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Research Article

Dual payoff scenario warnings on credit card statements elicit suboptimal payoff decisions

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Abstract

U.S. Federal regulation from 2009 requires credit card companies to convey information regarding payoff scenarios, i.e., details such as total amount paid and time to pay off when only a minimum payment is made (over time). Across seven studies, the present research shows that consumers who were given a dual payoff scenario (i.e., how much is paid in total based on the minimum payment and also based on a 3-year payoff window) on credit card statements recommended lower payments than those given a single payoff scenario (when the 3-year payment amount was less than what they would have paid otherwise), and were less likely to pay off the balance in full. The effect is driven by a tendency of consumers to infer that the 3-year payment amount is the most appropriate. The dual-scenario effect is minimized by an intervention that draws attention away from the 3-year payment amount. Theoretical and public policy implications are considered.
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Keywords: Behavioral economics; Credit card; Debt; Judgment and decision making

Introduction

In 2009, U.S. federal regulations began requiring credit card companies to present additional information on monthly statements regarding the financial consequences of the amount consumers elect to pay toward their balance. The Credit Card Accountability, Responsibility, and Disclosure (CARD) Act mandated that all credit card issuers include a minimum payment warning on each monthly statement notifying consumers of the total time and money they would spend if they just paid the minimum each month. A further requirement is that the statement include a second scenario, the monthly amount needed to pay off the balance in 3 years. The goal of including these scenarios was to assist consumers in making wise financial decisions, a key concern given current consumer debt levels. To what extent, however, does a dual payoff scenario actually harm, rather than help, consumers? The present research documents a troubling pattern that runs counter to the good intentions of the authors of the Credit CARD act, that dual scenario information actually creates a suboptimal outcome for consumers as compared to single scenario information.

Credit card debt remains a pervasive problem for consumers in many industrialized economies. For example, U.S. consumers carried about $850 billion in credit card debt through 2013 (Board of Governors of the Federal Reserve System, 2014). Credit cards typically charge higher interest rates than other loans; hence, consumers who carry larger credit card balances suffer correspondingly greater (and perhaps unnecessary) interest charges. It is in the consumer's self-interest, then, to minimize credit card debt (cf. Gal & McShane, 2012; Wilcox, Block, & Eisenstein, 2011), and one means of doing so is to send monthly payments that are as large as possible.

Beyond the obvious option of repaying the credit balance in full, any smaller monthly payment constitutes a decision by the

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consumer as to what amount to pay. Of course, there are many reasons why a consumer would opt to pay an amount less than the full balance, including liquidity constraints, innumeracy, or lapses in self-control. Beyond these reasons, the present research centers on the simple aspect of the format of credit card statements. For example, it has already been documented that the minimum payment requirement, demanded by federal regulators of all credit card companies, constitutes a numeric anchor that may influence the payment decision (Navarro-Martinez et al., 2011; Stewart, 2009). In these studies, the presence versus absence of minimum payment amounts was manipulated between participants; those who saw a minimum payment decided on a significantly lower hypothetical payment amount than those who saw no minimum. That is, when a payment minimum of, say, $70 was given to participants, their recommended payment was lower (i.e., closer to the $70 and further from the full balance) than when the $70 anchor was absent. Navarro-Martinez et al. (2011) showed that such effects were robust across varying minimum payment amounts. Self-report survey data, in which participants reported their credit card balance, minimum payment required, and last payment amount, corroborated the experimental findings (Stewart, 2009). This research thus sounded a clear warning regarding the deleterious impact of payment minimums on credit card statements: such minimums may reduce the amount consumers intend to pay, thus increasing their interest charges over the long term.

Navarro-Martinez et al. (2011) further explored the effect of presenting "payment scenario" information on credit card statements in which the total cost of paying the minimum amount (i.e., total interest charges plus principal) over time is specified. For example, if one were to only pay the minimum ($30) on a balance of $1275, it would take approximately 6 years to pay off at a total cost of $1957. However, this single scenario information (relative to a numeric minimum-payment-only condition) does not seem to matter; neither information pertaining to the time to pay off nor the total cost over the life of the loan made a significant impact on participants' payment decisions. This research therefore suggested that it was the numeric payoff anchor, rather than the unpacked scenario involving timing and total amount to be paid, that influenced consumer credit card payment decisions.

Sometimes consumers see a single payment scenario, but other times there may be two payment scenarios. The Credit CARD Act demands that consumers be informed about not just the scenario involving paying the monthly minimum, but also the scenario involving the monthly amount needed to pay off the full balance in 3 years. This second, "3-year" scenario specifies a different monthly payment amount, which of course depends on the principal balance. For balances exceeding a certain threshold (i.e., in which the amount needed to pay off the balance in 3 years exceeds the minimum payment amount), two payment scenarios must be given to customers. For example, on a recent statement that one of the authors received, the principal balance was $2061 and the credit card statement gave the following scenario: "If you make no additional charges using this card and each month you pay the minimum of $25," "You will pay off the balance shown on this statement in about 11 years" and "You will end up paying an estimated $3723" (principal plus interest). Then, a second scenario specified the monthly amount needed to pay off the balance in 3 years ($71), as well as an estimated total of $2548. Interestingly, the statement then described this second scenario as bringing a "savings" of $1175 (see Fig. 1). In other words, the consumer is invited to draw a mental contrast between two payoff scenarios, one of which is objectively superior to the other in terms of money "saved." Obviously, there are no actual savings involved here (if saving is defined as money kept in your pocket); rather, the savings refers to a difference in two possible amounts of interest owed to the credit card company. As noted already, the presence versus absence of a dual payoff scenario on a statement varies, appearing only when the balance is sufficiently high that it cannot be paid off using minimum monthly payments within 3 years. Our focal question is the effect that the mere presence of a dual versus single payoff scenario has on consumers.

We suggest that the dual payoff scenario exerts an effect because the 3-year payment amount within it constitutes a cue that suggests an appropriate or more reasonable amount to pay. Consumers probably recognize that in order to be in good standing with their credit card company, they need to pay some amount between the minimum and the full balance. The 3-year amount contained in the dual scenario is by its nature more of a *suggested* amount than either the minimum or full balance. To the extent that this suggested payment amount is inferred to be an "appropriate" amount to pay, consumers may choose it even if they have the means to pay a larger amount. By contrast, a single scenario contains no such cue to appropriateness, although (as suggested by Stewart, 2009), consumers may well anchor on this numerical value, resulting in lower payment amounts than if no minimum were given at all.

As an illustration, Consumer 1 sees no minimum on the balance ($2061) and decides to pay $400. Consumer 2 sees a scenario involving a minimum payment of $51, anchors on this, and lowers her payment amount to $200. Consumer 3, however, sees the dual scenario that includes both the minimum payment and the 3-year amount of $150, and moves directly to this second, seemingly more appropriate option. Consumer 3, who sees the most detailed financial scenario, nevertheless, ends up making the smallest monthly payment ($150) and in so doing, ends up paying the largest amount over time in interest charges.

It is important to note that dual credit card scenarios will not inherently lower the amount that a consumer pays. Rather, because we believe that the 3-year payment amount acts as a salient cue, this suggested amount would be particularly problematic when it is substantially lower than what the consumer would have otherwise paid. As a further illustration, if a Consumer would have paid $400 toward their bill, but the 3-year payment amount contained in his statement was $500, he might gravitate toward what seems like a strong suggestion to pay $500. Obviously, such a case would not represent a problem. Problematic consumer behavior, however, arises when the 3-year payment amount is lower than what would have been paid.

