{long}} = 5.45, SD = 1.48$ vs. $M_{\text{short}} = 5.60, SD = 1.24; F(1, 168) = .46, p = .501$).

To examine whether perceived goal difficulty mediates the relationship between deadline length and resource commitment, and whether perceived goal importance serves as an alternative mediator, we simultaneously tested a competing model with both mediators (Hayes 2013). As expected, while the indirect effect of goal difficulty was significant ($\beta = .038, SE = .025$; 95% confidence interval = .004 to .105), goal importance was not ($\beta = -.013, SE = .023$; 95% confidence interval = -.071, .018). These results suggest that perceived goal difficulty mediates the mere deadline effect (hypothesis 2), while perceived goal importance does not.

To summarize, experiment 3 provides direct support for our difficulty-based inference account by showing that the effect of long versus short incidental deadline on the amount of resources committed to a preset goal is mediated by participant's perceived goal difficulty. We also rule out goal importance as an alternate mediator. To provide further insights into the interplay between time frame and goal pursuit, in the next two experiments, we identify two theoretically relevant boundary conditions for the mere deadline effect—task type (defined vs. less defined) and prior knowledge (low vs. high).

EXPERIMENT 4: DEFINED TASKS ATTENUATE THE MERE DEADLINE EFFECT

The primary goal of experiment 4 is to delineate a theoretically derived boundary condition—task type (defined vs. less defined). According to our theory, incidental deadlines are used to make inferences about goal difficulty, subsequently affecting resource commitment. If this is indeed the case, then our predicted effects are less likely to

emerge for tasks that are less (vs. more) amenable to such inferences. Indeed, when the focal task has a definite solution with clear procedures for arriving at that solution (vs. when the solution and procedures are unclear), there is little (vs. more) room to make goal difficulty inferences contingent on the length of the deadline (long vs. short). Consequently, the impact of deadline length on both difficulty perception and resource commitment should be attenuated for defined (vs. less defined) tasks. Hence, in experiment 4, in addition to deadline length, we also manipulate a second factor, task type.

Our second goal is to demonstrate that these effects are immune to elicitation techniques. In the previous experiment, we measured resource commitment and difficulty within subjects. In this experiment, we assign participants to either assess difficulty or the amount of time required to complete the focal task. Thus, we also manipulate measure type between subjects. Measuring these two variables between-subjects allows us to validate that the proposed effect of deadline length on difficulty perception emerges independent of the elicitation and estimation of resource commitment. We expected to find that a long versus short incidental deadline would increase both difficulty perception and the resource commitment when the task is less defined, but not when the task is defined.

