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# **Splurging After Reaching Your Goal: How and When a Used (vs. Unused) Account Affects Consumption Behavior?**

Siyuan Yin and Marissa A. Sharif

## Abstract

How does spending from a used (vs. unused) account affect consumption behavior? In ten studies (N=13,948), we find that consumers are more likely to spend resources on non-essential items from a used (vs. unused) account. This is because consumers perceive they have accomplished their purchase goal when they have relatively less remaining in their account. We demonstrate the robustness of the effect of a used vs. unused account across several domains, including checking accounts, credit card reward points, and gift cards. Further, we demonstrate three boundary conditions of the effect, revealing that the proportion of the account remaining, whether the purchase goal has been reached or not, as well as whether the purchase is on essential vs. non-essential items moderate the subsequent consumption behavior.

Keywords: consumption, goal, relative judgments, accounts, partitions

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Imagine that you have a \$100 Best Buy gift card. Last month, you spent \$90 of this gift card and have \$10 remaining on it. As you are checking out, you find some new products that you might be interested in, such as a new iPhone case, costing \$8. While you have an iPhone case that is in good condition, this case has a unique design that you like. How likely would you be to purchase this iPhone case with your gift card? Now imagine that, instead of having \$10 remaining on a \$100 Best Buy gift card, you instead have an unused \$10 Best Buy gift card. Similarly, you find the new iPhone case, costing \$8. In this situation, would you be equally, more, or less likely to purchase the iPhone case than in the previous situation?

Consumers frequently have to make the choice to spend their resources on an item that they may not need, but want (i.e., a non-essential item), or alternatively, to hold onto their resources for something else later. In some situations, the account they are considering spending from is used (e.g., some money of the gift card has been used) or unused (e.g., no money of the gift card has been used yet). In this research, we examine whether consumers are more (vs. less) likely to spend their resources when spending from a used vs. unused account, holding constant the absolute amount in the account. We predict that consumers will be more likely to spend their remaining resources on non-essential items from a used (vs. unused) account. We suggest this is because consumers are likely to infer that they have achieved their purchase goal when there is relatively less remaining in the account. We demonstrate this effect across ten studies ( $N = 13,948$ ) in multiple different domains, including credit card reward points, gift cards, and checking accounts.

These findings make several theoretical contributions. First, we contribute to the literature on relative judgments. A large stream of research has shown that people's judgments are regularly based on relative rather than absolute standards and often influenced by the

surrounding context (e.g., Baird, Green, and Luce 1980; Campbell, Lewis, and Hunt 1958; Garner 1954; Laming 1997; Morewedge, Holtzman, and Epley 2007; Sharif and Oppenheimer 2016; 2021; Sherman et al. 1978; Stewart and Brown, 2004; Stewart, Brown, and Chater 2002). However, it's an open question of how the relative amount remaining in an account will influence consumption behavior. We build on this research by revealing how spending from a used (vs. unused) account can affect spending decisions on non-essential items.

Second, we contribute to the research on mental accounting (Cheema and Soman 2006; Heath and Soll 1996; Sussman and Alter 2012; Sussman and O'Brien 2016; Thaler 1985; 1999; Thaler and Sunstein 2008). This research has found that consumers often earmark their accounts for certain purchase goals. We build on this research by revealing that the amount spent in an earmarked account leads consumers to make inferences about their purchase goal, affecting their consumption behavior; that is, consumers are more likely to perceive they have reached their purchase goal if their account has been used.

We also build on work on partitioning (Cheema and Soman 2008; Soman and Cheema 2011). This research has demonstrated that consumers spend fewer resources if there are more physical partitions (Cheema and Soman 2008; Soman and Cheema 2011; Soman, Xu, and Cheema 2010). We build on this research by examining how consumption behavior is affected *within* a mental partition, or within an account.

## *THEORETICAL BACKGROUND*

### *Division of Resources Influences Spending*

Although many resources have a linear construct, for instance, time elapses and consumers spend money continuously, consumers often mentally or physically divide their

resources, affecting their judgments of these resources and the resulting consumption behavior. Prior research has found that these divisions, whether mental or physical, largely affect how people spend their resources (Cheema and Soman 2006; Heath and Soll 1996; Sharif and Woolley 2020; Sussman and Alter 2012; Sussman and O'Brien 2016; Thaler 1985; 1999; Thaler and Sunstein 2008).

In terms of mental divisions of resources, mental accounting research has found that consumers frequently label or “ earmark ” their resources for certain budgetary purposes, designating these accounts as for “ education ” only or for “ food ” only. Earmarking resources can act as a budgeting mechanism, such that consumers attempt to only spend their resources in the manner in which they have been “ earmarked ” or “ labeled, ” increasing self-control (Heath and Soll 1996; Shefrin and Thaler 1988; Thaler 1985).

Physical divisions of resources can also affect people’s consumption behavior. In particular, partitioning an aggregate quantity into smaller units reduces the amount that people consume (Cheema and Soman 2008). For example, consumers ate fewer chocolates when each chocolate was individually wrapped (vs. not wrapped) in a box. The authors suggest that the physical nature of the partition drives this slowed consumption behavior. In particular, before consuming each chocolate, consumers must physically open the wrapper. This small transaction cost draws attention to the partition and adds a temporal delay before consuming it, leading consumers to consume less when resources are partitioned into smaller units (Cheema and Soman 2008; Soman and Cheema 2011; Soman, Xu, and Cheema 2010).

These divisions often create a mental or physical grouping of a set of resources, what we define as an “ account ” in this paper. While past research has manipulated the number of physical divisions (Cheema and Soman 2008; Soman and Cheema 2011), the label of the division (e.g., an

account labeled as education or not) (Cheema and Soman 2006; Heath and Soll 1996; Sussman and Alter 2012; Sussman and O'Brien 2016; Thaler 1985; 1999; Thaler and Sunstein 2008), or the size of the division (Raghubir and Srivastava 2009), we instead examine consumption behavior within an account, holding constant these other factors.

In particular, we examine how spending from a used vs. unused account can affect consumers' future consumption behavior, holding the absolute amount of resources constant. We suggest that when an account is used, and thus has relatively less remaining, consumers are more likely to spend their remaining resources on non-essential items than when it is unused, and has relatively more remaining. In doing so, we are the first to empirically examine how the relative amount remaining in an account affects future consumption behavior, when, and why.

*Different Perceptions of Goal-based Spending Lead to Spending of Resources in A Used vs. Unused Account*

Prior research has found that consumers often make relative judgments about stimuli rather than absolute judgments (Hsee 1996; 1998; Hsee and Leclerc 1998; Hsee et al. 2013; Morewedge et al. 2007; Sharif and Oppenheimer 2016; 2021; Sherman et al. 1978; Stewart et al. 2002). For example, how expensive a car is perceived to be depends on the set of cars that are being evaluated at the same time. If the other cars being evaluated at the same time are less expensive than the target car, then the target car will be perceived as expensive. However, if the other cars are more expensive, then the target car might be perceived as a good deal. As a result, consumers often have different preferences depending on whether they evaluate two different products separately vs. jointly (Hsee 1996; 1998; Hsee and Leclerc 1998; Hsee et al. 2013).

Importantly, these relative judgments are largely influenced by what reference points consumers rely on. For example, the same discount may be perceived to have greater or less impact and thus valued differently depending on the magnitude of the original price (e.g., saving \$5 on a \$15 calculator is valued more than saving \$5 on a \$125 jacket; Tversky and Kahneman 1981). Relatedly, when evaluating one product in isolation, consumers tend to make a judgment about the product based on its attributes that are easy to evaluate, whereas when comparing two products in the same category, consumers make a judgment about the product based on the other product as a reference (Hsee 1996; 1998; Hsee and Leclerc 1998; Hsee et al. 2013).

Building on this research, we suggest that when assessing their resources in a used (vs. unused) account, consumers rely on the original amount *in* the account as a reference point. That is, they engage in a within-account comparison. Although they evaluate their account in isolation (i.e., they are not comparing one account to another separate account), they make a relative judgment *within* the account itself, comparing how much of their account they have remaining, relative to how much of the account *they had originally*. We suggest that the relative amount left in an account influences consumption behavior by affecting consumers' inferences of their past spending. That is, consumers are more likely to infer they have purchased what they set out for when they see that their account is used, and has relatively less remaining in it, versus unused, and has relatively more remaining in it.

Indeed, as mentioned earlier, prior research on mental accounting suggests that consumers often earmark their accounts and pre-commit to budgeting for different purchase goals (Heath and Soll 1996; Shefrin and Thaler 1988; Sussman and O'Brien 2016; Thaler 1985, 1999). That is, consumers may frequently plan to spend their resources in an account in a particular way. For example, consumers may divide their money into separate mental accounts,

allocated for different needs, such as a mental account for “education” and a mental account for “food”. Further, purchase goals, or consumption goals, can even be broader, such as designating an account for hedonic or utilitarian purchase goals (Dhar and Wertenbroch 2000). For example, when resources are received unexpectedly or as a gift, consumers often treat it as a “windfall” gain, planning to spend it on something that they “want” rather than “need” (Arkes et al. 1994; Bodkin 1959). Thus, we suggest that when an account is used, consumers infer that they have reached their purchase goal for that account because it has relatively less remaining.

After consumers perceive that they have bought what they set out for, thus achieving their purchase goal, they may consider their remaining resources to be “extra” or “left over.” That is, consumers originally may reserve the resources in their account for essential purchases related to the purchase goal; however, once they reach this goal, they are more likely to spend the resources on other purchases that are considered less essential; that is items that they want but do not necessarily need. Indeed, prior research has found that while consumers are motivated to reach a goal when it is in sight and feels attainable (Bonezzi, Brendl, and De Angelis 2011; Kivetz, Urminsky, Zheng 2006; Sharif and Shu 2017; 2021; Zhang and Huang 2010), they are less motivated to continue the goal-relevant task after they reach the goal (Heath, Larrick, and Wu 1999) and often switch to a different goal instead (Fishbach, Dhar, and Zheng 2006). Thus, consumers may originally attempt to reach their purchase goal, spending their resources on items that are essential for what they planned to spend it on; however, once they perceive they reached their goal and spent it on what they intended to, they are more likely to spend their remaining resources on other items less essential to reach their goal, such as indulgent items, another goal consumers have been known to have (Dhar and Simonson 1999; Fishbach and Dhar 2005; Kivetz and Simonson 2002).



Thus, overall, we propose that consumers are more likely to spend their resources on non-essential items when spending from a used (vs. unused) account, inferring they have reached their purchase goal because they have relatively less remaining. We will begin by examining the main effect, comparing an unused account, an account that has 100% remaining, to a used account, an account that has a small percentage left across several domains, including credit card reward points, gift cards, checking accounts, and an incentive compatible design. Importantly, we hold constant the absolute total amount of remaining resources across accounts.

We suggest the consumers are more likely to spend their resources on non-essential items with used (vs. unused) accounts because they infer that they have reached their purchase goal when they have a lower relative amount remaining. Thus, after establishing the main effect, we will then reveal at a continuous level that as the relative amount remaining in the used account *decreases*, consumers are increasingly *more* likely to spend the resources in the account. In doing so, we will demonstrate that the effect of a used (vs. unused) account on spending is attenuated if there is a relatively larger amount remaining in the used account.

We will also reveal additional theoretical moderators and practical boundary conditions of our effect. First, we suggest that the effect of a used (vs. unused) account on spending likelihood will be moderated by the extent to which consumers perceive the account has achieved its purchase goal, such that if the account is perceived to not yet have achieved the purchase goal, the effect of a used (vs. unused) account will be attenuated. We suggest that unless consumers are specifically told, or reminded, that they spent their resources on something inconsistent with what they planned to, they are likely to infer that they have reached their purchase goal when their account is used and has relatively less (vs. more) in the account. However, if it is made salient that they spent their original resources on something inconsistent

with what they planned to, consumers will be unlikely to spend their remaining resources on non-essential items, either from a used or an unused account, thus turning off our proposed effect.