In exploring whether the 3-year payment amount is taken by consumers to be a more appropriate payment, we looked at two kinds of evidence. First, we examined the mean payment

amounts between consumers exposed to a dual scenario versus a single scenario or no scenario at all. Second, we asked participants directly what payment is most appropriate within varying experimental conditions.

Accordingly, we proposed:

H1. When presented with credit card statements with dual payment scenarios containing a suggested amount much less than what is normally paid, consumers will opt to pay a lower percent of the balance than when presented with either no scenario or a single scenario.

H2. The 3-year payment amount contained in the dual payment scenario represents a cue as to the most appropriate amount to pay.

As an indication of the robustness of the main findings, we further tested two additional patterns. First, if consumers find the 3-year amount more appropriate, they might be more likely to recommend a payment that precisely matches this 3-year amount rather than the full balance. We thus examined whether the modal payments differed between conditions, with more participants in the dual scenario conditions opting to pay the 3-year amount. Second, if in fact more consumers opt to pay the 3-year amount when presented with dual scenarios, then in turn, fewer consumers might opt to pay the full balance. Accordingly, we examined whether a lower proportion of consumers—when presented with dual payment scenarios—will opt to pay off their balance in full than when presented with either no scenario or a single scenario.

Finally, to shed additional light on this mechanism centering on a cue to appropriateness, we used it as the basis for attempting to reduce the effect of dual payoff scenarios. If that effect is due to consumers choosing a suggested amount, then the imposition of a new suggestion (i.e., that consumers can pay any amount between $0 and the full balance) might weaken the effect.

H3. When a dual scenario is followed by information emphasizing the possibility of paying off the full balance, the previously observed effect of dual scenarios on recommended payment will be diminished.

To test these ideas, we present one survey and six experiments in which the information presented within credit card statements is varied and payment decisions are assessed.

Study 1: Survey of self-reported payments

The goal of this survey was to provide preliminary evidence for a relation between the presence (vs. absence) of a dual payoff scenario on credit card statements and the payment amount decided upon by consumers. We used an internet survey to ask consumers about their most recent credit card statement and the amount they paid toward it. In the survey itself, consumers were asked to retrieve their last credit card statement, answer some questions about it, and report on the amount of their last payment. We hypothesized that consumers who received dual payoff scenarios would pay off a lower percentage of their credit card bill than those who had not received such warnings (H1).

That being said, we know that the dual payoff scenario will only appear on those credit card statements for accounts that exceed a certain balance. So, all else being equal, people with larger balances are more likely to see a dual payoff scenario on their credit card. One way of addressing this inherent confound is to use attention to the credit card statement as a moderator variable. Some people read their credit card statements closely each month, others skim them lightly, and others ignore them altogether. Thus, self-reported attention may capture the extent to which people were exposed to and were hence aware of the dual payoff scenario on their credit card at the time they made their payment decision.

Method

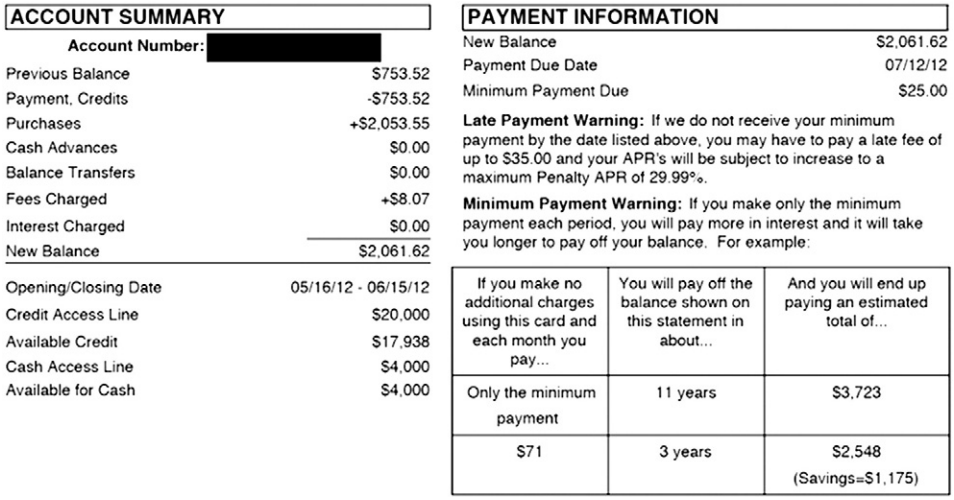
Four hundred and sixteen adults (151 women; M_{age} = 30.4, SD = 10.64 years) drawn from Mechanical Turk were paid $.35 each for completing the survey. Fifty participants (12% of the sample) failed an instructional manipulation check in which they were given a list of activities but asked to simply choose the box labeled “other” and write “I have read the instructions” (Oppenheimer, Meyvis, & Davidenko, 2009) and were excluded from further analyses. Twenty-seven participants did not report their balance, the amount that they paid, had a balance of $0 or paid $0, and two participants reported paying a payment to balance ratio that was more than 4 standard deviations above the mean amount, and were also excluded from further analyses, leaving a final sample of 337 participants.

Participants were told in advance that they needed to possess a credit card and have their most recent statement present while completing the survey. All participants were then asked to report the type of credit card they owned, the balance listed on their most recent credit card statement (i.e., the balance that they owed for the last month’s bill), and the minimum payment amount listed on the statement. Participants were then shown a visual example of a dual payoff scenario on a credit card statement, and asked whether their credit card contained such information. If their credit card statements did in fact contain the dual scenario, they were asked to list the 3-year monthly payment amount, its payoff period (in years, which should be 3), and its estimated total amount. All participants then reported the amount of their most recent monthly payment. Participants who stated that they received a dual payoff scenario were asked to describe their attention to the statement by selecting from among these three options: “I always read the table containing the alternative payoff scenarios,” “I sometimes read the table containing the alternative payoff scenarios,” and “I didn’t notice that there was a table containing alternative payoff scenarios until today.” Demographic questions (age, sex, and income) followed.

Results and discussion

Full sample, average payment

Our hypothesis was that dual payoff scenarios would be related to payment amounts (H1). As the outcome (payment) measure, we computed the percentage of the credit card bill paid (amount paid



ACCOUNT SUMMARY

Account Number:	[redacted]
Previous Balance	$753.52
Payment, Credits	-$753.52
Purchases	+$2,053.55
Cash Advances	$0.00
Balance Transfers	$0.00
Fees Charged	+$8.07
Interest Charged	$0.00
New Balance	$2,061.62
Opening/Closing Date	05/16/12 - 06/15/12
Credit Access Line	$20,000
Available Credit	$17,938
Cash Access Line	$4,000
Available for Cash	$4,000

PAYMENT INFORMATION

New Balance	$2,061.62
Payment Due Date	07/12/12
Minimum Payment Due	$25.00

Late Payment Warning: If we do not receive your minimum payment by the date listed above, you may have to pay a late fee of up to $35.00 and your APR's will be subject to increase to a maximum Penalty APR of 29.99%.