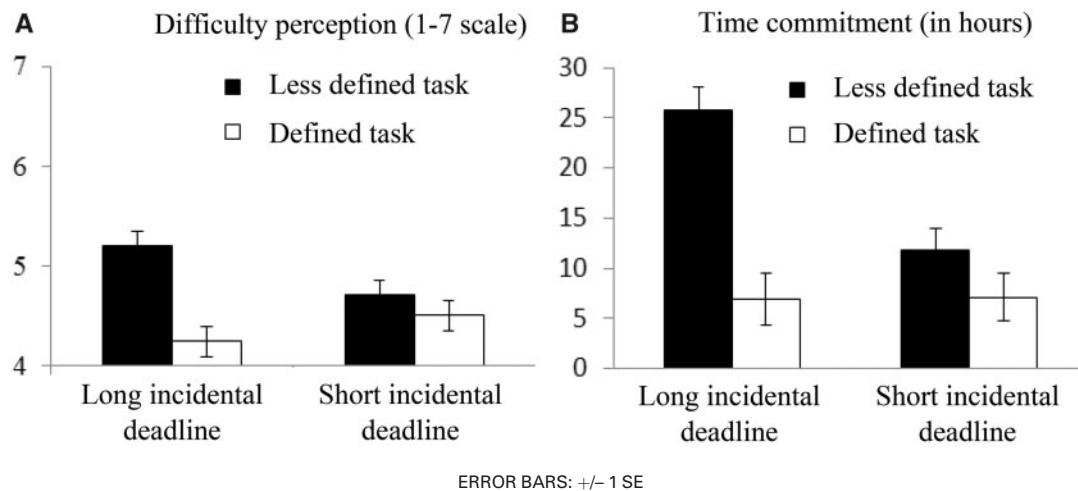
Methods

Eight hundred nineteen American adults recruited from Amazon Mechanical Turk (436 females; $M_{\text{age}} = 37.41, SD = 12.17$) completed a short online survey in exchange for nominal payment. At the outset, participants were informed that the Victoria Symphony Orchestra (VSO) approached us for help. In order to understand the challenges facing VSO, we put together a case study. This case study was purportedly based on actual events and a recent audience survey. In reality, we used a modified version of the Vancouver Symphony Orchestra (VSO) case study (developed by Daniel Gardiner and Charles Weinberg, from Kumar, Aaker, and Day 2002): we used the name Victoria instead of Vancouver (to ensure anonymity) and shortened it. The case study provided a brief history of VSO and discussed some of its strengths as well as current challenges, such as a decline in membership and an increase in deficit. Issues relating to other aspects of VSO—for example, type of concert, differences in patrons (e.g., subscribers vs. non-subscribers)—were also included.

We used a 2 (deadline length: long vs. short) \times 2 (task type: less defined vs. defined) \times 2 (measure type: difficulty perception vs. resource commitment) between-subjects design with random assignment. All participants were informed that we wanted to seek input from a separate group of respondents, and that we would share their input with VSO's board. We used the timing of their board meeting to

FIGURE 2

IMPACT OF DEADLINE LENGTH AND TASK TYPE ON GOAL PURSUIT (EXPERIMENT 4)



manipulate deadline length. In the long (short) deadline condition, the board meeting was ten (three) days away. In the conditions eliciting difficulty perception (resource commitment), we further informed participants that we wanted their help in assessing how difficult this case study was (how much time would be needed for participants to respond to this case study). Next, we asked all participants to skim through the case study. In the nondefined task conditions, we told participants that the main task for this case study was to answer four questions regarding VSO's strengths, weaknesses, opportunities, and threats. In the defined task condition, we told participants that the main task for this case study was to summarize the results of the 12 questions contained in the audience survey. We provided an example using the first question for elucidation purposes. The first question from the audience survey was "Are you a subscriber to the VSO?" It had the following results: "Yes, currently (19%); No, but formerly (29%); Never subscribed (51%)." We indicated that this question could be summarized as "While 19% audience members are currently subscribers to VSO, 29% were formerly subscribers, and 51% have never subscribed before." After skimming through the case study and the questions, participants responded to our main dependent variables. Participants indicated either how difficult they thought it would be to complete this case study (1 = not difficult at all, 7 = very difficult) or how much time (in hours) would be needed to complete this case study. Finally, all participants responded to demographic questions and were thanked and compensated for their participation.

Results and Discussion

Pretest. In order to ensure that the overall workload for the less defined task was equivalent to that for the defined task, we conducted a pretest with 50 American adults (21 females; $M_{\text{age}} = 35.00$, $SD = 11.28$) from the same population. It revealed that participants considered summarizing three statistical (defined) questions as being equivalent to responding to one SWOT analysis (less defined) question. We followed this 3:1 ratio in constructing the number of questions in the main study—thus, we included 12 (four) questions in the defined (less defined) conditions.

Main Study. To assess whether the impact of deadline length on perceptions of difficulty and resource commitment is moderated by task type, we conducted a 2 (deadline length: long vs. short) \times 2 (task type: less defined vs. defined) \times 2 (measure type: difficulty perception vs. resource commitment) ANOVA on the standardized scores of the dependent measure. We used standardized z-scores, as it allows us to compare perceptions of difficulty and time commitment (in hours) in one analysis even though they are from different normal distributions. We, however, report the raw means for ease of interpretation.

As expected, significant main effects of deadline length ($F(1, 811) = 6.54$; $p = .011$) and task type emerged ($F(1, 811) = 38.77$; $p < .001$). These were qualified by a significant interaction between deadline length and task type ($F(1, 811) = 15.03$; $p < .001$). However, there were no main effects of measure type; furthermore, none of the interactions with measurement type were significant (all $ps > .14$; see figure 2). This suggests that the pattern of

responses did not differ based on whether participants indicated difficulty perception or resource commitment.