Second, we reveal an additional boundary condition: what consumers are considering spending their resources on. We suggest that effect of a used (vs. unused) account on spending likelihood will be moderated by whether the item under consideration is essential or non-essential, such that when considering an essential item, the effect of a used (vs. unused) account will be attenuated. We suggest that consumers are more likely to spend resources from a used (vs. unused) account because they infer that their purchase goal has been accomplished. As a result, they are more likely to feel that they can pursue a different goal and spend the account remaining on non-essential items. However, if a consumer is considering purchasing an essential item instead, we suggest that consumers will be likely to purchase the item, regardless of the amount that they have relatively left in the account.

We will examine the effect of a used (vs. unused) account on the likelihood of spending on a non-essential item (vs. not) in three ways. In Studies 1A, 1B, 4, and 5, we will examine the choice to spend resources on a non-essential item from a used (vs. unused) account vs. from resources without a clear account. Namely, we will examine choice to spend from a rewards account that is used (vs. unused) vs. use cash (without a clear account). We predict that with an account that is used (vs. unused), consumers will perceive that they have reached their purchase goal, and thus be likely to spend resources on non-essential items from that account rather than using another resource, without a clear account. Next, in Studies 1C, 3, 6, 7, and 8, we will examine the likelihood to buy a non-essential item or not buy the item with a used (vs. unused) account. Again, if consumers perceive they have reached their purchase goal with an account that

is used, they should be more likely to choose to buy the item than those with an account that is unused. Lastly, building on the same logic, in Study 2, we will examine when people choose to spend their resources on a non-essential item from an account that is used (vs. unused). We suggest that the longer participants hold on to their resources, the more unwilling they are to spend these items. Thus, we expect that participants will hold onto their resources for a shorter period of time with a used (vs. unused) account when considering a non-essential item to buy.

In ten experimental studies ( $N_{total} = 13,948$ ), nine of which are preregistered, we examine the effect of a used (vs. unused) account on the likelihood of spending resources on non-essential items. In Study 1A, we provide evidence for the main effect of a used (vs. unused) account in the context of credit card reward programs. In Study 1B, we reveal that the used account effect is due to a within-account comparison, rather than due to a comparison to any large reference point. In Study 1C, we extend our findings in the domain of checking accounts and show the effect also holds for non-reward accounts (e.g., checking accounts that are earmarked for educational expenses). To test the robustness of the effect, Study 2 replicates the used account effect in an incentive-compatible behavioral experiment of online shopping. In Studies 3 and 4, we demonstrate that indeed consumers are more likely to spend their remaining resources on non-essential items with used (vs. unused) accounts because there is relatively less remaining in the account. We thus demonstrate that the proportion of the account remaining moderates the effect of a used (vs. unused) account. Study 5 demonstrates that the effect of a used (vs. unused) account on purchase behavior is mediated by the perception of account reaching a purchase goal. In Studies 6 and 7, we manipulate whether the past spending from an account has achieved its purchase goal (or not), revealing that the perception of purchase goal being reached or not

moderates the effect of a used (vs. unused) account. Finally, Study 8 reveals that if the item under consideration is essential (vs. non-essential) our effect is attenuated.

## STUDY 1A: SPENDING OF RESOURCES IN A USED ACCOUNT – CREDIT REWARD PROGRAMS

Study 1A examines the effect of a used (vs. unused) account on spending decisions of credit card reward points. Consumers can choose to either spend their reward points on a non-essential item or hold onto them for future use.

### *Methods*

This study was pre-registered (<https://aspredicted.org/blind.php?x=3k5ei3>) for 600 HITs on Amazon Mechanical Turk (MTurk).<sup>1</sup> Six hundred and four MTurk workers completed the study and were randomly assigned to one of the two between-subject conditions: a used vs. unused account. In the *used account* condition, participants imagined that they had accumulated 100,000 points in a credit card reward program. They had spent 70,000 points earlier this year and now had 30,000 points available. In the *unused account* condition, participants imagined that they had accumulated 30,000 points in a credit card reward program, had spent 0 points this year so far, and now had still 30,000 points available.<sup>23</sup>

All participants then imagined that they received an email advertisement that they could use these 30,000 points to buy some running shoes. Their current running shoes were still in

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<sup>1</sup> We do not recruit the same participants in any of our studies that are conducted within 6 months using the same stimuli (e.g., gift cards, credit cards, or checking account). For studies that differ in recruitment time for at least 6 months or use different stimuli, we allow the same participants to participate in both studies.

<sup>2</sup> We included additional preregistered analyses in the Web Appendix for all studies.

<sup>3</sup> To confirm that participants did not make different inferences about how difficult it was to acquire the points in the account, we ran a post-test ( $N = 200$ ) examining how long participants perceived it would take them to acquire the points between conditions; we did not find significant differences between the used and unused account conditions ( $M_{\text{used}} = 5.38$ ,  $SD = 1.20$  vs.  $M_{\text{unused}} = 5.57$ ,  $SD = 1.12$ ;  $t(189) = -1.09$ ,  $p = .28$ ).

good condition, but the new running shoes were lighter than their current running shoes. Next, participants were asked, “Would you use your points to buy these running shoes or instead use your cash and save your points for a different reward later?” on a 100-point scale from 0 (*Very likely to use cash to buy these running shoes*) to 100 (*Very likely to use points to buy these running shoes*). Thus, participants had a choice to spend on a non-essential item from a reward program (which we manipulated to be a used vs. unused account) vs. use cash (without a clear account). Since participants still had their current running shoes in good shape, the new shoes are non-essential, namely, something they want but not need.

### *Results*

As preregistered, we excluded nineteen participants who failed the attention check, so data were analyzed with the remaining 585 individuals (45% females;  $M_{age} = 38.65$ ,  $SD = 12.76$ ,  $Range = [18, 89]$ ). The results were as predicted: participants were more likely to spend the 30,000 reward points on the running shoes in the used account condition than those in the unused account condition ( $M_{used} = 66.18$ ,  $SD = 36.82$  vs.  $M_{unused} = 59.41$ ,  $SD = 38.21$ ,  $d = .18$ ;  $b_{used} = 6.77$ ,  $SE = 3.10$ ,  $t(583) = 2.18$ ,  $p = .029$ , 95% CI of the difference = [.68, 12.87],  $\beta = .09$ ).

### *Discussion*

In Study 1A, we find evidence of our main effect: consumers are more likely to spend resources from a used account than from an unused account on a non-essential item.

## STUDY 1B: SPENDING OF RESOURCES ONLY IN THE SAME USED ACCOUNT

We have illustrated evidence supporting the effect of a used (vs. unused) account in Study 1A in the contexts of credit card reward programs. We propose that the effect of a used (vs. unused) account is due to consumers engaging in a *within*-account comparison, comparing

the amount that they have in their account now to the amount that they had originally, inferring they have reached their purchase goal. That is, the lower relative amount left in the account leads consumers to infer that they have reached their purchase goal, increasing spending on non-essential items. However, one alternative explanation for our findings is that in Study 1A, consumers merely relied on a large reference point in the used (vs. unused) condition, leading them to perceive the amount remaining in the used account to be smaller (Morewedge et al. 2007; Sherman et al. 1978; Stewart et al. 2002). That is, the effect is driven by a contrast effect, rather than due to the lower relative amount remaining in the used (vs. unused) account. If this alternative explanation is true, the addition of a larger reference point in the unused condition should turn off the used account effect. However, if instead, we find that consumers are still more likely to spend with a used (vs. unused) account, regardless of the presence of a larger reference point outside the account in the unused account condition, we can rule out this alternative explanation.

### *Methods*

This study was pre-registered (<https://aspredicted.org/blind.php?x=h8ch58>) for 1200 HITs on MTurk. One thousand one hundred and ninety-seven MTurk workers completed this study and were randomly assigned to one of the three between-subject conditions: a used account, an unused account with a greater reference point, and an unused account without a greater reference point. In the *used account* condition, participants imagined that they had accumulated 100,000 points in a credit card reward program, had spent 70,000 points earlier this year, and now had 30,000 points available. In the *unused account without a greater reference* condition, participants imagined that they had accumulated 30,000 points in a credit card reward program, had spent 0 points this year so far, and now had still 30,000 points available. In the

*unused account with a greater reference point* condition, participants imagined that they had two credit cards – Credit Card A and Credit Card B. They had accumulated 70,000 points in Credit Card A, spent 70,000 of these points, and no longer had any points available in Credit Card A. They had also accumulated 30,000 points in Credit Card B, had spent 0 of these points so far, and had still 30,000 points available in Credit Card B. Importantly, they were told that the points in both programs can be applied to the **same rewards**.

All participants were then asked the same questions as Study 1A about how likely they would be to use the 30,000 points to purchase a pair of running shoes (see exact questions in Study 1A).

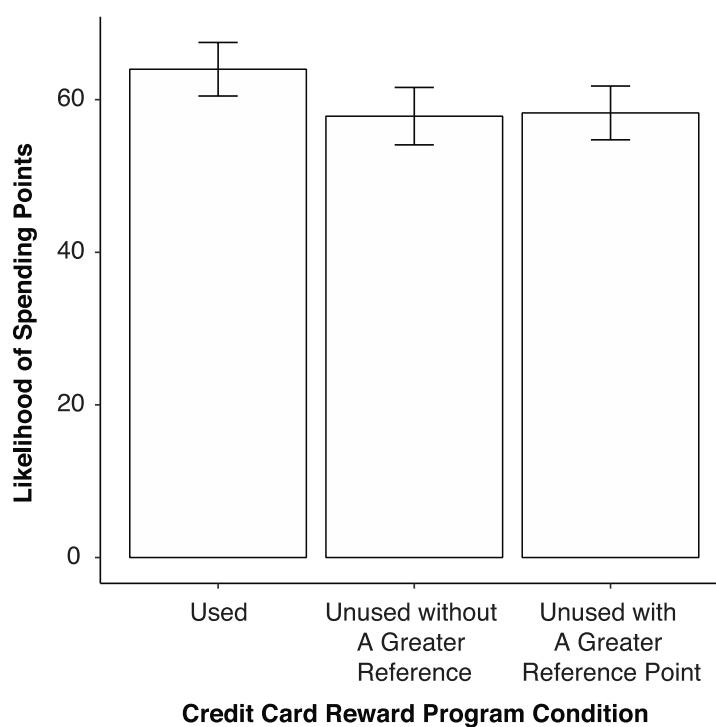
### *Results*

As preregistered, we excluded fifty-three participants who failed the attention check, so data were analyzed with the remaining 1144 individuals (53% females;  $M_{\text{age}} = 32.03$ ,  $SD = 11.32$ , Range = [18, 78]). We conducted a linear regression predicting the likelihood of spending the 30,000 reward points on a non-essential item from two dummy variables representing the account conditions with the used account condition as a reference group. The results were as predicted: participants were more likely to spend the 30,000 reward points on the running shoes in the used account condition than those in the unused account without a greater reference point condition ( $M_{\text{used}} = 63.98$ ,  $SD = 34.98$  vs.  $M_{\text{unused without a greater reference point}} = 58.26$ ,  $SD = 34.99$ ,  $d = .16$ ;  $b_{\text{unused without a greater reference point}} = -5.72$ ,  $SE = 2.59$ ,  $t(1141) = -2.21$ ,  $p = .027$ , 95% CI of the difference = [-10.79, -.64],  $\beta = -.08$ ). Importantly, participants were also more likely to spend the 30,000 reward points on the running shoes in the used condition than those in the unused with a greater reference point condition ( $M_{\text{used}} = 63.98$ ,  $SD = 34.98$  vs.  $M_{\text{unused with a greater reference point}} = 57.83$ ,  $SD = 37.27$ ,  $d = .17$ ;  $b_{\text{unused with a greater reference point}} = -6.15$ ,  $SE = 2.59$ ,  $t(1141) = -2.37$ ,  $p$

= .018, 95% CI of the difference = [-11.23, -1.07],  $\beta = .08$ ). Further, the likelihood of spending the 30,000 reward points on the running shoes did not differ between these two unused account conditions ( $d = .01$ ,  $p = .88$ , 95% CI of the difference = [-5.52, 4.66]).