Minimum Payment Warning: If you make only the minimum payment each period, you will pay more in interest and it will take you longer to pay off your balance. For example:

If you make no additional charges using this card and each month you pay...	You will pay off the balance shown on this statement in about...	And you will end up paying an estimated total of...
Only the minimum payment	11 years	$3,723
$71	3 years	$2,548 (Savings=$1,175)

Fig. 1. Example of credit card statements and payoff information, as mandated by the CARD Act of 2009.

divided by total bill from the previous month). Because the distribution of this variable was skewed, we used a natural log transformation for analyses (and also did so in the remaining studies that used payment amount as the dependent variable). We compared payoff percentage among consumers who received no scenario (n = 186), consumers who had received a single scenario (n = 84), and consumers who had received a dual scenario (n = 67). An omnibus ANOVA revealed a marginally significant difference in payoff amount across groups, $F(2, 334) = 2.83$, $p = .06$, $d = .29$. Planned contrasts indicated that consumers exposed to the single scenario warning reported paying off as much of their credit card bill ($M = .61$, $SD = .68$) as did consumers exposed to no scenario ($M = .63$, $SD = .53$), $t(334) = .60$, $p = .55$, $d = .09$). Those who saw the dual scenario, however, reported paying significantly less ($M = .56$, $SD = .56$) than those who saw no scenario, $t(334) = 2.38$, $p = .02$, $d = .34$, but this did not differ from those who saw the single scenario, $t(334) = 1.59$, $p = .11$, $d = .24$.

Full sample, modal payment

In this real-world examination, because each consumer's balance and suggested payment amounts were different, an analysis of modal payments would lack meaning. However, below we examine whether presentation format affected the proportion of consumers who paid the full balance.

Full sample, proportion paying full balance

There were no differences in the proportion of consumers paying off the balance in full, between presentation formats (no scenario: 45.9%; single scenario: 34.9%; dual scenario: 37.3%), $\chi^2(2, N = 337) = 3.46$, $p = .18$, $\phi = .10$.

Paying attention (or not) to the dual payoff scenario warning, mean payment

We next focused our analysis on the 67 participants (19.4% of the total sample) who reported that they had, in fact, received a credit card statement containing a dual scenario.[1] We used the self-report measure of attention to the credit card statement as the predictor variable, contrasting participants who reported that they always read or sometimes read the alternative payoff tables ("high attention" condition, n = 49) to participants who reported that they had never noticed the alternative payoff scenario table until we pointed it out to them ("low attention" condition, n = 18). Here, we treat attention as a moderator variable: if participants were paying attention to the dual scenario information, then we would expect them to pay a lower portion of their balance. If they were not paying attention to the dual scenario information, however, then we would not expect them to do so. In line with H1, high attention participants reported paying a smaller proportion of their balance ($M = .46$, $SD = .49$) than did low attention participants ($M = .83$, $SD = .65$), $t(65) = 1.99$, $p = .05$, $d = .55$.

Reduced sample, proportion paying full balance

As further evidence of the effect of dual scenarios on payment behavior, we found that a significantly greater proportion of consumers paid their balance in full when they had not read the payment table (61.1%) compared to those that had read the payment table (28.6%), $\chi^2(1, N = 67) = 5.96$, $p = .02$, $d = .63$.

Study 1 provided a first indication of the deleterious impact of the presence of dual payoff scenarios on credit card

[1] Indeed, it is possible that these participants represent different types of consumers from those who did not receive dual payoff scenarios. Participants who received dual payoff scenario information were older ($M_{age} = 33.2$, $SD = 12.4$) than those who did not receive this information ($M_{age} = 30.2$, $SD = 10.1$), $t(334) = 2.11$, $p < .05$, $d = .29$, and also reported a significantly higher balance ($M_{balance}$ = $2,259, SD = $3,580) than participants who did not receive the dual payoff scenario information ($M_{balance}$ = $1,047, SD = $2,508), $t(335) = 3.86$, $p < .001$, $d = .52$. Amount paid off on the most recent monthly bill did not differ between participants who did not receive a dual scenario ($M_{payment}$ = $344.89, SD = $611.57) and those who did ($M_{payment}$ = $615.44, SD = $1033.14), $t(335) = 1.57$, $p = .12$, $d = .21$. Both types of participants were equally distributed across the major credit card companies, $\chi^2(4, N = 337) = 3.86$, $p = .43$, $\phi = .06$.

statements. All variables of interest were self-report and thus prone to bias due either to lack of care or to self-presentational bias. To bypass these concerns, our next goal was to test the hypotheses using more tightly controlled experiments.

Study 2a: Impact of dual scenarios

Studies 2a–2c tested the basic effect of whether dual scenarios on credit card statements reduce credit card payments. Study 2a provided the initial experimental test of the causal impact of dual payoff scenarios on payment decisions, as benchmarked against a single payoff scenario and a no-scenario baseline condition (H1). The method was a between-subject experiment involving a hypothetical decision.

Method

Two hundred and twenty-eight adults (128 women; M_{age} = 34.1, *SD* = 12.43 years) drawn from Mechanical Turk were paid $.12 each for participation. Sixty-eight participants (30% of the sample) failed the instructional manipulation check and were excluded from further analyses. Participants were randomly assigned to one of four conditions: baseline, single scenario, dual scenario, and dual scenario–no savings.

Participants imagined that they had just received their credit card statement with a balance of $2663 and a minimum payment of $53. Table 1 shows the additional information that was presented in the remaining conditions. Because we wished to isolate the effect of presenting contrastive numerical information from the explicit verbal notation of a "savings," we included an additional condition that excluded this information. That is, the dual scenario–no savings condition was identical to the dual scenario condition, except that there was no additional statement that explicitly noted the savings amount (nor did it use the word "savings"). In all conditions, participants then reported how much of the credit card bill they would elect to pay.

Results and discussion

Average payment

An omnibus ANOVA revealed that payment amounts were significantly different between the four conditions, $F(3, 156) = 6.26$, $p < .001$, $d = .69$. Table 1 presents mean payoff amounts from each condition.

Planned contrasts indicated that participants in the single scenario condition reported that they would pay just as much (*M* = $822, *SD* = $1069; untransformed dollar amount) as did participants in the baseline condition (*M* = $1063, *SD* = $1178), $t(156) = .63$, $p = .53$, $d = .13$. Recall that both the baseline and the single scenario condition included minimum payment information; the only difference between them was that the latter included a single scenario describing the time to pay off the balance and the total cost incurred. The minimal variation between these two conditions replicates Navarro-Martinez et al. (2011).

Those in the dual scenario condition (*M* = $429, *SD* = $881) reported that they would make a smaller payment than participants did in either the baseline or single scenario conditions (*t*s > 2.75, *p*s = .007 and .001, *d*s = .75 and .67, respectively). But is this effect driven by the explicit notation of "savings" (plus a dollar amount for said savings)? The mean payment recommended in the dual scenario–no savings condition (*M* = $437, *SD* = $864) was essentially the same as in the dual scenario condition ($t(156) = .25$, $p = .80$, $d = .06$), thus indicating that it is the mere mention of the alternative payoff amount, and not the explicit notation of savings, that drove the observed pattern. Further, the dual scenario–no savings condition differed significantly from both the baseline and single scenario conditions (*t*s > 2.64, *p*s < .001 and = .009, *d*s = .72 and .62, respectively).

Modal payment

Tellingly, and as initial support for H2, the mode in both dual scenario conditions was the suggested alternative payment amount, with 78.9% of participants in the dual scenario condition opting to pay $90 and 78.7% of participants in the dual scenario no-savings condition opting to pay $90. The mode for both the baseline and single scenario conditions, however, was the full balance amount (percentages noted below). This pattern of modal responses suggests that the alternative payment achieved greater salience than either the minimum payment or the full balance, luring consumers to recommend payment amounts that matched it (H2).