Replicating previous findings, when the main task was less defined, a longer (vs. shorter) deadline elicited higher difficulty perceptions ($M_{\text{long}} = 5.20$ vs. $M_{\text{short}} = 4.71$; $F(1, 811) = 5.84$, $p = .016$) and greater time estimates ($M_{\text{long}} = 25.73$ vs. $M_{\text{short}} = 11.78$; $F(1, 811) = 17.89$, $p < .001$). Importantly, consistent with hypothesis 3, the inferential effects of deadline length on goal pursuit were attenuated when the main task was defined (difficulty perception: $M_{\text{long}} = 4.24$ vs. $M_{\text{short}} = 4.51$; $F(1, 811) = 1.52$, $p = .218$; time commitment: $M_{\text{long}} = 6.93$ vs. $M_{\text{short}} = 7.13$; $F(1, 811) = .005$, $p = .944$).

These findings expand our investigation in several ways. First, consistent with our hypotheses 1a and 1b and prior findings, these results demonstrate that the effect of deadline length emerges for both difficulty perception as well as resource commitment. Importantly, these findings also support our hypothesis 3 that some tasks are more amenable for the mere deadline effect than others. As we find, when the focal task was defined versus less defined, the inferential effects of deadline length on goal pursuit were attenuated. This is because, by definition, defined tasks are tightly specified, and thus provide little room for variation in inference making. While some tasks are indeed defined, many of the tasks we engage in on a daily basis are less defined with no certain solutions and clear procedures, such as how to prepare a tax return (experiment 1), how to plan for retirement (experiment 2), how to organize a party (experiment 3), and how to clean a townhouse (introductory example and experiment 5). Thus, understanding when and how these effects operate is likely to be important. Finally, the interaction pattern obtained in this study further rules out construal as an alternative account (which predicts that temporally distant goals that are construed at a higher level might be perceived as being more important, and may therefore lead to a higher level of resource commitment), as task type should not have produced any systematic changes in participants' construal levels. The observed interaction pattern between deadline length and task type also clearly rules out any expectation-related alternative explanations: if participants had thought that one was expected to work harder in the longer deadline condition, we should have observed only a main effect of deadline length, as their expectations should not have differed systematically across the two task conditions. In the next experiment, we investigate the role of the task performer—how individual differences in prior knowledge affect inferences.

EXPERIMENT 5: PRIOR KNOWLEDGE MODERATES THE MERE DEADLINE EFFECT

Experiment 5 further tests the proposed inference-making account by examining the moderating role of prior

knowledge. While longer incidental deadlines are expected to increase resource commitment for the low-knowledge group, prior literature alludes to two possibilities regarding what happens for the higher-knowledge group. On the one hand, consumers with higher levels of prior knowledge, such as those who engage in the focal task on a regular basis, might be more likely to rely on more diagnostic difficulty signals (e.g., in the case of the introductory example, the number and size of the rooms to be cleaned) rather than the nondiagnostic incidental deadline signals (e.g., the availability of family members) to estimate resource needs, and therefore be less susceptible to the inferential effect of incidental deadlines. On the other hand, longer incidental deadlines might increase resource commitment for the low- and high-knowledge groups but not for the moderate-knowledge group, as the latter has both the ability and motivation to process the currently available task information and therefore rely to a lesser degree on prior knowledge structures, whereas the low-knowledge group does not possess the ability to process current task information and the high-knowledge group does not have the motivation to do so (Bettman and Park 1980; Rao and Monroe 1988).

We empirically test which of these two possibilities would hold by employing a cleaning task that is similar to the introductory example. We manipulated deadline length through family members' availability and measured participants' prior knowledge about the focal task category.