FIGURE 1<sup>4</sup>

STUDY 1B: THE PROPORTION OF PARTICIPANTS WHO CHOSE TO SPEND THEIR  
30,000 POINTS TO PURCHASE THE RUNNING SHOES



*Discussion*

We replicated our results from Study 1A that a used account leads to a greater likelihood of spending resources on a non-essential item than an unused account. Further, the results of this study ruled out an alternate explanation: the mere presence of a greater reference point leads to

<sup>4</sup> All error bars in figures are 95% confidence intervals.



our proposed effect. We found that even when an unused account had a greater reference point outside the account, consumers were still less likely to spend resources from it on a non-essential item relative to those with a used account. These results further suggest that instead the lower relative amount remaining in the used account drives the effect.

#### STUDY 1C: THE EFFECT OF A USED EDUCATIONAL ACCOUNT ON CONSUMPTION

Studies 1A and 1B have shown the effect of a used vs. unused account in the context of credit card reward programs. Next, in Study 1C, we explore whether the effect still holds for non-reward related money, such as a checking account earmarked for educational expenses (e.g., for learning a new language).

##### *Methods*

This study was pre-registered ([https://aspredicted.org/CPR\\_4DL](https://aspredicted.org/CPR_4DL)) for 800 HITs on Prolific Academics. Seven hundred and ninety-nine Prolific workers completed this study and were randomly assigned to one of the two between-subject conditions: a used vs. unused educational checking account. In the *used account* condition, participants imagined that they kept the majority of their money in their savings account and also had set up an account to use for educational expenses. They were trying to learn a language and had designated this money to be used for expenses towards learning this language, such as for tutoring and language learning books. They had \$100 in their educational account, spent \$75 earlier this month practicing the language with their tutor, and now had \$25 available in their educational account. In the *unused account* condition, participants imagined that they had set up two accounts, Account A and Account B, to use for educational expenses. They were trying to learn a language and had designated money in Account A to be used for tutoring expenses and Account B for other

language learning expenses, such as language learning books. They had \$75 in Educational Account A and \$25 in Educational Account B, spent \$75 earlier this month practicing the language with their tutor, and now had \$0 remaining in Educational Account A. They also had \$25 in Educational Account B at the same bank for other language resources such as language learning books, had spent \$0 from Educational Account B this month so far, and had still \$25 available.

All participants imagined that it was Thursday night and they were very tired and may not want to cook any food. They received an email advertisement about takeout options from one of their favorite restaurants, costing on average \$25 with delivery charges. They had some leftovers at home that they could warm up, but they also really liked the food from this restaurant. They had exhausted their budget for take-out this month. They were then asked how likely they would spend \$25 from their educational account to order takeout from this restaurant on a 100-point scale from 0 (*Not at all likely*) to 100 (*Very likely*). Since participants set up their checking account for educational expenses to learn a new language, the takeout is non-essential, namely, something they want but did not need.

### *Results*

As preregistered, we excluded eleven participants who failed the attention check, so data were analyzed with the remaining 788 individuals (49% females;  $M_{\text{age}} = 36.15$ ,  $SD = 13.11$ , Range = [18, 80]). We conducted a linear regression predicting the likelihood of spending from a dummy variable that representing the used (vs. unused) educational checking account condition with the unused account condition as the reference group. Participants were more likely to spend the \$25 on ordering takeout in the used education checking account condition than those in the unused educational checking account condition ( $M_{\text{used}} = 24.64$ ,  $SD = 28.74$  vs.  $M_{\text{unused}} = 19.81$ ,

SD = 25.61,  $d = .18$ ;  $b_{\text{used}} = 4.84$ ,  $SE = 1.94$ ,  $t(786) = 2.49$ ,  $p = .012$ , 95% CI of the difference = [1.03, 8.64],  $\beta = .09$ ).

### *Discussion*

In Study 1C, we extend the effect of a used (vs. unused) account on consumption to non-reward resources – educational checking account. We find that consumers are more likely to spend money from a used educational checking account than from an unused educational checking account on a non-essential item.

## STUDY 2: THE EFFECT OF A USED ACCOUNT ON ONLINE SHOPPING

In this study, we move to an incentive compatible design to further test our main effect of a used (vs. unused) account in an online shopping setting. We manipulated remaining reward points in a used (vs. unused) account while holding constant the absolute amount of reward points, and absolute spending of reward points, across conditions. We examined when people choose to spend their resources on a non-essential item (e.g., gummy bears, chocolate peanut butter chia bar) with a used (vs. unused) account. We suggest that the longer participants hold on to their resources, the more unwilling they are to spend these items. Thus, we predicted consumers would spend their reward points earlier from a used account than those from an unused account.

### *Methods*

Fifteen hundred participants completed the study and were randomly assigned to one of the two between-subject conditions: a used vs. unused account. In the *used account* condition, participants were endowed with a reward account that had 1000 reward points. In the *unused account* condition, participants were endowed with two reward accounts: Account A had 900

points and Account B had 100 points and they were explicitly told that the points in Accounts A and B can be applied for the same rewards. All participants were asked to spend their reward points on products that they would like to purchase in reality. They were told that 5 participants would be randomly selected to receive a bonus to obtain the products they choose and thus the best strategy would be to choose the products that reflect their true preference. There were 20 products in total (approximately equally valued ranging from \$15 to \$20), such as Embroidered Natural Lumbar Accent Throw Pillow Cover (\$15.50), Pineapple Shaped Bamboo Serving and Cutting Board (\$19.99), Wooden Wood Clock (\$15.99), and Etched Wooden Coaster Set (\$19.98). One product was presented each time sequentially in a randomized order. Participants viewed one product at a time and indicated whether they would like to purchase that product or not. Each product cost 450 reward points and they could purchase two of these products.

After two purchases, participants in the used account condition read, “You have spent 900 points on two items from your reward account and you have 100 points in your account.” Participants in the unused account condition read, “You have spent 900 points on two items from your Account A. There are no points left in Account A. You have not spent any points of your Account B. You still have 100 points in your Account B.” We provided participants in both conditions with six products (approximately equally valued about \$2) sequentially to spend the remaining 100 reward points on, such as YumEarth Gluten Free Gummy Bears (\$1.99), Health Warrior Chocolate Peanut Butter Chia Bar (\$1.29), and Suave Antiperspirant Deodorant (\$1.99). If participants did not make any purchase until only one product remained, they were forced to spend their reward points on the remaining product. Our primary dependent variable was when participants chose to spend their resources on a non-essential item. We suggest that the longer participants hold on to their resources, the more unwilling they are to spend these items. We

expect that participants in the unused condition will be more likely to receive the last item presented, as they keep deferring their choice for another option, perhaps one they consider to be more essential. We also examined continuously how long participants held onto their remaining points before spending them on one of the 100-point options.

### *Results*

We excluded eight participants who failed the attention check question, so data were analyzed with the remaining 1492 individuals (50% females;  $M_{\text{age}} = 34.93$ ,  $SD = 11.77$ , Age = [18, 84]).

*A Used Account Increases the Likelihood of Spending Reward Points on Non-Essential Items.* We examined reward point spending behavior by comparing the likelihood of holding onto the remaining resources until the last item across conditions. We conducted a logistic regression predicting whether participants spent their remaining 100 reward points on the last choice (i.e., the 6<sup>th</sup> choice) or spent them earlier from a dummy variable representing the conditions with the used account condition as a reference group. As predicted, we found that participants were more likely to hold onto the remaining 100 reward points until the last choice in the unused condition than in the used condition ( $M_{\text{used}} = 48.2\%$  vs.  $M_{\text{unused}} = 55.9\%$ , Cohen's  $h = .15$ ;  $b_{\text{unused}} = .31$ ,  $SE = .10$ ,  $t(1490) = 2.98$ ,  $p = .003$ , 95% CI of the difference = [.11, .51],  $\beta = .31$ ).<sup>5</sup>

TABLE 1. THE NUMBER OF PARTICIPANTS WHO HELD ONTO REWARD POINTS AT EACH PERIOD BETWEEN TWO ACCOUNT CONDITIONS

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<sup>5</sup> We collected data on two consecutive days, so we ran the same regression including a dummy variable indicating the two waves. We found the same pattern that participants were more likely to hold onto the remaining 100 reward points until the last choice in the unused condition than in the used condition ( $b_{\text{unused}} = .31$ ,  $SE = .10$ ,  $t(1489) = 2.93$ ,  $p = .003$ , 95% CI of the difference = [.10, .51],  $\beta = .31$ ).

| Holding on Period | Unused Account | Used Account |
|-------------------|----------------|--------------|
| 1                 | 92             | 126          |
| 2                 | 61             | 65           |
| 3                 | 64             | 72           |
| 4                 | 53             | 71           |
| 5                 | 54             | 59           |
| 6                 | 410            | 365          |

The same pattern was observed with the number of periods participants held onto their points: participants in the unused account condition held onto the remaining points longer than those in the used account condition (Table 1;  $M_{\text{used}} = 4.28$ ,  $SD = 1.97$  vs.  $M_{\text{unused}} = 4.56$ ,  $SD = 1.88$ ,  $d = .15$ ;  $b_{\text{unused}} = .29$ ,  $SE = .10$ ,  $t(1490) = 2.86$ ,  $p = .004$ , 95% CI of the difference =  $[.09, .48]$ ,  $\beta = .07$ ).<sup>6</sup> The results further provided behavioral evidence for the used account effect.<sup>7</sup>

### *Discussion*

Study 2 replicated the effect of a used (vs. unused) account on spending behavior in an incentive compatible online shopping environment. We found results that were consistent with our prediction that participants with a used account held onto their points for a shorter period of time than those with an unused account.

Furthermore, in this study, every participant spent the same amount of reward points and we only categorize the account as a used vs unused account. An alternative explanation for our

<sup>6</sup> We also ran the same regression including a dummy variable indicating the two waves and found the same pattern: participants in the unused account condition held onto the remaining points longer than those in the used account condition ( $b_{\text{unused}} = .28$ ,  $SE = .10$ ,  $t(1489) = 2.81$ ,  $p = .005$ , 95% CI of the difference =  $[.08, .47]$ ,  $\beta = .07$ ).

<sup>7</sup> We also conducted Kaplan-Meier analysis predicting the proportion of participants who spent the remaining 100 reward points earlier (rather than until the last product) by comparing the difference of survival curves (i.e., holding onto the points until the last product) across conditions. The results revealed a significant survival curve difference between these two account conditions: more participants in the unused account condition held onto their reward points until the last product ( $X^2(1) = 9.19$ ,  $p = .002$ ).

finding is that consumers make inferences that they have not yet spent those points because they are more valuable. However, if the hypothesis of spending norm holds, we should not observe difference in spending behavior between the used and unused account conditions in this study.

### STUDY 3: HOW DOES THE PROPORTION OF THE ACCOUNT REMAINING MODERATE THE EFFECT OF A USED ACCOUNT?

In Studies 1-2, we demonstrated that consumers are more likely to spend resources on a non-essential item in a used account than those in an unused account. We suggest this is because consumers infer they have reached their purchase goal when spending from a used account, because there is relatively less remaining. If this theory holds, we should find that the less there is in a used account, the more likely consumers are to spend their resources on non-essential items. We tested this in Study 3.