Proportion paying full balance

The proportion of participants who elected to pay the full principal balance also differed between conditions, paralleling the effects noted above. Whereas 31.6% of participants in the baseline condition and 21.6% of participants in the single scenario condition opted to pay the full amount, only 13.2% and 12.8% of participants in the dual scenario and dual scenario–no saving, respectively, opted to pay the full amount. The latter two proportions differed from the former proportions, $\chi^2(1, N = 160) = 4.81$, $p < .05$, $d = .35$. Proportions did not differ between the baseline and single scenario conditions ($p = .33$) nor between the dual scenario and dual scenario–no saving conditions ($p = .96$).

One potential limitation of Study 2a is that credit card scenarios were presented in text form, and thus did not look exactly like actual credit card statements. In a follow-up study, however, we presented Mechanical Turk participants with the same three conditions from Study 2a, but used a realistic credit card statement as stimuli (numbers are as shown in Fig. 1). Despite a different presentation format, we replicated the results of Study 2a: payment amounts differed between the three conditions, $F(2, 89) = 3.14$, $p < .05$, $d = .53$, and contrast tests indicated that participants in the single scenario condition reported that they would pay just as much (*M* = $815.21, *SD* = $865.21) as did participants in the baseline condition (*M* = $1018.45, *SD* = $975.02; $t(89) = .34$, $p = .74$, $d = .08$). However, those in the dual scenario condition reported that they would make a significantly smaller payment (*M* = $409.12, *SD* = $722.49) than participants in the baseline condition, $t(89) = 2.33$, $p = .02$, $d = .60$, and a marginally smaller payment than those in the single scenario condition, $t(89) = 1.94$, $p = .06$, $d = .55$.

Study 2b: Ruling out averaging

One possible explanation for the findings from Study 2a is that participants aimed to pay an approximate average of the minimum payment, the 3-year payment, and the full balance (akin to a compromise effect, in which consumers facing a difficult trade-off tend to "split the difference" and select the middle option; e.g., Kivetz, Netzer, & Srinivasan, 2004; Simonson, 1989). If participants are indeed using an averaging rule, then experimentally shifting the deviation of the minimum and 3-year amounts away from an average, while holding the average constant, should have no effect (because the average remains the same). For example, if participants do split the difference, then there would be no difference between a minimum and 3-year payment of $41 and $51 on the one hand, and $26 and $66 on the other hand, because both average to $46. However, if there is something special about the 3-year amount that lures participants, then recommended amounts should differ, and the modal responses should approximate the $51 and $66 amounts, respectively. Study 2b tested this averaging account by experimentally manipulating the values of the minimum and 3-year amounts in just this way.

Method

Three hundred and fifty-two adults (113 women; M_{age} = 29.6, *SD* = 9.41 years) drawn from Mechanical Turk were paid $.20 each for participation. Sixty-seven participants (19% of the sample) failed the instructional manipulation check and were excluded from further analyses. Participants were randomly assigned to one of four conditions in which the full balance was $1988: (1) baseline, (2) single scenario, (3) dual scenario with a minimum payment of $41 and a 3-year payment of $51, and (4) a dual scenario condition with a minimum payment of $26 and a 3-year payment of $66. Note that both dual scenario conditions yield the same average, whether the average is defined by the minimum and the 3-year amount ($46) or by the minimum, 3-year and the full balance ($693). All participants then reported how much of the balance they would elect to pay. Table 2 specifies the details for each experimental condition.

Table 1
Study 2a: Instructions and payoff amounts.

Condition	Information presented	Result: (amount paid)
Baseline	"…Balance of $2663 and a minimum payment of $53."	$1063[a]
Single Scenario	Baseline message plus: "If you make no additional charges, and each month you pay $53, you will pay off the balance in 17 years, and you will pay an estimated total of $5141	$822[a]
Dual Scenario	Baseline and single scenario message plus: "If you make no additional charges, and each month you pay $90, you will pay off the balance in 3 years, and you will pay an estimated total of $3241 (SAVINGS = $1900)	$429[b]
Dual Scenario–No Savings	Baseline and single scenario message plus: "If you make no additional charges, and each month you pay $90, you will pay off the balance in 3 years, and you will pay an estimated total of $3241	$437[b]

Note. Means not sharing a common superscript differ at $p < .05$.

Results

Average payment

An omnibus ANOVA revealed that payment amounts differed between the four conditions, $F(3, 280) = 18.25$, $p < .001$, $d = .88$. Table 2 presents mean payments from each condition.

Planned contrasts indicated that participants in the single scenario condition reported that they would pay just as much (*M* = $702, *SD* = $834; untransformed dollar amount) as did participants in the baseline condition (*M* = $676, *SD* = $842), $t(280) = .69$, $p = .49$, $d = .10$. Participants in the first dual scenario condition opted to pay less (*M* = $262, *SD* = $580) than participants in either the baseline or single scenario conditions (*t*s > 4.90 and *p*s < .001 for both comparisons; *d*s = .80, .94, respectively); similarly, participants in the second dual scenario condition (*M* = $214, *SD* = $497) opted to pay less than baseline or single scenario participants (*t*s > 4.87 and *p*s < .001 for both comparisons; *d*s = .81, .97, respectively). Further, the average payment amount did not differ between the two dual scenario conditions ($t(280) = .17$, $p = .86$, $d = .04$).

Modal payment

Importantly, the modal payment amount did differ between the two dual scenario conditions, with 68.2% of participants in the first dual scenario condition opting to pay the 3-year amount of $51 and 68.5% of participants in the second dual scenario condition opting to pay their respective 3-year amount of $66. The mode for both the baseline and single scenario conditions, however, was the full balance amount (percentages noted below). Thus, rather than simply averaging the various payoff amounts, a strong majority of participants in both conditions opted to pay precisely the 3-year amount.

Proportion paying full balance

As in Study 2a, the proportion of participants who elected to pay the full principal balance also differed between conditions. Whereas 28.0% of participants in the baseline condition and 28.2% of participants in the single scenario condition opted to pay the full amount, only 9.1% and 6.8% of participants in the first and second dual scenario conditions, respectively, opted to pay the full amount. The latter two proportions differed from the former proportions, $\chi^2(1, N = 285) = 19.42$, $p < .001$, $d = .54$. Proportions did not differ between the baseline and single scenario conditions ($p = .98$) nor between the two dual scenario conditions ($p = .63$).

Study 2b moves closer toward an explanation for the impact of dual scenarios, in that it rules out a simple averaging explanation. Rather, replicating and extending the results from Study 2a, it appears that consumers react to the 3-year payment amount within the dual scenario as a "suggestion" to which they flock. We probe this pattern further in Study 2c.

Study 2c: Altering the 3-year payoff amount

Study 2c had two aims. First, the balance and payment amounts used in Studies 2a and 2b were potentially higher than the balances that many consumers face. Accordingly, one aim of Study 2c was to use a full balance amount that was considerably lower ($200) than in the previous studies, thereby testing whether the previously observed pattern is robust across different principal balances. Second, the 3-year payment used in the previous two studies constituted a relatively low percentage of the overall balance (around 3%), and thus may have been perceived as easy to pay, and as such, lower than what consumers would have otherwise paid. By contrast, Study 2c used a 3-year payment that was a higher percentage of the balance (40%). Study 2c thus examined a key component to H1: the 3-year payment amount should only lower payments if in fact it is lower than what consumers would have paid without such a guide. Nonetheless, in line with H2, regardless of the level of the 3-year amount, if it acts as a salient cue (as we have found in Studies 2a and 2b), then participants in the dual scenario condition should still be significantly more likely to recommended paying this amount.