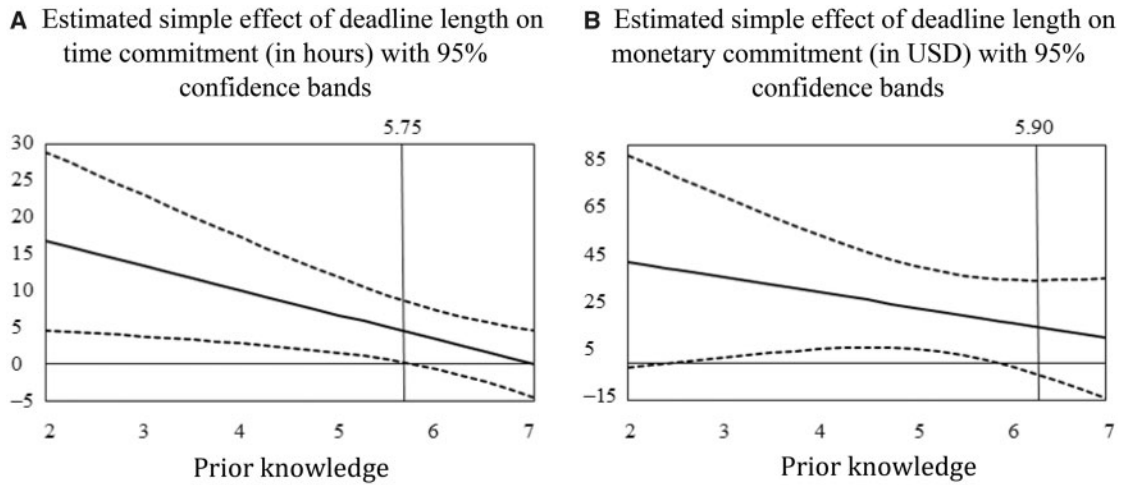
Methods

Two hundred fifty-three students (160 females; $M_{\text{age}} = 25.75$, $SD = 9.04$) from an online subject pool maintained by a large North American university participated in this experiment. We employed a between-subjects design with deadline length (long vs. short) as the manipulated factor and prior knowledge as a measured continuous variable (seven-point scale). Participants were asked to imagine that they moved into a new townhouse this January, and that they decided to host their family's annual reunion at their house this year. Participants in the long (short) incidental deadline condition learned that a Doodle poll found that the only time that worked for everyone was the weekend three months (one month) from now. They were further told that they were planning to clean their house thoroughly by themselves before the family reunion, as they had not done so since moving in. We presented all participants with the same picture representing the floor plan of the townhouse (see the appendix).

Next, participants indicated how much time (in hours) they would spend on the cleaning task and how much money (in US dollars) they would spend on purchasing cleaning supplies for this task. They then indicated the extent to which they were experienced with cleaning their home (1 = not at all, 7 = very), which served as our measure of prior knowledge. Finally, participants provided

FIGURE 3

IMPACT OF DEADLINE LENGTH AND PRIOR KNOWLEDGE ON RESOURCE COMMITMENT (EXPERIMENT 5)



demographic information, and were thanked and compensated for their participation.

Results and Discussion

Participants, on average, planned to spend 12.60 hours ($SD = 16.14$ hours) on the cleaning task and \$59.50 ($SD = \67.39) on cleaning supplies. We log-transformed the raw time and money amounts to obtain homogeneity in the error variance, but report regular means for ease of interpretation. As the natural log transformation requires a positive argument, we added a small amount (.01) to the zero values before the log transformation.

To assess whether task prior knowledge moderates the inferential effects of deadline length on resource allocation, we regressed each of our two dependent variables—time and money—separately on deadline length, prior knowledge, and their interaction term. The regression on time commitment revealed a significant main effect of deadline length ($\beta = 1.38$, $SE = .47$, $t(249) = 2.95$, $p = .004$), such that participants in the long deadline condition planned to spend more time on the cleaning task ($M_{\text{long}} = 14.63$ hours, $SD = 20.53$ vs. $M_{\text{short}} = 10.68$ hours, $SD = 10.14$). Further, we find a significant main effect of prior knowledge ($\beta = .30$, $SE = .12$, $t(249) = 2.52$, $p = .012$) and a significant interaction of deadline length and prior knowledge ($\beta = -.22$, $SE = .08$, $t(249) = -2.81$, $p = .005$). The regression on monetary commitment revealed a similar pattern of results. A significant main effect of deadline length emerged: participants in the long deadline condition planned to spend more money on cleaning supplies ($M_{\text{long}} = \$68.82$, $SD = \$84.59$ vs. $M_{\text{short}} = \$50.68$, $SD = \$44.08$; $\beta = 1.92$, $SE = .96$, $t(249) = 2.00$, $p = .047$). Although the

main effect of prior knowledge was not significant ($\beta = .37$, $SE = .24$, $t(249) = 1.53$, $p = .127$), we obtained a marginally significant interaction of deadline length and prior knowledge ($\beta = -.30$, $SE = .16$, $t(249) = -1.87$, $p = .063$). Together, these results suggest that the effects of deadline length on both time and monetary commitment were moderated by participants' prior knowledge.

To decompose the interaction patterns, we used the Johnson–Neyman technique (Spiller et al. 2013) to identify the range of prior knowledge for which the manipulation of deadline length had a significant impact on time and monetary commitment, respectively. This analysis revealed that there was a significant positive effect of deadline length on resource commitment only for participants with a lower level of prior knowledge (time: less than 5.75, $B = 4.15$, $SE = 2.11$; money: less than 5.90, $B = 17.30$, $SE = 8.78$; see figure 3).