In particular, in Study 3, we continuously manipulate the relative amount left in a used account, examining the impact of having 60%, 40%, and 20% left relative to an account that has 100% remaining, holding constant the absolute amount of resources in the account. We expect that consumers will be more likely to spend their resources on non-essential items the less they have relatively in their account. We measure the likelihood of purchasing a non-essential item with a used (vs. unused) account. The non-essential item is a tasty drink at a clothing store, an item that consumers do not need and also an item they do not plan to purchase from a clothing store. Lastly, we will generalize the effect of a used vs. unused account to a different domain – money on gift cards.

#### *Methods*

This study was pre-registered (<http://aspredicted.org/blind.php?x=hp49ht>) for 1200 HITs on MTurk. Twelve hundred and four MTurk workers completed this study and were randomly assigned to one of the 3 (account remaining: \$24, \$16, vs \$8) x 2 (gift card condition: used vs. unused) between-subject conditions. In the *used gift card* conditions, participants were told that they had received one \$40 gift card to a clothing store from one of their friends. They had spent \$16, \$24 or \$32 of this gift card last month, and now had \$24, \$16, or \$8 remaining on the gift card, respectively. That is, the account had been used and the proportion of the account remaining was 60%, 40%, and 20% in the used gift cards with \$24, \$16, and \$8 conditions, respectively. In the *unused gift card* conditions, participants were told that they received a \$24, \$16, or \$8 gift card to a clothing store from one of their friends in the \$24, \$16, and \$8 conditions, respectively. As these gift cards were unused, they all had 100% remaining in the account. To hold constant prior spending between the used and unused conditions, participants in the unused conditions were also told that prior to receiving this gift card, they had spent \$16, \$24, or \$32 at the same clothing store last month.<sup>8</sup>

All participants were then asked “As you are checking out, you see that the clothing retailer is selling some tasty drinks (e.g., smoothie, latte). All of the drinks cost \$5 and you can use your gift card to pay for it. How likely would you be to buy the tasty drink now with your gift card?” on a 100-point scale from 0 (*Not at all likely*) to 100 (*Very likely*).

### *Results*

First, we assessed whether consumers are indeed more likely to spend their resources when the account has relatively less in it. We conducted a linear regression predicting the

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<sup>8</sup> To confirm that participants did not make different inferences about how expensive the items at the clothing store are, we ran a post-test ( $N = 198$ ) examining the perceived expensiveness between the used and unused \$8 gift card conditions; we did not find significant differences between the used and unused \$8 gift card conditions ( $M_{\text{used}} = 3.09$ ,  $SD = 1.27$  vs.  $M_{\text{unused}} = 2.99$ ,  $SD = 1.09$ ;  $t(192) = .60$ ,  $p = .55$ ).



likelihood of spending from a dummy variable representing the used (= 1) vs. unused (= 0) account condition, a linear coding representing the account remaining condition (\$24 = 1, \$16 = 0, and \$8 = -1), and their interaction. We found a significant account remaining x used (vs. unused) interaction ( $b = -8.73$ ,  $SE = 2.63$ ,  $t(1125) = -3.32$ ,  $p < .001$ , 95% CI of the difference = [-13.90, -3.58],  $\beta = -.14$ ). An analysis of simple effects revealed that when the gift card is used, participants were more likely to spend \$5 on purchasing the tasty drink as the relative amount remaining in the account *decreased* ( $b = -7.99$ ,  $SE = 1.88$ ,  $t(1125) = -4.26$ ,  $p < .001$ , 95% CI of the difference = [-11.68, -4.31],  $\beta = -.18$ ). By contrast, when the gift card is unused, the linear trend was not significant ( $b = .75$ ,  $SE = 1.84$ ,  $t(1125) = .41$ ,  $p = .69$ , 95% CI of the difference = [-2.87, 4.36],  $\beta = .017$ ).

This analysis suggests that the remaining amount in the account influences consumers spending behavior more than the absolute amount. Indeed, in the unused account condition, although there are absolutely different amounts remaining in the accounts, there is no difference in spending behavior as the accounts are all completely full, having the same relative amount left (100% remaining). However, in the used account, when there were differences in the relative amount left, consumers were more likely to spend their resources the less that they have remaining.

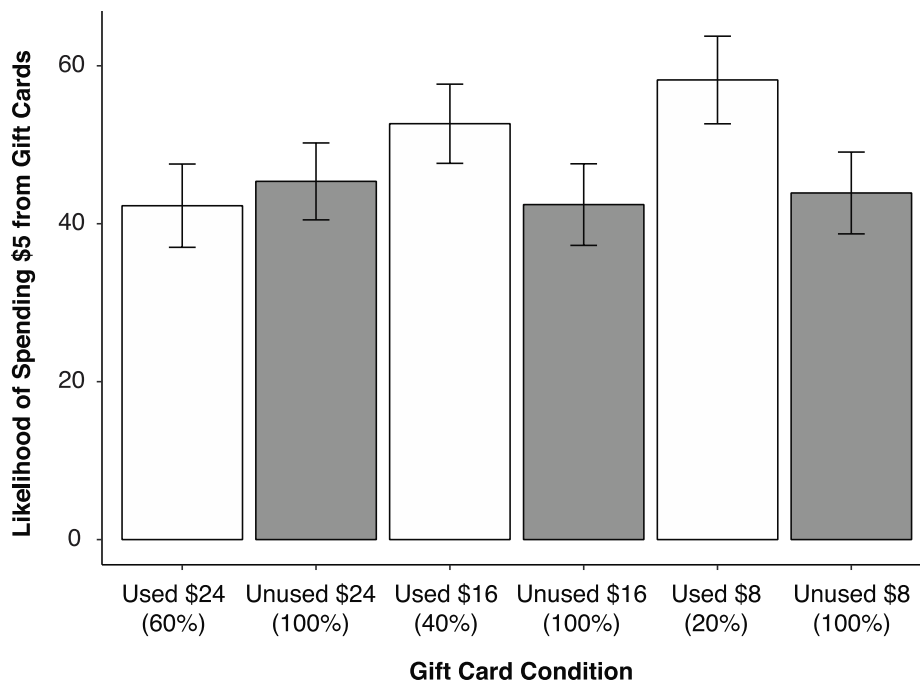
Next, we examined at what relative amount remaining in a used account, are consumers equally likely to purchase the tasty drink as when considering spending from an unused account. That is, at what point do consumers consider used accounts to be relatively full, and thus similar to unused accounts?

We found that there was less of a difference between a used account with 60% remaining and an unused account (with 100% remaining), then there was a used account with 20% or 40%

remaining and an unused account. In particular, we found a significant 2 (\$24 condition-60% remaining vs. \$8 condition-20% remaining) x 2 (used vs. unused) interaction ( $b = -17.44$ ,  $SE = 5.27$ ,  $t(1123) = -3.31$ ,  $p < .001$ , 95% CI of the difference =  $[-27.77, -7.11]$ ,  $\beta = -.18$ ). An analysis of simple effects revealed that when the gift cards with \$8 remaining were under consideration and there was 20% left in the used account, participants were significantly more likely to spend \$5 to purchase the tasty drink from their used gift cards with \$8 remaining than those with their unused gift cards with \$8 ( $M_{\text{used } \$8 (20\%)} = 58.20$ ,  $SD = 37.83$  vs.  $M_{\text{unused } \$8} = 43.89$ ,  $SD = 36.02$ ,  $d = .39$ ;  $b = 14.31$ ,  $SE = 3.75$ ,  $t(1123) = 3.82$ ,  $p < .001$ , 95% CI of the difference =  $[6.96, 21.66]$ ,  $\beta = .20$ ). However, when the gift cards with \$24 remaining were under consideration and there was 60% left in the used account, there was no significant difference in the likelihood of spending on the tasty drink in the used (vs. unused) account ( $M_{\text{used } \$24 (60\%)} = 42.24$ ,  $SD = 36.63$  vs.  $M_{\text{unused } \$24} = 45.37$ ,  $SD = 34.30$ ,  $d = .09$ ;  $b = -3.13$ ,  $SE = 3.70$ ,  $t(1123) = -.85$ ,  $p = .40$ , 95% CI of the difference =  $[-10.38, 4.13]$ ,  $\beta = -.04$ ). We also found a similar significant 2 (\$24 condition-60% remaining vs. \$16 condition-40% remaining) x 2 (used vs. unused) interaction ( $b = -13.37$ ,  $SE = 5.22$ ,  $t(1123) = -2.56$ ,  $p = .011$ , 95% CI of the difference =  $[-23.62, -3.12]$ ,  $\beta = -.14$ ).

## FIGURE 2

### STUDY 3: THE LIKELIHOOD OF SPENDING THE MONEY OF THE GIFT CARD ON A NON-ESSENTIAL ITEM ACROSS CONDITIONS



### *Discussion*

We found additional evidence that indeed consumers are more likely to spend resources from used accounts due to them having relatively less resources available in them. While consumers were insensitive to the absolute amount remaining in the unused account, they were increasingly more likely to spend their resources the less they had available in the used account. As a result, we found that the effect of a used (vs. unused) account on purchase likelihood can be moderated by the proportion of the account remaining, such that the effect is attenuated if there is a relatively larger amount remaining in the used account.

### STUDY 4: THE PERCEPTION OF A USED ACCOUNT IS RELATIVE

In Study 4, we will further examine if indeed the *relative*, rather than the absolute amount, in the used account moderates the effect by holding constant the absolute amount of the account remaining and only manipulating the proportion of the account remaining relative to the

original amount in the same account. We will ask participants to make a choice to spend from a reward program (used vs. unused) vs. use cash (without a clear account) on a non-essential item (i.e., new running shoes that are lighter than the current running shoes, which is what consumers want but do not need).

### *Methods*

This study was pre-registered (<https://aspredicted.org/blind.php?x=d26x7m>) for 1200 HITs on MTurk. One thousand two hundred and four MTurk workers completed this study and were randomly assigned to one of the three between-subject conditions: an unused account, a used account with 25% account remaining, vs. a used account with 75% remaining. In the *unused account* condition, participants imagined that they had two credit cards – Credit Card A and Credit Card B. They had accumulated 90,000 points in Credit Card A, had spent 90,000 of these points, and no longer had any points available in Credit Card A. They had also accumulated 30,000 points in Credit Card B, had spent 0 of these points so far, and had still 30,000 points available in Credit Card B. They were told that the points in both programs can be applied to the same rewards. In the *used account with 25% remaining* condition, participants imagined that they had accumulated 120,000 points in a credit card reward program, had spent 90,000 of these points this year so far, and now had still 30,000 points available in the reward program. In the *used account with 75% remaining* condition, participants imagined that they had two credit cards – Credit Card A and Credit Card B. They had accumulated 80,000 points in Credit Card A, had spent 80,000 of these points, and no longer had any points available in Credit Card A. They had also accumulated 40,000 points in Credit Card B, had spent 10,000 of these points so far, and had still 30,000 points available in Credit Card B. They were told that the points in both credit card programs can be applied to the same rewards. Across conditions, all

participants had initially a total of 120,000 reward points, had spent 90,000 points, and had 30,000 points available. Thus, participants in the unused account, used 75% account, and used 25% account conditions had 100%, 75%, and 25% account remaining in the account, respectively, that each had the 30,000 points.

All participants were then whether they would use their points (=1) or cash (=0) to buy these running shoes. We expected that participants in the used 25% account condition will be more likely to spend their resources on a non-essential item than those in the used 75% account condition and those in the unused condition.