Method

Two hundred and seventy-six adults (88 women; M_{age} = 28.7, *SD* = 8.67 years) drawn from Mechanical Turk were paid $.20 each for participation. Thirty-six participants (13% of the sample) failed the instructional manipulation check and were excluded from further analyses. Participants were randomly assigned to one of three conditions: baseline, single scenario, and dual scenario.

Participants imagined that they had just received their credit card statement with a balance of $200 and a minimum payment of $16. Table 3 shows the additional information presented in the remaining conditions. In all conditions, participants then reported how much of the credit card bill they would pay.

Results and discussion

Average payment

An omnibus ANOVA did not show a significant effect of condition $F(2, 236) = 1.37$, $p = .26$, $d = .22$. Table 3 presents mean payments for each condition. Participants in the dual scenario condition opted to pay as much (M = $97, SD = $56) as participants in the baseline (M = $137, SD = $75; $t(236) = 1.66$, $p = .10$, $d = .29$) and single scenario (M = $130, SD = $81; $t(236) = .86$, $p = .39$, $d = .14$) conditions.

Modal payment

Importantly, as in the previous studies, the modal payment in the dual scenario condition (64.1%) was the 3-year payment amount of $80. The mode for both the baseline and single scenario conditions, however, was the full balance amount (percentages noted below).

Proportion paying full balance

In line with the previous studies, the proportion of participants opting to pay the full balance differed between conditions. Whereas 52.6% and 54.1% of participants in the baseline and single scenario conditions, respectively, chose to pay the full balance amount, only 21% of participants in the dual scenario condition opted to do so. The proportion paying the full balance in the dual scenario condition differed significantly from the baseline and single scenario conditions, $\chi^2(1, N = 239) = 23.25$, $p < .001$, $d = .66$. Proportions did not differ between the baseline and single scenario conditions ($p = .85$).

Overall, this study demonstrated a key caveat from H1: payment amounts do not differ between conditions when the 3-year amount is higher than what participants would have otherwise paid. However, the findings regarding the modal response (i.e., that the dual scenario lured consumers to pay precisely the 3-year amount), and the proportion opting to pay the full balance (i.e., the dual scenario significantly lowered the percentage of consumers paying the full balance), were the same as those observed in Studies 2a and 2b. These findings offer additional support for H2 and suggest that consumers use the 3-year payment as a normative cue regarding the amount they should pay.

Study 3: Cuing appropriateness

Study 3 sought additional support for the mechanism that may explain why dual scenarios result in lower payments, namely that

Table 2
Study 2b: Instructions and payoff amounts.

Condition	Information presented	Result (amount paid)
Baseline	"Your total balance is $1988 and the minimum payment is $46	$676[a]
Single Scenario	"Your total balance is $1988 and the minimum payment is $46. If you make no additional charges, and each month you pay $46, you will pay off the balance in 5 years, and you will pay an estimated total of $3010.	$702[a]
Dual Scenario 41/51	"Your total balance is $1988 and the minimum payment is $41. If you make no additional charges, and each month you pay $41, you will pay off the balance in 5 years, and you will pay an estimated total of $3010. If you make no additional charges, and each month you pay $51, you will pay off the balance in 3 years, and you will pay an estimated total of $2597 (SAVINGS = $413)."	$262[b]
Dual Scenario 26/66	"Your total balance is $1988 and the minimum payment is $26. If you make no additional charges, and each month you pay $26, you will pay off the balance in 5 years, and you will pay an estimated total of $3010. If you make no additional charges, and each month you pay $66, you will pay off the balance in 3 years, and you will pay an estimated total of $2597 (SAVINGS = $413)."	$214[b]

Note. Means not sharing a common superscript differ at $p < .05$.

such scenarios represent a cue to what payment amount might be the most appropriate to pay. That is, because the minimum payment represents a lowest possible bound for the payment decision, the presence of a second scenario, representing a 3-year time frame and which necessarily appears more manageable than the time frame given by the minimum payment scenario, signals a more appropriate or normatively acceptable payment amount. Study 3 tested this idea by using the same paradigm as in Study Set 2, but added an additional question in which participants reported the amount they felt to be appropriate or expected. We hypothesized that perceptions of the most appropriate payment amount would mediate the effect of the presence of the dual scenario on payment decisions (H2).

Method

Two hundred and sixty adults (76 women; M_{age} = 28.71, *SD* = 8.51 years) drawn from Mechanical Turk were paid $.20 each for participation. Thirty-seven participants (14% of the sample) failed the instructional manipulation check and were excluded from further analyses. Participants were randomly assigned to one of three conditions: baseline, single scenario, and dual scenario.

Participants imagined that they had just received their credit card statement with a balance of $1988 and a minimum payment of $41. Table 4 shows the additional information in the remaining conditions. Participants were randomly assigned to a baseline, single scenario, or dual scenario condition. After indicating how much they would pay toward the bill, participants reported on the most appropriate payment amount (i.e., they answered the following question: "What do you think is the appropriate or expected amount to pay toward this bill?").

Results and discussion

Average payment

An omnibus ANOVA revealed significant differences in payment amounts between conditions, $F(2, 220) = 25.2$, $p < .001$, $d = .96$. Table 4 presents mean payment amounts from each condition. Planned contrasts indicated that participants in the dual scenario condition opted to pay less (*M* = $203, *SD* = $512) than participants in either the baseline (*M* = $830, *SD* = $872) or single scenario conditions (*M* = $657, *SD* = $864; *t*s > 4.90 and ps < .001 for both comparisons; *d*s = 1.20 and .86, respectively).

Modal payment

Further, the modal payment in the dual scenario condition was the 3-year amount (77.5%), whereas the modal payment in the baseline and single scenario conditions was the full balance (percentages listed below).

Proportion paying full balance

As in Studies 2a–c, the proportion of participants opting to pay the full balance differed between conditions. Whereas 32.4% and 27.8% of participants in the baseline and single scenario conditions, respectively, chose to pay the full balance, fewer in the dual scenario condition did so (7.5%). The proportion paying the full balance in the dual scenario condition differed significantly from the baseline and single scenario conditions, $\chi^2(1, N = 223) = 15.24$, $p < .001$, $d = .54$. Proportions did not differ between the baseline and single scenario conditions ($p = .55$).

Appropriate payment amounts

An omnibus ANOVA also revealed variation between conditions with regard to the appropriate payment amount, $F(2, 220) = 7.49$, $p < .001$, $d = .52$, with participants in the dual scenario condition indicating a lower amount (*M* = $178, *SD* = $434) than participants in either the baseline (*M* = $470, *SD* = $651) or single scenario (*M* = $424, *SD* = $705) conditions (*t*s = 3.75 and 2.63, *p*s = .001 and .025, and *d*s = .65 and .47, respectively). To assess whether the appropriate amount accounted for the link between condition and payoff amounts, we first created a dummy variable that coded the baseline and single scenario conditions as "0" and the dual scenario condition as "1." We next regressed payment amount (log-transformed, as in all other analyses) on the appropriate amount (log-transformed), as well as condition, and found that lower payment amounts were in fact related to lower appropriate payments ($\beta = .65$; $t = 14.28$, $p < .001$). Importantly, a bootstrapping test for mediation confirmed that the appropriate payment mediated the relation between condition and payment (95% CI = −.2443, −.0847; 5000 re-samples; Preacher & Hayes, 2008).

Study 3 thus supports the explanation the dual scenarios decrease credit card payment amounts by offering a cue to what payment amount is most appropriate. This finding dovetails with the repeated observation that the modal payment amount matches the 3-year amount suggested in the dual scenario; in the single scenario and baseline conditions, the modal response is the full balance.