The results of experiment 5 identify prior knowledge as a boundary condition for the mere deadline effect (hypothesis 4). In particular, we find that for consumers with a lower level of prior knowledge, a longer incidental deadline led to increased resource commitment relative to a shorter incidental deadline. However, these effects were attenuated for participants with more prior knowledge. We will discuss potential moderators of the role of knowledge in response to incidental deadlines in the General Discussion.

GENERAL DISCUSSION

While past literature has considered the role that deadlines play in influencing goal setting and goal pursuit, task deadline has typically been treated as an outcome of factors that are meaningfully connected to the focal task.

We identify a mere deadline effect, showing that task deadlines, once imposed, can serve as a basis for making inferences about the goal itself, even when they are incidental (i.e., resulting from causes that cannot be used to make diagnostic inferences about the focal task). This is an important finding, because in our daily lives deadline length frequently arises from incidental factors, which can still systematically impact judgments. These judgments also have important consequences, as they influence not just goal difficulty inferences, but also resource commitment to the goal.

Drawing from prior work, we propose that longer versus shorter deadlines imposed on a preset goal can lead to the inference that the focal goal is more difficult, and as a consequence increase resource commitment (time and money). Results across five experiments provide compelling evidence for the proposed mere deadline effect, which holds for both monetary (experiments 1, 3, and 5) and temporal resources (experiments 2, 4, and 5). Additionally, the mere deadline effect emerges for different kinds of incidental deadlines, such as the availability of a document, server, friend, or family members. We examine the underlying mechanism showing that the mere deadline effect is mediated by perceived goal difficulty (experiment 3) and moderated by task type (experiment 4) and prior knowledge (experiment 5).

In addition to providing support for our theory via both mediation and moderation approaches, we also rule out several alternative process explanations. One alternative account could be that, when faced with a long versus a short deadline, consumers might infer from the longer deadline length that this goal is more important and therefore requires more time and monetary resources. However, we find that the effect of deadline length on resource commitment holds even after we control for perceived goal importance. Another possible alternative account for our effects is that participants merely use deadline length as a numerical anchor for deciding how much resource to commit to a preset goal. However, this alternative numerical anchoring-based explanation cannot explain findings in several of our experiments. For example, in experiment 2, we find that participants spend more resources (time spent and characters written) with a longer incidental deadline. Anchoring cannot explain these effects. While anchoring may suggest that a higher internal numerical anchor might lead to a higher numerical response (as on a defined survey question), it cannot explain why it would lead to an increase in actual resource commitment (e.g., time spent and characters written). Furthermore, the moderation patterns found in experiments 4 and 5 also cannot be explained by anchoring, as neither task type nor prior knowledge should produce a direct impact based on the numeric value of the long and short deadlines. Together, these findings suggest that it is the deadline length per se, rather than any type of general numerical anchors, that serves as the basis for inferring goal difficulty. These results are consistent with our

inference-based theorizing that the temporal constraint embedded in deadlines draws attention, which consequently leads consumers to rely on this salient, nondiagnostic cue to make inferences about the difficulty of the focal goal and then decide on their level of resource commitment accordingly.

It may also be important to contrast our findings with prior work. Notably, prior research on “Parkinson’s Law” has argued that work expands to fill the time available (Parkinson 1957), because excess time leads people to set easier goals and therefore decreases effort (Bryan and Locke 1967). While our prediction that longer deadlines lead to increased time investment is consistent with this line of work, our proposed difficulty account based on inference making offers two novel predictions. First, our inference-making account suggests that longer deadlines would increase not only time commitment but also monetary commitment, whereas Parkinson’s Law makes predictions only about time commitment. Second, whereas Bryan and Locke (1967) suggest that longer time limits lead people to set easier goals, our account predicts that longer time limits increase, rather than decrease, perceived goal difficulty. In a nutshell, while the research on Parkinson’s Law demonstrates that in situations where time commitment is enforced and work time has to be filled (e.g., officials have to fill the work time available), excessive time leads people to slow their pace and become less productive, we study what happens when time commitment is not enforced. For example, there is no incentive for individuals to slow their pace to fill the time available for completing a home cleaning task, as they can always voluntarily devote their time to an alternative task. Additionally, there is also no incentive for them to spend more money when they have a longer deadline. Our approach therefore adds theoretical understanding to the process of goal pursuit under time limits by identifying situations in which longer deadlines can actually increase the perception of goal difficulty, leading people to invest more time and money into the goal pursuit.