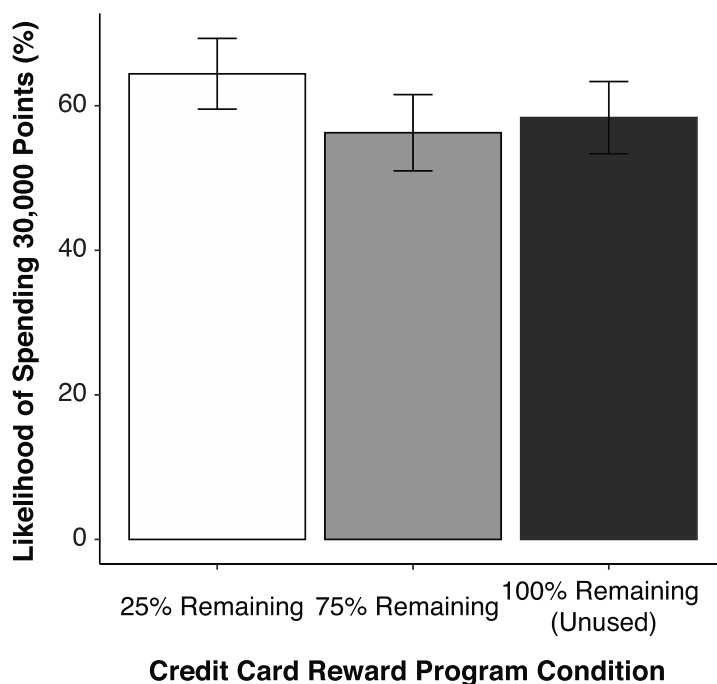
### *Results*

As preregistered, we excluded one hundred and thirteen participants who failed the attention check, so data were analyzed with the remaining 1091 individuals (48% females;  $M_{\text{age}} = 36.67$ ,  $SD = 12.44$ ,  $\text{Range} = [18, 82]$ ). We conducted a logistic regression predicting the likelihood of spending the 30,000 reward points on a non-essential item from two dummy variables representing the account conditions with the used account with 25% remaining condition as a reference group. The results were as predicted: participants were significantly more likely to spend the 30,000 reward points on the running shoes in the used account with 25% remaining condition than those in the used account with 75% remaining condition ( $P_{\text{used25\%}} = 64.42\%$ , vs.  $P_{\text{used75\%}} = 56.27\%$ , Cohen's  $h = .17$ ;  $b_{\text{used75\%}} = -.34$ ,  $SE = .15$ ,  $t(1088) = -2.22$ ,  $p = .026$ , 95% CI of the difference =  $[-0.64, -0.04]$ ,  $\beta = -.16$ ) and were also marginally significantly more likely than the unused account condition ( $P_{\text{unused}} = 58.36\%$ , Cohen's  $h = .12$ ;  $b_{\text{unused}} = -.26$ ,  $SE = .15$ ,  $t(1088) = -1.70$ ,  $p = .089$ , 95% CI of the difference =  $[-.55, .04]$ ,  $\beta = -.12$ ). The likelihood of spending the 30,000 reward points on the running shoes did not differ between the unused account and the used account with 75% remaining conditions (Cohen's  $h = .04$ ,  $p = 0.57$ ,

95% CI of the difference = [-.21, .38]). Thus, we replicate our effect that consumers are more likely to spend the remaining resources on a non-essential item in a used than in an unused account, even though the absolute amount of remaining resources was exactly the same across conditions. Moreover, this effect is attenuated when the used account is relatively full (e.g., has 75% remaining).

FIGURE 3

STUDY 4: THE LIKELIHOOD OF SPENDING THE 30,000 POINTS ON A NON-ESSENTIAL ITEM FROM CREDIT CARD REWARD PROGRAMS



*Discussion*

Controlling for the total spending and the absolute amount of the account remaining across conditions, Study 4 illustrates that the effect of a used (vs. unused) account is moderated by the *relative* proportion of the account remaining, rather than the absolute amount. This finding

further supports our theory that participants with a used account are likely to make a within-account comparison, and thus infer that their purchase goal has been reached in that account due to having relatively less remaining in the account. As a result, when the account is relatively full (e.g., 25% of the original account has been spent), consumers are unlikely to perceive their purchase goal as being reached, and thus unlikely to spend its remaining resources on a non-essential item from that used account.

### STUDY 5: CREDIT CARD REWARD PROGRAMS - MEDIATION

Thus far, we have revealed that consumers are more likely to spend resources from a used (vs. unused) account because there is relatively less available in a used (vs. unused) account. We suggest that the perception of having relatively less in an account drives consumers to infer that they have reached a purchase goal, leading them to spend their resources on non-essential items. In Study 5, we examine further evidence for this proposed process.

#### *Methods*

This study was preregistered ([https://aspredicted.org/BRN\\_S1Y](https://aspredicted.org/BRN_S1Y)) for 800 HITs on MTurk. Eight hundred and six workers on MTurk completed this study and were randomly assigned to one of the two between-subject conditions: a used vs. unused account. In the *used account* condition, participants imagined that they had accumulated 100,000 points from a credit card reward program over the past six months, spent 70,000 points earlier this year on something they like, and now had 30,000 points available. In the *unused account* condition, participants imagined that they had two credit card reward programs from the same bank, had accumulated 70,000 points in Credit Card A, and 30,000 points in Credit Card B over the past six months. They spent 70,000 of these points earlier this year on something they like, no longer had points

in Credit Card A, and still had 30,000 points in Credit Card B. In addition, to avoid potential confounds and inferences of the difficulty in accumulating points, we explicitly told participants with two credit cards that they started to accumulate points at the same time in both credit card reward programs and in both programs, for each dollar they spent, they could accumulate 5 reward points.

All participants were then asked about the extent to which they perceive they reached their purchase goal (Cronbach's alpha = .85; hereinafter  $\alpha$ ) from 0 (*Not at all*) to 100 (*Very much*): "At this point would you feel like you have purchased what you were hoping to with these points?" and "To what extent would you feel that you received what you originally sought out to get?" We averaged the two measures to create an index of purchase goal account.

Following this, participants imagined that they received an email advertisement from an electronics store that they could use their points to purchase some headphones they have been wanting. The headphones cost about 30,000 points. Their old headphones worked perfectly fine, but the new headphones had extra capabilities that they have been wanting. Then they were asked, "Would you use your points to purchase the headphones?" On a 100-point scale from 0 (*Not at all likely*) to 100 (*Very likely*). That is, we measure the likelihood of purchasing new headphones with a used (vs. unused) account, namely, new headphones with extra capabilities that consumers want but do not need.

### *Results*

Data were analyzed with the 767 individuals who completed the study (59.3% females;  $M_{age} = 40.85$ ,  $SD = 12.52$ ,  $Range = [18, 89]$ ).

*A Used Account Increases the Likelihood of Spending Available Resources.* As predicted, participants were more likely to purchase the headphones using their reward points in the used



account condition than those in the unused account condition ( $M_{\text{used}} = 56.81$ ,  $SD = 36.23$  vs.  $M_{\text{unused}} = 48.14$ ,  $SD = 36.79$ ,  $d = .24$ ;  $b_{\text{used}} = 8.67$ ,  $SE = 2.64$ ,  $t(765) = 3.29$ ,  $p = .001$ , 95% CI of the difference = [3.49, 13.84],  $\beta = .12$ ).

*Effects of A Used Account on the Perception of Goal-based Spending.* Aligned with our theorizing, we found that participants in the used account condition were more likely to perceive that their account has reached its purchase goal than those in the unused account condition ( $M_{\text{used}} = 70.93$ ,  $SD = 20.75$  vs.  $M_{\text{unused}} = 43.97$ ,  $SD = 28.28$ ,  $d = 1.09$ ,  $b = 26.96$ ,  $SE = 1.78$ ,  $t(765) = 15.11$ ,  $p < .001$ , 95% CI = [23.46, 30.46],  $\beta = .48$ ).

Further, we conducted a mediation analysis using the bootstrap method with 10,000 samples to test potential processes: how the extent to which the account has reached its purchase goal mediates the effect of a used (vs. unused) account on purchasing the headphones with credit card reward points (SPSS PROCESS macro, Model 6; Hayes, 2013). We found the effect of a used (vs. unused) account on the likelihood of spending the points on the headphones was significantly mediated by the extent to which the purchase goal has been reached ( $a \times b = 4.49$ ,  $SE = 1.52$ , 95% CI = [1.55, 7.53]). That is, compared to the unused account condition, participants in the used account condition were more likely to infer that the account has accomplished its purchase goal and spend the credit card reward points on purchasing the headphones as a result.

### *Discussion*

We provide further evidence of the mechanism underlying the effect of a used (vs. unused) account on subsequent consumption behavior and found evidence of a mediation by the extent to which the account has reached purchase goal for the used account effects.

### *Post-Test*

To further assess whether consumers 1) prior to spending, often set purchase goals for their accounts and 2) after spending, infer that they have achieved the purchase they set out for if the account is used, and has relatively less in it, we conducted four additional post-tests on Amazon Mechanical Turk (MTurk) in the context of 1) credit card reward programs and 2) gift cards.

*Credit Card Reward Programs.* We conducted two post-tests asking participants about their spending plans either before or after spending their reward points. In the *before spending* post-test, one hundred and sixty-three participants imagined that they had accumulated 100,000 points from a credit card reward program. They were asked whether they would have a plan about how they would spend these reward points (Yes = 1, No = 0), and if so, they were asked to list one item they would plan to spend these reward points on and indicate the extent to which they agree that that item was something valuable, that they need, that they want and that they would plan for (Förster, Liberman, and Friedman 2013) on a 7-point scale from 1 (*Strongly disagree*) to 7 (*Strongly agree*). In the *after spending* post-test, one hundred and fifty participants read that they had accumulated 100,000 points from a credit card reward program, and learned that they had spent 70,000 points thus far. Participants were then asked whether they thought they spent the money on something these reward points were planned to spend on (Yes = 1, No = 0) and if so, they were asked to list one item they thought they spent these points on and evaluate that item on the same scale as in the before spending condition.

As predicted, 62% of participants in the before spending test had a plan to spend these reward points ( $X^2 = 8.86, p = .003$ ) and 78% in the after spending test inferred that they spent these points on something that they had a plan for ( $X^2 = 45.93, p < .001$ ).

Further, we conducted a one-sample  $t$  test to compare the item ratings with the middle point of the scale. Participants in the before spending test indicated that they would spend these reward points on something valuable ( $M = 5.99$ ,  $SD = 1.15$ ,  $t(100) = 17.34$ ,  $p < .001$ ), that they need ( $M = 4.94$ ,  $SD = 1.90$ ,  $t(100) = 4.97$ ,  $p < .001$ ), that they want ( $M = 6.32$ ,  $SD = 1.06$ ,  $t(100) = 22.02$ ,  $p < .001$ ), and that they would plan for ( $M = 6.31$ ,  $SD = .92$ ,  $t(100) = 25.07$ ,  $p < .001$ ). Also, participants indicated greater intention to spend these reward points on something they want than on something they need ( $t(100) = 7.42$ ,  $p < .001$ ), consistent with prior research that consumers often plan to spend wind fall gains on hedonic items (Arkes et al. 1994; Bodkin 1959). Similarly, participants in the after spending test indicated that they thought they spent these reward points on something valuable ( $M = 5.91$ ,  $SD = 1.20$ ,  $t(116) = 17.24$ ,  $p < .001$ ), that they need ( $M = 4.85$ ,  $SD = 1.94$ ,  $t(116) = 4.73$ ,  $p < .001$ ), that they want ( $M = 6.21$ ,  $SD = 1.06$ ,  $t(116) = 22.44$ ,  $p < .001$ ), and that they originally planned for ( $M = 5.89$ ,  $SD = 1.27$ ,  $t(116) = 16.07$ ,  $p < .001$ ). Again, participants made greater inference that they had spent their reward points on something they want than on something they need ( $t(116) = 6.33$ ,  $p < .001$ ).

*Gift Cards.* We assessed the same inferences in a different domain: gift cards. We conducted two post-tests asking participants about their spending plans either before or after spending their gift cards. In the *before spending* post-test, one hundred and forty-five Prolific workers were asked to list one of their favorite clothing stores and imagined that they received one \$40 gift card from the clothing store that they listed. They were asked whether they would have a plan about how they would spend the money on their gift card (Yes = 1, No = 0), and if so, they were asked to list one item they would plan to spend their gift card on and indicate the extent to which they agree that that item was something valuable, that they need, that they want and that they would plan for on a 7-point scale from 1 (*Strongly disagree*) to 7 (*Strongly agree*).