Study 4a: Lessening the effect of dual scenarios

We have found that dual payoff scenarios on credit card statements elicit suboptimal payoff decisions. The extent to which such effects can be lessened constitutes an important theoretical question (a manipulation that erases the effect can shed light on the hypothesized mechanism) as well as a practical question (as it would indicate a policy modification that would benefit the typical consumer).

Study 3 showed that the alternative payment amount represents a cue to what is most appropriate to pay. Further, Study Set 2 as well as Study 3 showed that the modal payment amount in the dual scenario condition matches the 3-year amount, but that the modal payment in the single scenario and baseline conditions is the full balance. This suggests that an intervention that emphasizes the full balance might be effective in mitigating the effect of dual payoff scenarios. In Study 4a, participants received one additional piece of information (or not): a sentence indicating that they could pay anywhere between $0 and the full balance. We hypothesized that the presentation of this additional information, positioned at the end of all information presented, would mitigate the previously observed effect of a dual payoff scenario (H3).

Table 3
Study 2c: Instructions and payoff amounts.

Condition	Information presented	Result (amount paid)
Baseline	"Your total balance is $200 and the minimum payment is $16	$137[a]
Single Scenario	"Your total balance is $200 and the minimum payment is $16. If you make no additional charges, and each month you pay $16, you will pay off the balance in 1.2 years, and you will pay an estimated total of $223.	$130[a]
Dual Scenario	" Your total balance is $200 and the minimum payment is $16. If you make no additional charges, and each month you pay $16, you will pay off the balance in 1.2 years, and you will pay an estimated total of $223. If you make no additional charges, and each month you pay $80, you will pay off the balance in 3 months, and you will pay an estimated total of $206 (SAVINGS = $17)."	$97[a]

Note. Means not sharing a common superscript differ at $p < .05$.

Method

Two hundred and seven adults (53 women; $M_{age} = 26.50$, $SD = 8.35$ years) drawn from Mechanical Turk were paid $.12 each for completing the survey. Twenty-six participants (12.6% of the sample) failed the instructional manipulation check and were excluded from further analyses. One additional participant was excluded for recording a payment amount greater than the maximum. Participants were randomly assigned to one of four conditions of a 2(scenario: single vs. dual) × 2(full balance: present vs. absent) between-subjects factorial design. The single vs. dual scenario conditions were identical to those of Study 2a. Orthogonally, half of the participants saw a full balance statement, i.e., an additional sentence (presented after all the previous credit card information) that read: "You can pay any amount between $0 and $2663" (see Table 5 for summary of instructions within conditions). All participants then reported how much of the bill they would pay.

Results and discussion

Average payment

A 2 × 2 ANOVA revealed a main effect of presence vs. absence of full balance information, $F(1, 176) = 24.7$, $p < .001$, $d = .68$, such that the presence of this information brought about larger payments ($M = \$1332$, $SD = \$1189$) than when it was absent ($M = \$627$, $SD = \$976$). This main effect was qualified by an interaction, $F(1, 176) = 14.6$, $p < .001$, $d = .51$. Table 5 presents mean payoff amounts from each cell of this interaction. There was no main effect of scenario, $p = .14$, $d = .18$.

The interaction effect is depicted in Fig. 2, showing that the effect of dual (vs. single) payoff scenario is evident when the full balance information is absent (left hand side of Fig. 2): the dual scenario resulted in a smaller recommended payment ($M = \$284$; $SD = \$627$) than did the single scenario ($M = \$994$; $SD = \$1142$), $t(91) = 4.20$, $p < .001$, $d = .80$. However, when the full balance cue was present, the effect was reduced, such that the dual scenario resulted in a recommended payment ($M = \$1536$; $SD = \$1210$) similar to that elicited by the single scenario condition ($M = \$1150$; SD = $1152), $t(85) = 1.49$, $p = .14$, $d = .33$.

Modal payment

A similar pattern emerged for modal payments. Whereas the modal payment in the dual scenario–no cue condition was the suggested alternative amount of $90 (79.6%), the modal payment in the other three conditions was the full balance.

Proportion paying full balance

As in Studies 2a–c and 3, a higher percentage of participants opted to pay the full balance amount in the single scenario-no cue (28.9%), single scenario-full balance cue (32.6%) and dual scenario–full balance cue (51.2%) conditions than in the dual scenario–no cue condition (4.1%), $\chi^2(1, N = 181) = 19.28$, $p < .001$, $d = .69$. The proportion of participants paying off the full balance in the single scenario-no cue, single scenario-full balance cue, and dual scenario–full balance cue conditions was different from one another, $\chi^2(2, N = 132) = 5.20$, $p = .07$, $\phi = .20$. As a further examination of this result, we found that a higher proportion of participants in the dual scenario–full balance cue condition opted to pay the full balance than

Table 4
Study 3: Instructions and payoff amounts.

Condition	Information presented	Result (amount paid)
Baseline	"Your total balance is $1988 and the minimum payment is $41	$830[a]
Single Scenario	"Your total balance is $1988 and the minimum payment is $41. If you make no additional charges, and each month you pay $41, you will pay off the balance in 5 years, and you will pay an estimated total of $3010.	$657[a]
Dual Scenario	"Your total balance is $1988 and the minimum payment is $41. If you make no additional charges, and each month you pay $41, you will pay off the balance in 5 years, and you will pay an estimated total of $3010. If you make no additional charges, and each month you pay $51, you will pay off the balance in 3 years, and you will pay an estimated total of $2597 (SAVINGS = $413)."	$203[b]

Note. Means not sharing a common superscript differ at $p < .05$.

participants in the other two conditions, $\chi^2(1, N = 132) = 5.06$, $p = .02$, $d = .40$. The proportions in the two single scenario conditions did not differ from each other ($p = .70$).

These findings indicate that the simple addition of one sentence (i.e., "You can pay any amount between $0 and the maximum payment") may positively impact consumers' credit card payment decisions by mitigating the hidden danger posed by dual payoff scenarios. However, it remains unclear precisely what aspect of the full balance information exerted this effect. In Study 4b, we tested three more specific possibilities.

Study 4b: Lessening the effect, redux

Study 4a revealed a technique for mitigating the deleterious impact of dual scenarios on credit card payment, namely, the full balance as the final piece of information participants read before making their payment decision. The goal of Study 4b was to test three possibilities as to what particular aspect of the full balance statement exerted the effect. First, the full balance statement might have encouraged participants to think more generally about their budget, overall spending, and financial constraints. This general financial thinking (which is perhaps more concrete and wide-ranging) might then have dampened the particular effect of the dual scenario (which is numeric). Second, the full balance itself might carry the effect entirely. That is, the full balance might serve as a pure numeric anchor, overwriting the effect of the earlier-presented dual scenario. Third, it might be that a focus on the range itself, between zero and the full balance, is what mitigates the dual scenario effect. In this third possibility, participants might well recognize their freedom and ability to pay larger amounts, because they could conceivably pick all sorts of amounts *besides* those instantiated in the earlier-presented dual scenario.

To test these three possibilities, we used a one-way ANOVA design in which we included a baseline condition, a single scenario condition, a dual scenario condition, and three additional dual scenario conditions that included information intended to capture the above three possibilities: a budget condition (in which participants were asked to think about their spending in general), a full balance only condition (in which only the full balance was presented), and a full balance plus range condition (which is the same full balance cue statement used in the previous study).