The present research makes several theoretical contributions. First, we contribute to the literature on heuristic decision making (Cheema and Soman 2008; Dai et al. 2008; Hsee et al. 2015; Irmak, Vallen, and Robinson 2011) by identifying another important instance where consumers overgeneralize intuitive correlations and naïve theories. We delineate the downstream consequences of such overgeneralization on everyday consumer behavior. Longer incidental deadlines lead to the perception that the goal is more difficult, which consequently increases consumers’ resource commitment, such as spending more money on tax filing and party planning, or spending more time on retirement planning and house cleaning. Further, we note when and why longer incidental deadlines may produce unintended detrimental (vs. beneficial) consequences on consumer goal pursuit, such as escalation of resource

commitment, increased procrastination, and higher likelihood of quitting (vs. greater effort exertion).

Second, we contribute to the deadline and procrastination literature, offering novel insights into the interplay between time frame and goal pursuit. The extant literature has mainly considered the antecedents and consequences of deadlines that can be used to make diagnostic inferences about the focal goal (Ariely and Wertenbroch 2002; Buehler and Griffin 2003; Solomon and Rothblum 1984). The literature primarily suggests that individuals are poor planners, because they systematically underestimate the length of time it takes to complete tasks (Buehler and Griffin 2003; Buehler et al. 1994; Francis-Smythe and Robertson 1999; Kahneman and Lovallo 1993; Kahneman and Tversky 1979). Yet individuals are shown to prefer longer deadlines (Solomon and Rothblum 1984) when given a choice to do so. Further, individuals tend to procrastinate when the focal task involves high short-run costs (O'Donoghue and Rabin 2001) or delayed rewards (McClure et al. 2004), and when they precommit to costly self-imposed deadlines (Ariely and Wertenbroch 2002). We extend this rich body of knowledge in two ways. First, we demonstrate that once imposed, unrelated, incidental long deadlines increase not just perceived goal difficulty but also estimated resource requirement, which might result in procrastination and goal abandonment, even in situations where short-run costs, reward immediacy, and self-control through precommitment are controlled for. Second, we show that individual differences in knowledge moderate these effects. While a longer deadline increases resource commitment for consumers with low knowledge, the effect of deadline is attenuated for those with high knowledge.

At a broader level, the present research contributes to the emerging literature on how resource constraints impact judgment and decision making. Despite the recent surge of research on resource scarcity (Cannon, Goldsmith, and Roux forthcoming; Kristofferson et al. 2016; Laran and Salerno 2013; Mehta and Zhu 2016; Monga, May, and Bagchi 2017; Roux et al. 2015; Sevilla and Redden 2014; Zhu and Ratner 2015; Zhu, Yang, and Hsee 2018), our understanding of the broader psychological and behavioral consequences of constraints remains limited. We extend this line of research by investigating how the temporal constraint inherently embedded in the incidental deadline for completing a preset goal influences the amount of resources committed to the goal.

Finally, we contribute to the inference-making literature and goal research by lending support to the growing recognition that salient rather than diagnostic information available in the decision context might shape consumer decision making (Bettman et al. 1998; Fabrigar, MacDonald, and Wegener 2005; Irmak et al. 2011; Khan, Zhu, and Kalra 2011; Zhu, Billeter, and Inman 2012), and that abstracting goals away from the contexts in which they emerge and

studying them without these factors could limit our understanding of how they are interpreted (Bagchi and Li 2011; Cheema and Bagchi 2011; Huang et al. 2015; Koo and Fishbach 2008; Laran 2010). Although the focus of our investigation was on how actual deadline length (short vs. long) affects goal pursuit, these effects might persist in contexts where the time frame is the same, but different units are used to express it. Indeed, a large literature on numerosity (see Bagchi and Davis 2016 for a review; Monga and Bagchi 2012; Pandelaere, Briers, and Lembregts 2011) suggests that durations appear longer when smaller units (days vs. weeks) are used to express the same duration (e.g., fourteen days vs. two weeks) as the corresponding numbers are larger (14 vs. 2). We believe that the mere deadline effect might also emerge in such circumstances.