In the *after spending* post-test, one hundred and forty-four participants were also asked to list one of their favorite clothing stores and imagined that they received one \$40 gift card from the clothing store. They were then told that they had spent \$32 from this clothing store. Participants were then asked whether they thought they spent the money on something the gift card was planned to spend on (Yes = 1, No = 0) and if so, list one item they thought they spent this gift card on and evaluate that item on the same scale as in the before spending condition.

As predicted, 63% of participants in the before spending condition had a plan to spend their gift card ( $X^2 = 9.96, p = .002$ ) and 94% inferred that they spent the money on something that they had a plan for ( $X^2 = 112.01, p < .001$ ).

Further, we conducted one-sample *t* test to compare the item ratings with the middle point of the scale. Participants in the before spending test indicated that they would spend their gift card on something valuable ( $M = 4.72, SD = 1.56, t(91) = 4.47, p < .001$ ), that they need ( $M = 5.17, SD = 1.80, t(91) = 6.27, p < .001$ ), that they want ( $M = 5.95, SD = 1.13, t(91) = 16.48, p < .001$ ), and that they would plan for ( $M = 5.35, SD = 1.47, t(91) = 8.79, p < .001$ ). Also, participants indicated greater intention to spend their gift cards on something they want than on something they need ( $t(135) = 3.43, p < .001$ ). Similarly, participants in the after spending test indicated that they thought they spent their gift card on something valuable ( $M = 4.68, SD = 1.49, t(135) = 5.34, p < .001$ ), that they need ( $M = 5.21, SD = 1.62, t(135) = 8.66, p < .001$ ), that they want ( $M = 5.96, SD = 1.04, t(135) = 22.11, p < .001$ ), and that they originally planned for ( $M = 5.11, SD = 1.45, t(135) = 8.94, p < .001$ ). Again, participants made greater inference that they had spent their gift cards on something they want than on something they need ( $t(135) = 5.01, p < .001$ ).

The results provide additional evidence that indeed consumers usually have a plan or a purchase goal of how to spend their resources in their account before spending and infer that they have reached their purchase goal after they spend a substantial amount from their account.

#### STUDY 6: GIFT CARDS - USED ACCOUNT EFFECT AND PURCHASE-GOAL-BASED HYPOTHESIS

We suggest that consumers infer that they have reached their purchase goal when they view a used account. This is especially likely the case when consumers have not used their account in a while to remember how they spent it. However, we suggest that if it is made salient that consumers did *not* reach their purchase goal with a used account, the effect will attenuate. Thus, in Study 6, we further examine the purchase goal account by manipulating whether consumers have reached their purchase goal with the past spending (e.g., spent on something they wanted at a clothing store as planned) or not (e.g., transferred money to someone else's account by accident). We measure the likelihood of purchasing a tasty drink from a used (vs. unused) account at a clothing store, which is non-essential. Based on our proposed purchase goal account, we expect that the used account effect will attenuate when consumers have not reached their purchase goal with past spending from the used account.

#### *Methods*

This study was pre-registered (<https://aspredicted.org/blind.php?x=8vj6gg>) for 2400 HITs on Amazon Mechanical Turk. Twenty-four hundred and twenty-seven workers on MTurk completed this study and were randomly assigned to one of the 2 (gift card: used vs. unused) x 2 (purchase goal has been reached: yes vs. no) between-subject conditions. In the *used gift card* conditions, participants were told that they received one \$40 gift card from a clothing store. In

the *purchase goal reached* condition, they spent \$32 of this gift card at this clothing store on clothing. In the *purchase goal not reached* condition, they accidentally transferred \$32 of this gift card to someone's gift card that they did not know, so \$32 had been removed from their gift card.

In the *unused gift card* conditions, participants were told that they received two gift cards from a clothing store. Both gift cards can be applied to the same items at the store. They had \$32 in one gift card. In the *purchase goal reached* condition, they spent \$32 from this gift card at the same clothing store on clothing. In the *purchase goal not reached* condition, they accidentally transferred \$32 of this gift card to someone's gift card that they did not know, so \$32 had been removed from their gift card. Then participants in both unused gift card conditions were told that they had \$8 in the other gift card and had not spent any money from that gift card.

All participants then imagined that as they were checking out, they saw that the clothing retailer was selling some tasty drinks (e.g., smoothie, latte). All of the drinks cost \$5 and they could use their gift card to pay for it. They were asked how likely they would be to buy a tasty drink with their gift card on a 100-point scale from 0 (*Not at all likely*) to 100 (*Very likely*).

### *Results*

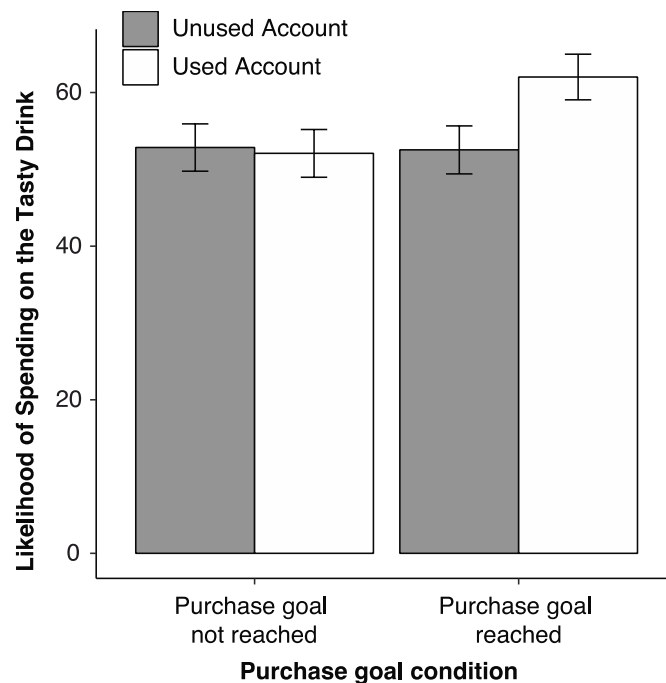
As preregistered, we excluded two hundred and five participants who failed the attention check, so data were analyzed with the remaining 2222 individuals (48% females;  $M_{\text{age}} = 39.83$ ,  $SD = 12.00$ , Range = [18, 80]).

*Whether Purchase Goal Has Been Reached or Not Moderates the Effect of a Used Account on the Likelihood of Spending Available Resources.* As preregistered, we conducted a linear regression predicting the likelihood of spending on the tasty drink from a dummy variable representing the used (vs. unused) conditions with the unused account condition being the

reference group, a dummy variable representing the purchase goal conditions with the purchase goal not reached condition as the reference group, and their interaction. As predicted, we found a significant used (vs. unused) gift card x purchase goal reached (yes vs. no) interaction ( $b = 10.25$ ,  $SE = 3.13$ ,  $t(2218) = 3.27$ ,  $p = .001$ , 95% CI of the difference = [4.11, 16.39],  $\beta = .12$ )<sup>9</sup>.

FIGURE 4

## STUDY 6. THE LIKELIHOOD OF SPENDING ON A TASTY DRINK



An analysis of simple effects revealed that in the purchase goal reached condition, participants were more likely to buy the non-essential item in the used condition than the unused

<sup>9</sup> While the interaction was our primary interest, we also examined the main effects. In addition, we found a significant main effect of used (vs. unused) account ( $b = 4.40$ ,  $SE = 1.57$ ,  $t(2219) = 2.80$ ,  $p = .005$ , 95% CI of the difference = [1.32, 7.47],  $\beta = .06$ ) and a significant main effect of purchase goal reached (vs. not) ( $b = 4.84$ ,  $SE = 1.57$ ,  $t(2219) = 3.09$ ,  $p = .002$ , 95% CI of the difference = [1.76, 7.91],  $\beta = .07$ ) on the likelihood of spending on the tasty drink.

condition ( $M_{\text{used}} = 62.02$ ,  $SD = 35.44$  vs.  $M_{\text{unused}} = 52.53$ ,  $SD = 37.88$ ,  $d = .26$ ;  $b = 9.49$ ,  $SE = 2.21$ ,  $t(2218) = 4.30$ ,  $p < .001$ , 95% CI of the difference = [5.16, 13.82],  $\beta = .13$ ). In the purchase goal not reached condition, there was no significant difference between the used and unused conditions ( $M_{\text{used}} = 52.08$ ,  $SD = 37.56$  vs.  $M_{\text{unused}} = 52.84$ ,  $SD = 36.52$ ,  $d = .02$ ;  $b = -.76$ ,  $SE = 2.22$ ,  $t(2218) = -.34$ ,  $p = .73$ , 95% CI of the difference = [-5.11, 3.59],  $\beta = -.01$ ). That is, participants were more likely to spend their gift card on the tasty drink in the used condition than their gift card in the unused condition after they reached their purchase goal, but this effect was attenuated when they did not reach their purchase goal due to a transfer error condition.

### *Discussion*

We found additional support for the purchase goal account that whether the purchase goal has been reached or not by past spending moderates the used account effects. Consistent with our theorizing, people are more likely to spend their resources on a non-essential item in the used account than unused account if they perceive their purchase goal has been achieved. However, when participants perceive that they have not reached their purchase goal with the account, the used account effect is attenuated.

## STUDY 7: WHETHER THE PURCHASE GOAL HAS BEEN REACHED OR NOT INFLUENCES THE USED ACCOUNT EFFECT

Study 6 has shown that the effect of a used vs. unused account is attenuated when they have not reached the purchase goal due to an accidental transfer error. The transfer error leads consumers to lose their money such that they cannot spend the money on something they plan for. However, it is possible that a transfer error leads consumers to be resistant to spend their money, rather than due to a perception that they did not fulfill their purchase goal.



Study 7 builds on Study 6 by manipulating what items consumers spend their resources on. We predict that there will be a greater likelihood of spending from a used (vs. unused) account when the account has reached a particular goal. However, when the account has not reached a particular goal, the effect will be attenuated. This is because when an account has not reached its purchase goal, consumers will be equally likely to spend their resources on something they plan for from a used and unused account.

### *Methods*

This study was pre-registered ([https://aspredicted.org/H46\\_923](https://aspredicted.org/H46_923)) for 2400 HITs on Prolific Academic. Two thousand four-hundred and four Prolific workers completed this study and were randomly assigned to one of the 2 (account: used vs. unused) by 2 (purchase goal has been reached: yes vs. no) between-subject conditions. In the *used account* conditions, participants imagined that they received one \$200 gift card from a department store that is known for selling stylish sunglasses that they really liked. They were excited to receive the gift card so that they could buy these sunglasses. In the *purchase goal reached* condition, they ended up spending \$150 from this gift card on some sunglasses as they planned and now they have \$50 remaining on this gift card. In the *purchase goal not reached* condition, they read that the sunglasses they really liked were not in stock, so they ended up spending \$150 from the gift card on some luxury clothes that they did not actually need, rather than spending it on some sunglasses as they planned. They now had \$50 remaining on this gift card.

In the *unused account* conditions, participants imagined that they received two gift cards from a department store that is known for selling stylish sunglasses that they really liked, one \$150 gift card and one \$50 gift card. They were excited to receive the gift cards so that they could buy these sunglasses. In the *purchase goal reached* condition, they ended up spending

\$150 from the first gift card on some sunglasses as they planned. As a result, they had \$0 remaining on the first gift card and \$50 remaining on their unused second gift card. In the *purchase goal not reached* condition, they read that the sunglasses they really liked were not in stock, so they ended up spending \$150 from the first gift card on some luxury clothes that they did not actually need, rather than spending it on some sunglasses as they planned. As a result, they now had \$0 remaining on the first gift card and \$50 remaining on their unused second gift card.