Method

Five hundred and forty-four adults (193 women; $M_{age} = 29.29$, $SD = 9.54$ years) drawn from Mechanical Turk were paid $.34 each for completing the survey. Sixty-three participants (11.6% of the sample) failed the instructional manipulation check and were excluded from further analyses. Participants were randomly assigned to one of six conditions: (1) No-scenario baseline, (2) Single scenario, (3) Dual scenario, and the following three conditions which included the same dual scenario information, plus an additional final statement taking the form of (4) Budget ("Think of your budget for the whole month and how much money you have for discretionary spending), (5) Full Balance Only ("The full balance is $1988"), and (6) Full Balance Plus Range ("You can pay any amount between $0 and $1988") (see Table 6 for summary of instructions within conditions). All participants were then asked to report how much of the bill they would pay.

Results and discussion

Average payment

An omnibus ANOVA revealed a main effect of condition, $F(5, 474) = 22.17$, $p < .001$, $d = .96$. Planned contrast tests replicated findings from the previous studies: participants opted to pay significantly less toward their bill in the dual scenario condition ($M = \$196$, $SD = \$506$) compared to the baseline condition ($M = \$720$, $SD = \$853$; $t(474) = 6.26$, $p < .001$, $d = 1.03$) and the single scenario condition ($M = \$733$, $SD = 877$; $t(474) = 6.21$, $p < .001$, $d = 1.03$). There were no differences between the baseline and single scenario conditions, $t(474) = .00$, $p = .99$, $d = .00$. Table 6 presents mean payment amounts from each condition.

Further planned contrasts did not support the explanation centering on budget consideration: there was little difference between the Budget condition ($M = \$225$, $SD = \$547$) and the Dual Scenario condition ($M = \$196$, $SD = \$506$), $t(474) = 1.28$, $p = .20$, $d = .25$. Weak support was evident for the mere effect of the numeric full balance, in that those in Full Balance

Table 5
Study 4a: Instructions and payoff amounts.

Condition	Information presented	Result (amount paid)
Single Scenario	"Your total balance is $2663 and the minimum payment is $53. If you make no additional charges, and each month you pay $53, you will pay off the balance in 17 years, and you will pay an estimated total of $5141	$994[a,b]
Single Scenario plus Full Balance	"Your total balance is $2663 and the minimum payment is $53. If you make no additional charges, and each month you pay $53, you will pay off the balance in 17 years, and you will pay an estimated total of $5141. You can pay any amount between $0 and $2663."	$1150[b]
Dual Scenario	Single scenario message plus: "If you make no additional charges, and each month you pay $90, you will pay off the balance in 3 years, and you will pay an estimated total of $3241."	$284[c]
Dual Scenario plus Full Balance	Control and single scenario message plus: "If you make no additional charges, and each month you pay $90, you will pay off the balance in 3 years, and you will pay an estimated total of $3241. You can pay any amount between $0 and $2663."	$1537[b]

Note. Means not sharing a common superscript differ at $p < .05$.

Only condition recommended a somewhat higher payment (M = \$317, SD = \$633) than did those in the Dual Scenario condition, $t(474) = 1.67$, $p = .10$, $d = .33$. The third explanation, a focus on range as well as the full balance, was the best supported of the three possibilities. Participants encouraged to consider the range from zero to the full balance recommended a higher payment amount (M = \$890, SD = \$880) than did those in the Dual Scenario condition, $t(474) = 8.13$, $p < .001$, $d = 1.35$), essentially elevating the payment amount to roughly the same level as those in the baseline condition ($t(474) = 1.85$, $p = .07$, $d = .26$) and those in the single scenario condition ($t(474) = 1.83$, $p = .07$, $d = .26$).

Modal payment

As a demonstration of further evidence for the power of the "range statement," the dual scenario plus range condition was the only dual scenario condition in which the modal payment was the full balance amount (37.3%). In the three other dual scenario conditions, by contrast, the modal payment was (as in the previous studies) the 3-year payment amount (dual scenario: 87.8%; budget: 57.3%; full balance only: 58.7%). Also as in previous studies, the modal payment in the baseline and single scenario conditions was the full balance amount.

Proportion paying full balance

The proportion of participants opting to pay the full balance did not differ between the dual scenario plus range (37.3%), baseline (28.4%), and single scenario conditions (32.1%), $\chi^2(2, N = 242) = 1.51$, $p = .47$, $\phi = .08$. Participants in the other three dual scenario conditions, however, were less likely to choose to pay the balance in full (dual scenario: 7%; budget: 8%; full balance only: 12%). These three proportions differed significantly from the baseline, single scenario, and dual scenario plus range conditions, $\chi^2(1, N = 481) = 39.83$, $p < .001$, $d = .60$, but they did not differ significantly from each other, $\chi^2(2, N = 239) = 1.10$, $p = .58$, $\phi = .07$.

These results give a tighter specification of what aspect of the full balance condition used in Study 4a was responsible for the effect of mitigating the deleterious impact of dual payoff scenario information. It appears that a reminder of the full balance amount *combined* with the full range payable, and a notation that the consumer has the freedom to pay an amount that he or she chooses, is responsible for mitigating the dual scenario effect. From a practical standpoint, it is remarkable that so brief an instruction can make such a difference in consumers' recommended credit card payment amounts.

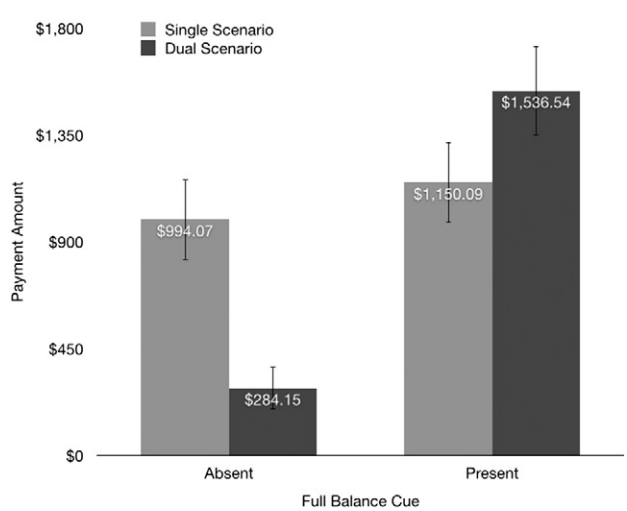


Fig. 2. Mean payment amounts as a function of treatment and amount of information presented in Study 4a.

General discussion

U.S. federal regulations in 2009 began requiring credit card companies to present minimum payment information regarding the consequences of the amount they elect to pay on their monthly balance. This legislation was intended to aid the decision making journey for consumers, helping them to make more rational decisions that would minimize debt over the long term. Yet, the present results suggest that providing payoff scenarios (a key component of the Credit CARD Act) may not always help consumers make larger payments. Indeed, we found that the key aspect of providing dual payoff scenarios may have unintended consequences.

Specifically, showing people what will happen to them (in terms of total amount paid) if they only pay the minimum, and then contrasting this to what will happen if they pay a larger amount (the 3-year payoff amount), drives people to recommend a smaller credit card payment than if only the single (minimum) payment scenario is given. Notably, this is true only to the extent that the 3-year payment provides a payment cue that is less than what participants would have otherwise paid (as in all studies reported here except for Study 2c). Perhaps more important, regardless of the 3-year payoff amount, participants across our studies who were exposed to the dual scenario were significantly less likely to advocate paying off their balances in full.