Notably, prior literature alludes to two possibilities regarding the role of prior knowledge in the relationship between incidental, nondiagnostic cues and consumer inference making. On one hand, an attenuation pattern might occur at the higher knowledge level, as more knowledgeable consumers are more likely to rely on diagnostic signals to make judgments. On the other hand, the knowledge effect might exhibit a quadratic pattern such that the inferential effects of nondiagnostic cues might hold for the low-knowledge (who do not possess the ability to process current task information) and high-knowledge consumers (who do not have the motivation to do so), but not for the moderate-knowledge consumers (who possess both the ability and motivation). The results of experiment 5 support a simple attenuation pattern at the higher knowledge level. We speculate this may have occurred because there is a low level of uncertainty involved in the focal cleaning task. The estimated resource needs for cleaning a house of a given size are largely invariant for consumers with a high level of cleaning knowledge. However, for tasks involving a higher level of uncertainty and variation, such as home renovation, high-knowledge consumers might overgeneralize the associations learned from their past experience, due to their lack of motivation to thoroughly process all the task-relevant information. The knowledge effect thus might exhibit a quadratic pattern in such contexts. The nuanced interplay between incidental cues, expertise, and uncertainty deserves further research attention. Future research could also broaden the examination to situations where the goal pursuit process consists of multiple subgoals or distinct stages. Such investigations could potentially yield additional important insights.

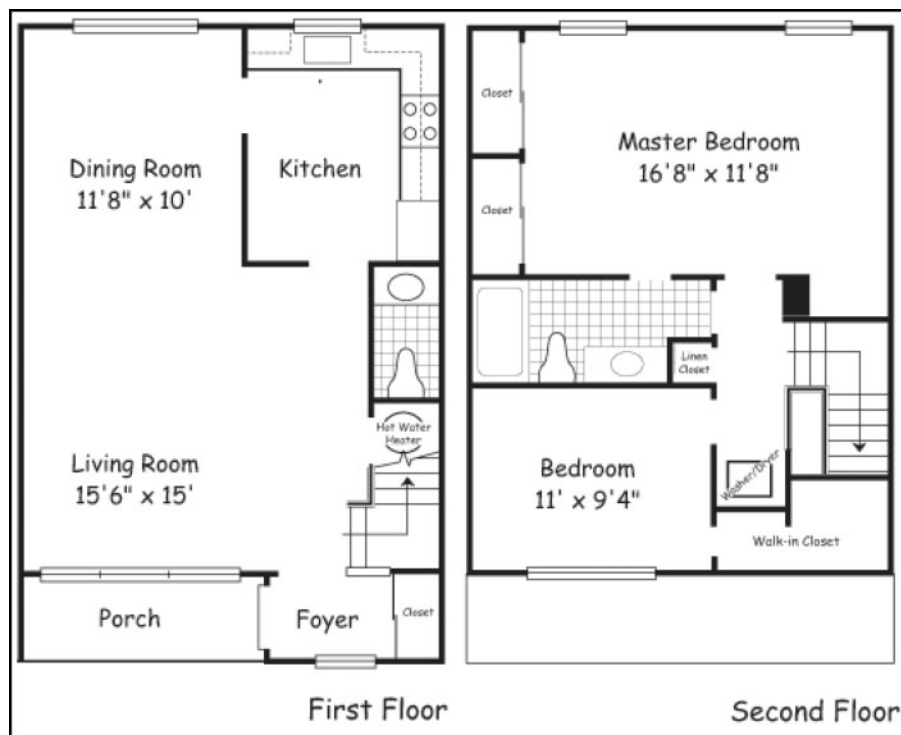
The mere deadline effect demonstrated in this research has significant practical implications. Our findings help individual decision makers, managers, and policy makers understand when and why beneficial versus suboptimal consequences might result from incidental deadlines. Our results suggest that long versus short incidental deadlines might be particularly beneficial for essential, yet often

underestimated, aspects of long-term well-being, such as when consumers exert more effort to save for college and plan for retirement. However, the unintended difficulty perception arising from deadline length will sometimes sabotage goal pursuit, such as when consumers commit more resources that are beyond their capability, or when elevated resource estimates lead to increased procrastination and higher likelihood of goal abandonment.

DATA COLLECTION INFORMATION

The third author supervised the collection of data for experiments 1, 2, and 5 at George Mason University in spring and fall 2017. The first author supervised the collection of data for experiments 3 and 4 by research assistants at Johns Hopkins University through Amazon Mechanical Turk during spring 2014 and spring 2017. All data were analyzed by the first and third authors.

APPENDIX: STIMULI USED IN EXPERIMENT 5



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