All participants then read that it was lunch time. They passed by their favorite café and found it has a lunch special that they really liked, costing on average \$25. They have some leftovers at home that they could warm up, but they also really liked the food from this café. Participants were asked, “Would you spend \$25 from your gift card to order the lunch special from this café or save the \$25 for your next trip?” on a 100-point scale from 0 (*Definitely save the \$25 for the next trip*) to 100 (*Definitely order the lunch special from the café*).

### *Results*

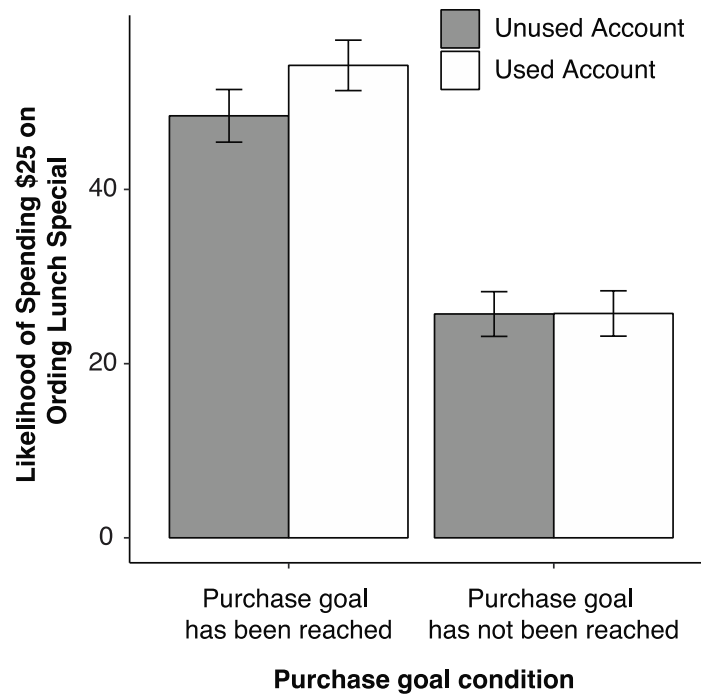
As preregistered, we excluded forty-one participants who failed the attention check, so data were analyzed with the remaining 2363 individuals (48% females;  $M_{\text{age}} = 36.94$ ,  $SD = 13.60$ ,  $\text{Range} = [18, 84]$ ).

*Whether Purchase Goal Has Been Reached or Not Moderates the Effect of a Used Account on the Likelihood of Spending Available Resources.* To examine whether the account reaching its purchase goal or not moderates the used account effect, we conducted a linear regression predicting the likelihood of spending \$25 on ordering the lunch special from a dummy variable representing the used (vs. unused) conditions with the unused account condition being the reference group, a dummy variable representing purchase goal conditions with the purchase

goal not reached condition as the reference group, and their interaction. As predicted, we found a significant used (vs. unused) gift card x purchase goal reached (yes vs. no) interaction ( $b = 5.73$ ,  $SE = 2.82$ ,  $t(2359) = 2.03$ ,  $p = .043$ , 95% CI of the difference =  $[-.19, 11.27]$ ,  $\beta = .07$ )<sup>10</sup>.

FIGURE 5

## STUDY 7. THE LIKELIHOOD OF SPENDING \$25 ON LUNCH SPECIAL



An analysis of simple effects revealed that after spending their gift cards on sunglasses as they planned, namely, reaching their purchase goal, participants were significantly more likely to spend \$25 on ordering the lunch special with a used (vs. unused) gift card ( $M_{\text{used}} = 54.24$ ,  $SD =$

<sup>10</sup> While the interaction was our primary interest, we also examined the main effects. We found a significant main effect of used (vs. unused) account ( $b = 2.90$ ,  $SE = 1.41$ ,  $t(2360) = 2.05$ ,  $p = .04$ , 95% CI of the difference =  $[-.13, 5.67]$ ,  $\beta = .04$ ) and a significant main effect of purchase goal reached (vs. not) ( $b = 25.64$ ,  $SE = 1.41$ ,  $t(2360) = 18.14$ ,  $p < .001$ , 95% CI of the difference =  $[22.86, 28.41]$ ,  $\beta = .35$ ) on the likelihood of spending on the lunch special.

35.88 vs.  $M_{\text{unused}} = 48.45$ ,  $SD = 37.03$ ,  $d = .16$ ;  $b = 5.79$ ,  $SE = 2.01$ ,  $t(2359) = 2.89$ ,  $p = .004$ , 95% CI of the difference = [1.86, 9.73],  $\beta = .08$ ). After spending their gift card on something they did not plan for such as luxury clothes, namely, failing to reach their purchase goal, there was no significant difference in spending \$25 on ordering the lunch special between the used and unused account conditions ( $M_{\text{used}} = 13.75$ ,  $SD = 19.70$  vs.  $M_{\text{unused}} = 14.29$ ,  $SD = 21.88$ ,  $d = .03$ ;  $b = .06$ ,  $SE = 1.99$ ,  $t(2359) = .03$ ,  $p = .98$ , 95% CI of the difference = [-3.84, 3.96],  $\beta < .001$ ). That is, participants with a used gift card were more likely to spend their \$25 to order the lunch special than those with an unused gift card only after reaching their purchase goal, and the effect was attenuated when the purchase goal was not reached.

### *Discussion*

We find supportive evidence that the effect of a used (vs. unused) account is attenuated when an account has not yet reached a purchase goal (e.g., spending on luxury clothes rather than sunglasses as planned). This is because consumers are unlikely to perceive that they have reached their purchase goal and thus less likely to spend their remaining resources. When an account has reached a purchase goal (e.g., spending on sunglasses as planned), consumers are likely to perceive that they have reached their purchase goal with a used (vs. unused) account and spend their remaining resources on non-essential items as a result. The results further substantiate our proposed mechanisms underlying the effects of a used (vs. unused) account.

### STUDY 8: MODERATION OF ESSENTIAL VS. NON-ESSENTIAL PURCHASE

In Study 8, we examine the purchase decision about an essential (vs. non-essential) item. We expect that whether a consumer is considering an essential (vs. non-essential purchase) will moderate the effect of a used (vs. unused) account. Our theory predicts that consumers are more

likely to spend resources from a used (vs. unused) account on non-essential items. This is because consumers infer they have reached their purchase goal with a used account, and as a result, are more likely to spend their resources on an item less essential for their goal, such as something they want but do not need. However, if a consumer is considering purchasing an essential item (e.g., something they need), then consumers with used and unused accounts are equally likely to purchase the item.

### *Methods*

This study was pre-registered ([https://aspredicted.org/NVJ\\_JY2](https://aspredicted.org/NVJ_JY2)) for 2400 participants on Prolific Academic. Two thousand three hundred and ninety-two participants completed the study and were assigned to one of the two (gift card: used vs. unused) by two (purchase: essential vs. non-essential) between-subject conditions. In the *used gift card* conditions, participants were told that they received one \$40 gift card from a clothing store and spent \$32 of this gift card at the clothing store last month. In the *unused gift card* conditions, participants were told that they received one \$8 gift card from a clothing store and had not spent any money from the gift card. Last month, they spent \$32 at the same clothing store. In both gift card conditions, participants read that the price of clothes range at this store from \$5 to \$50; the average price of a shirt at this store is about \$20-\$30.

We then asked participants to imagine that as they were checking out, they saw one of their favorite products at the store: sunglasses. In the *non-essential purchase* conditions, participants read that they currently had sunglasses that are in good condition, but found these ones more stylish than the ones they had. In the *essential purchase* conditions, participants read that their sunglasses recently broke and they had been looking for new one and found these ones very stylish. In both purchase conditions, participants read that the sunglasses cost \$5 and they

could use their gift card to pay for it and asked how likely they would be to buy the sunglasses with their gift card on a 100-point scale from 0 (*Not at all likely*) to 100 (*Very likely*).

### *Results*

As preregistered, we excluded twenty-five participants who failed the attention check question, so data were analyzed with the remaining 2367 individuals (49% females;  $M_{\text{age}} = 36.60$ ,  $SD = 13.09$ ,  $\text{Age} = [18, 79]$ ).

*Essential vs. Non-essential Purchase Moderates the Effect of a Used Account on the Likelihood of Spending.* We examined how an essential vs. non-essential purchase moderates the used account effect. We conducted a linear regression predicting the likelihood of purchasing the sunglasses using the gift card from a dummy variable representing the used (= 1, vs. unused = 0) conditions, a dummy variable representing the essential (= 1, vs. non-essential = 0) purchase, and their interaction. Consistent with our theory, we found a significant interaction between the used (vs. unused) account and essential (vs. non-essential) purchase conditions ( $b = -5.29$ ,  $SE = 2.20$ ,  $t(2363) = -2.41$ ,  $p = .016$ , 95% CI of the difference =  $[-9.59, -.98]$ ,  $\beta = .08$ )<sup>11</sup>.

An analysis of simple effects revealed that when the sunglasses were non-essential, participants were significantly more likely to spend \$5 from their used gift card on purchasing the sunglasses than those with an unused gift card ( $M_{\text{used}} = 75.43$ ,  $SD = 29.16$  vs.  $M_{\text{unused}} = 68.14$ ,  $SD = 32.79$ ,  $d = .23$ ;  $b = 7.29$ ,  $SE = 1.56$ ,  $t(2363) = 4.69$ ,  $p < .001$ , 95% CI of the difference =  $[4.25, 10.34]$ ,  $\beta = .13$ ). When the sunglasses were essential, there was no significant difference in spending \$5 on purchasing the sunglasses between the used and unused gift card conditions

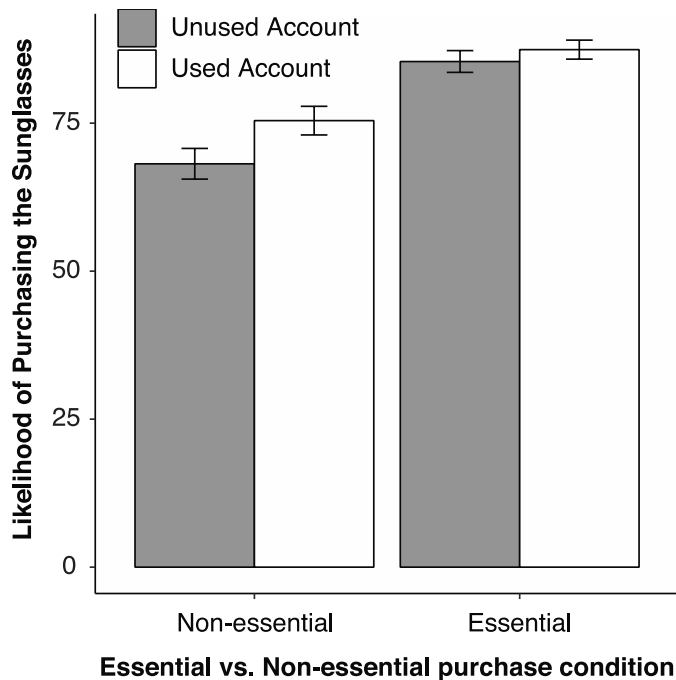
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<sup>11</sup>While the interaction was our primary interest, we also examined the main effects. We found a significant main effect of used (vs. unused) account ( $b = 4.64$ ,  $SE = 1.10$ ,  $t(2364) = 4.23$ ,  $p < .001$ , 95% CI of the difference =  $[2.49, 6.80]$ ,  $\beta = .08$ ) and a significant main effect of purchase goal reached (vs. not) ( $b = 14.62$ ,  $SE = 1.10$ ,  $t(2364) = 13.30$ ,  $p < .001$ , 95% CI of the difference =  $[12.46, 16.77]$ ,  $\beta = .26$ ) on the likelihood of spending on the sunglasses.