Our results came in the form of both experimental tests involving hypothetical decisions and also a survey of self-reports of actual credit card payments. In the latter case, consumers who received dual scenarios reported paying off a lower proportion of their balance than those who did not. And, among those who did receive a dual scenario statement, consumers who regularly read their statements reported paying off a lower proportion of their credit card balance compared to consumers who had never before noticed the dual payoff scenarios.

Previous research has shown that the mere notation of a minimum payment may act as an anchor that influences payment decisions in terms of pulling consumers' recommended payment amounts down toward that minimum payment (Navarro-Martinez et al., 2011; Stewart, 2009). These authors suggested that an anchoring effect accounted for these findings, and indeed anchoring effects have been demonstrated across a wide range of judgments (Galinsky & Mussweiler, 2001; Epley & Gilovich, 2001, 2006; Mussweiler, 2003; Tversky & Kahneman, 1974; Wegener, Petty, Blankenship, & Detweiler-Bedell, 2010), including consumer judgments (Adaval & Wyer, 2011; Krishna, Yoon, Wagner, & Adaval, 2006; Nunes & Boatwright, 2004; Simonson & Drolet, 2004) and purchasing behavior (Wansink, Kent, & Hoch, 1998).

In the present research, we looked further to the aspect of inferences regarding the appropriateness of particular payment amounts suggested within the dual payoff scenarios. Specifically, dual payoff scenarios exert an effect because the 3-year amount represents a cue to a more appropriate amount to pay than the full balance. The 3-year amount contained in the dual scenario is by its nature more of a *suggested* amount than either the minimum or full balance, and it appears that consumers choose it even more than they would the full balance, thus driving their monthly payments to an even lower level. In short, consumers believe the alternative amount is a powerful recommendation for what is expected or acceptable to pay toward their bill. We found three kinds of evidence to support this claim. First, the modal payment amount in the dual scenario condition matched the 3-year amount, but the modal payment in the single scenario and baseline conditions was the full balance (Studies 2a, 2b, 2c, 3, 4a and 4b). Second, when asked directly for the most appropriate amount to pay, participants in the dual scenario condition stated an amount lower than those in the single scenario condition. Moreover, this "appropriate" amount mediated the effect of single vs. dual scenarios on payment amount. Third, an intervention that pulls attention away from the 3-year payment amount and toward the full balance (as well as range, i.e., that one might pay any amount between $0 and the full balance) substantially reduced the effect of the dual scenario on payment amount.

The present research also ruled out some alternative explanations. In some credit card statements, the difference between the total amount paid (principal plus interest over time) between the two scenarios is explicitly given and called a "savings." It is plausible that telling people that one payment "saves" them money over another is enough to drive them to pay precisely that amount. However, Study 2a experimentally varied the presence versus absence of this notation of savings and showed that it had no effect. Second, another possibility is that participants might aim to pay an approximate average of the minimum payment, the 3-year payment, and the full balance (akin to a compromise effect, in which consumers facing a difficult trade-off tend to select the middle option; e.g., Kivetz et al., 2004; Simonson, 1989). Study 2b experimentally varied the deviation of the minimum and 3-year amounts away from an average, while holding the average constant, and this manipulation produced a clear effect on the modal response, namely that participants still tended to want to pay the amount suggested by the 3-year minimum. This result ruled out the role of a simple averaging response, in that an effect was found even though the average remained constant across experimental conditions. Further, the effect of dual scenarios on payment was replicated repeatedly, and appeared robust across varying balances, suggested payments, and statement formats.

Our findings have practical implications for regulatory policy regarding credit card financial information disclosure. First, to the extent that not paying off a balance in full is considered suboptimal consumer behavior, then dual scenarios should be avoided insomuch as participants exposed to them are significantly less likely to advocate paying off their balances in full. That being said, if this aspect of behavior is considered less important than simply the amount that is paid off, then the recommendation from this work is not to avoid dual scenarios on credit card statements altogether, but rather to avoid dual scenarios that contain suggested payments that are below the norm (i.e., below what the consumer would choose to pay if there were not a second scenario provided). Third, and more important, we have uncovered a simple intervention that can mitigate the potential deleterious impact of dual scenario information, namely, stating the range of payment options available between zero and the full balance. In Study 4a, the previously observed effect that dual (vs. single scenarios) reduced recommended payment amounts was minimized when the range and full balance information were presented immediately prior to the payment decision. In Study 4b, we unpacked this effect and tested three possible explanations. Two aspects proved important: the numeric full balance as a simple cue, and a statement that the consumer could pay whatever he or she wanted within the full range. It is possible that reminding people of their own freedom to choose any payment amount (within current financial constraints, course) dislodged them from the cue invoked by the dual scenario information. From a practical standpoint, this finding is remarkable because it suggests that a brief, low-cost

Table 6
Study 4b: Instructions and payoff amounts.

Condition	Information presented	Result (amount paid)
Baseline	"Your total balance is $1988 and the minimum payment is $41	$720[a]
Single Scenario	"Your total balance is $1988 and the minimum payment is $41. If you make no additional charges, and each month you pay $41, you will pay off the balance in 5 years, and you will pay an estimated total of $3010.	$733[a]
Dual Scenario	"Your total balance is $1988 and the minimum payment is $41. If you make no additional charges, and each month you pay $41, you will pay off the balance in 5 years, and you will pay an estimated total of $3010. If you make no additional charges, and each month you pay $51, you will pay off the balance in 3 years, and you will pay an estimated total of $2597 (SAVINGS = $413)."	$196[b]
Dual Scenario with Budget	Dual scenario plus: "Think of your budget for the whole month and how much money you have for discretionary purchases"	$225[b]
Dual Scenario with Full Balance-Only	Dual scenario plus: "The full balance is $1988"	$318[b]
Dual Scenario with Full Balance Plus Range	Dual scenario plus: "You can pay any amount between $0 and $1988"	$890[a]

Note. Means not sharing a common superscript differ at $p < .05$.

instruction can make a positive difference in consumers' recommended credit card payment amounts.

The effectiveness of the Credit CARD Act legislation is still largely unknown. Campbell, Gartenberg, and Tufano (2011) reported preliminary evidence that consumers who were exposed to the minimum payment and alternative payoff scenario warnings indeed made smaller and more irregular payments than consumers who did not receive such warnings. And, although Jones, Loibl, and Tennyson (2012) showed that overall credit card payments relative to debt have increased since the inception of the Credit CARD Act, there is little evidence that the act has changed behavior among consumers who continue to carry debt. Overall, it is difficult to determine whether increases in credit card debt repayments occurred because of the Credit CARD Act or because of the end of the 2007–2009 recession (see Jones et al., 2012). Future research is clearly needed to determine whether the Credit CARD Act will have any lasting (negative or positive) effects on consumers.

A further wrinkle is that the Credit CARD act was written in an era before internet banking came to dominate American consumer financial management. The Act targets the paper statements that come through the regular mail, and is silent on how best to present information using internet interfaces. Tellingly, we conducted a survey of adult Americans in the summer of 2013 and found that 31% reported that they only looked at the internet-based statement of their credit card (39% looked at the paper statement, and 24% looked at the paper statement in its digital PDF form; 6% never looked at their statement at all). Not surprisingly, it was the younger respondents who were more likely to look online only. The present research provides both the theoretical platform as well as experimental tools for future research aimed at optimizing the online interfaces for presentation of consumer credit card information.

To conclude, legislation designed to help consumers may sometimes do anything but. Rather than clarifying a complex financial situation, the information contained in dual payoff scenarios has the potential to harm the very consumers the Credit CARD Act was intended to help.

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