( $M_{\text{used}} = 87.42$ ,  $SD = 20.56$  vs.  $M_{\text{unused}} = 85.41$ ,  $SD = 22.20$ ,  $d = .09$ ;  $b = 2.01$ ,  $SE = 1.55$ ,  $t(2363) = 1.29$ ,  $p = .20$ , 95% CI of the difference =  $[-1.04, 5.05]$ ,  $\beta = .04$ ).

FIGURE 6

STUDY 8. THE LIKELIHOOD OF PURCHASING THE SUNGLASSES



*Discussion*

We show that essential (vs. non-essential) purchase moderates the used account effects. Specifically, the used account effect is attenuated when purchase is essential or for something needed, rather than wanted. The results support our proposed purchase goal account underlying the effect of a used (vs. unused) account.

*GENERAL DISCUSSION*

The objective of this paper was to examine if and when used (vs. unused) accounts affect consumption behavior. We reveal that consumers are more likely to spend their resources – money in checking accounts (Study 1C), gift cards (Studies 3, 6, 7, and 8), and reward points (Studies 1A, 1B, 2, 4, and 5) – on non-essential items when their account has relatively less (vs. relatively more). This is because when the account has been used, consumers infer that the account has accomplished its purchase goal because it has relatively less remaining in it. This effect is attenuated if the used account is relatively full (Studies 3 and 4), the account has not yet achieved its purchase goal (Studies 6 and 7), and the item under consideration is essential (vs. non-essential) (Study 8).

### *Theoretical Contribution*

First, we build on research on relative judgments and reference-dependence decision-making. Prior research has found that people's judgments are often relative rather than absolute, influenced by the surrounding context (e.g., Sharif and Oppenheimer 2016, 2021; Sherman et al. 1978; Stewart et al. 2002). We build on this research by revealing that consumers are more likely to spend their remaining resources on non-essential items when they have relatively less (vs. more) in the account remaining.

Second, this research contributes to the literature on mental accounting (Heath and Soll 1996; Thaler 1985; 1999; Sussman and Alter 2012; Sussman and O'Brien 2016). We show that the amount spent in an earmarked account leads consumers to make inferences about their purchase goal, affecting their consumption behavior; that is, when consumers view a used, earmarked account that has relatively less, they tend to infer that that used account has achieved



its purchase goal; as a result, they are more likely to spend resources in that account on non-essential items.

Relatedly, we contribute to literature on partitions (Cheema and Soman, 2008; Soman and Cheema 2011; Soman, Xu, and Cheema 2010). While past research has demonstrated that consumers are less likely to spend their resources if there are more partitions (Cheema and Soman 2008; Soman and Cheema 2011), research-to-date has not examined how consumption behavior is affected within a partition, or within an account. We build on this research by (1) examining mental divisions of resources, rather than physical, and (2) examining how spending from a used vs. unused account (i.e., the proportion of a partition that has been spent) can affect consumers' future consumption behavior.

### *Alternative explanations*

We explore multiple alternate explanations for the effect of a used (vs. unused) account on subsequent consumption, including the sense of achievement after exhausting the account and perception of seals. An alternate explanation is that consumers perceive spending all of the resources in their account as a goal and thus feel a sense of accomplishment after doing so. Building on the goal-gradient hypothesis (Kivetz, Urminsky, and Zheng 2006), consumers may feel motivated to spend their remaining resources in order to reach the goal of exhausting their account. If this was true, we might expect that consumers would feel happier or perceive greater accomplishment from spending from a used (vs. unused) account. In one study (N = 995), we used the same design as Study 5 and asked participants in both used and unused account conditions about goal-gradient hypothesis or sense of achievement ( $\alpha = .63$ ): “To what extent would you feel a sense of achievement if you empty this reward account?” and “How would you

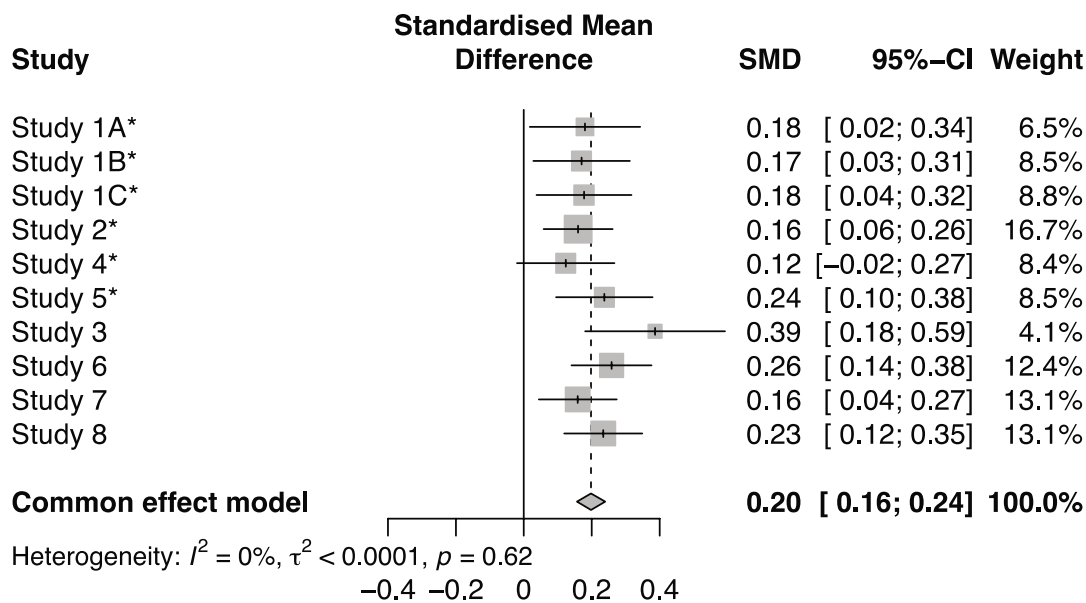
feel if you had no points left on the reward account?" We did not observe differences in the sense of achievement between the used and unused account conditions ( $M_{\text{used}} = 33.89$ ,  $SD = 23.25$  vs.  $M_{\text{unused}} = 33.51$ ,  $SD = 22.48$ ,  $d = .01$ ,  $b = .18$ ,  $SE = 1.45$ ,  $t(993) = .13$ ,  $p = .90$ , 95% CI = [-2.66, 3.03],  $\beta = .004$ ) and thus it did not mediate the effect ( $a \times b = .08$ ,  $SD = .64$ , 95% CI = [-1.18, 1.34]). Thus, the results did not support the mediating role of goal-gradient hypothesis.

Literature on partition suggests consumers tend to perceive an unused (vs. used) account as being sealed and thus deliberate more before spending the resources on non-essential items (Cheema and Soman, 2008; Soman and Cheema 2011; Soman, Xu, and Cheema 2010). Although we are not examining physical partitions that cause a temporal delay before consumption, it is possible that consumers deliberate more before spending their resources in an unused (vs. used) account, leading them to be less likely to spend their resources on non-essential items from an unused account. If this was true, we might expect that consumers would deliberate more about spending from an unused account than from a used account and thus spend more time to make a decision. In Study 5, we recorded the response time of the main DV in both used and unused account conditions and did find significant differences in the response time across account conditions ( $M_{\text{used}} = 21.22$ ,  $SD = 15.17$  vs.  $M_{\text{unused}} = 21.69$ ,  $SD = 20.29$ ,  $d = .03$ ,  $b = -.46$ ,  $SE = 1.29$ ,  $t(765) = -.36$ ,  $p = .72$ , 95% CI = [-2.99, 2.07],  $\beta = -.013$ ). Thus, the results did not support the decision point theory.

Prior research has found that consumers' decisions can be affected by whether or not they will deplete their account entirely (Roeder, Lee, and LeBoeuf 2018). Notably, in our studies, we hold constant across conditions the absolute amount remaining in the account. Thus, in *both* the used and unused accounts, the account will be either completely depleted in both conditions (in some studies) or have still have a balance remaining in both conditions (in other studies). We

examined whether the effect of a used (vs. unused) account was stronger if the account would be depleted to zero or not after spending in both conditions (Figure 7). In particular, we ran a meta-analysis with all studies in the paper comparing the effect sizes. In Studies 1A-1C, 2, 4, and 5, the item would draw the account to zero if consumers decide to make a purchase across both conditions. In Studies 3, 6, 7, and 8, the item would not draw the account to zero if consumers decide to make a purchase. The results suggest that drawing an account to zero reduces the size of the used account effect, in comparison to not drawing an account to zero. However, we consistently find the effect in both scenarios.

FIGURE 7. META-ANALYSIS ACROSS STUDIES



Note. \* indicates that the item would draw the account to zero if participants decide to make a purchase with the account.

### *Marketing Implications*

Our research has a series of practical implications for marketers as well as consumers who are considering spending reward points, or money on gift cards and in checking accounts.

Reward programs usually inform their consumers of how many reward points they currently have, but do not mention how many reward points that consumers have spent in the past. If these companies hope to increase spending behavior, the results of our research suggest that they could highlight how many points the consumers have *already* spent. In doing so, consumers are likely to perceive their account as “used”, having relatively less, and are more likely to spend additional points on non-essential items.

Relatedly, marketers can also highlight spending within different windows of time to encourage or discourage spending. For example, imagine a consumer has accumulated 10,000 reward points, has spent 7,000 reward points over a year, but has not yet spent any points this month. Companies may encourage consumption by highlighting the consumers’ spending over the past year, leading the account to feel used (e.g., 7,000 points have been spent this year and 3,000 points are available), or may discourage consumption by highlighting the lack of consumer spending over the past month (e.g., 0 points have been spent so far and 3,000 points are available).

For consumers who want to save money, our research suggests that they should be cautious about spending from a used account. Consumers are likely to waste their resources if they are in a used (vs. unused) account, spending their resources on items that they might not need, and regret later. In order to reduce this tendency, consumers may want to plan in advance how they want to spend their resources. For example, consumers could plan a few tasks that they need to complete for the week, and work on these tasks when they have spare moments of time,

or plan which reward they would ultimately like to redeem their points on. This may prevent the tendency for consumers to spend their resources on non-essential items.

### *Extensions for Future Research*

Future studies should examine other boundary conditions of the effect of a used vs. unused account. One likely boundary condition is the knowledge of the original amount of a used account. Consumers should be unable to make a within-account comparison, comparing the available resources with the original amount, if the information about the original amount is unavailable. As a result, if consumers do not know the original amount of an account, we should be less likely to observe our effect. Future studies should also explore whether transferring the account remaining to a different account might attenuate the used account effect. Due to a within-account comparison, consumers may not compare the account remaining with the original account but rely on the new account. This intervention may help consumers avoid spending on non-essential items and plan their spending wisely.

Past literature on scarcity might on the surface appear to predict the opposite of our results; that is, that people might be less likely to spend their resources from a used (vs. unused) account (Soster et al. 2014; Zhu and Ratner 2015) or hold on to the resources that appear limited for a longer period of time (Shu and Sharif 2018). For example, Soster et al. (2014) found people were less satisfied when they spent from an account that had absolutely less (vs. absolutely more) in the account. However, this past research differs in a number of ways. First, we examine a different DV, namely, purchase likelihood rather than satisfaction. Second, and crucially, in all of our studies, we hold constant the absolute amount remaining across conditions (e.g., in study 1, everyone had 30,000 reward points remaining), and we manipulated whether this account has

relatively less or more. Further, we find that consumers are only more likely to spend from used accounts for non-essential purchases (Study 8) and when the account had reached its purchase goal (Studies 6 and 7). Thus, based on all these differences, the findings between Soster et al. (2014) and our paper are not divergent. Rather it is an open question of how satisfied consumers would be when spending from a used (vs. unused) account in our studies. We suggest future research should explore this question more thoroughly.

This paper examines if and when a used (vs. unused) account affects consumption behavior. Understanding further how the perception of consumers' accounts might affect their consumption behavior is a fruitful area of research, with important implications for consumers and managers alike.

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