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Monitoring personal finances: Evidence that goal progress and regulatory focus influence when people check their balance

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RUNNING HEAD: MONITORING PERSONAL FINANCES

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Word count: 10,931 words (excluding tables and abstract, max: 12,000)

Abstract

When do people check the balance of their personal bank accounts? To investigate this issue, we examined whether the monitoring of personal finances is influenced by peoples' perceptions of their progress toward financial goals and their regulatory focus (i.e., whether the goal involves attaining a positive outcome or avoiding a negative outcome). Study 1 examined how often participants logged into their online bank accounts to check their balance and found that the worse they perceived their progress toward their most important financial goal to be, the more often they checked. In Studies 2 and 3 we developed a simulation of personal financial management in which participants were given financial goals that involved attaining a positive outcome and avoiding a negative outcome. Goal progress was manipulated via the balance in participants' account at the start of the simulation (Studies 2 and 3) and the rate at which their balance increased (Study 3). Participants in Study 2 checked their balance more often when they perceived their progress toward financial goals to be poor and when they considered avoiding the negative outcome to be important. In Study 3, the frequency with which participants checked their balance was influenced by an interaction between goal progress, the regulatory focus of the goal, and the importance of the goal. Participants who felt that gaining money was relatively important were more likely to check their balance when their progress was good, whereas participants who felt that avoiding losing money was relatively important were more likely to check their balance when progress was both good and bad. Taken together, these findings contribute to our understanding of how people manage their personal finances, and self-regulation more generally, by revealing that how often people monitor their personal finances depends on perceptions of goal progress, regulatory focus, and the importance of the goal.

Keywords: self-regulation, goal, monitor, check, personal finances, regulatory focus

Word count: 302

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1.0 Introduction

Many people have financial goals. These can involve saving money for future expenses (such as buying a house or sending a child to university), trying to pay off debts, or trying to balance outgoings against income. According to theories of goal pursuit (such as Control Theory, Carver & Scheier, 1982; Perceptual Control Theory, Powers, 1973; Social Cognitive Theory, Bandura, 1977; and Goal Theory, Locke & Latham, 1990), monitoring progress is a fundamental process involved in striving for goals. Monitoring involves comparing the qualities of behavior, or the outcomes of behavior, to salient reference values. For example, someone who plans to save enough money for a deposit on a house within three years may work out that they need to save $500 per month. If they check the balance of their bank account at the end of each month and compare this value to their target, then they will know how close they are to reaching their goal, and whether they need to adjust their financial behavior (e.g., spend less or earn more) in order to save more money.

Numerous studies show that monitoring progress helps people to achieve their goals (e.g., Bandura & Cervone, 1983; Schunk, 1983; Renn & Fedor, 2001; for a review, see Harkin et al., 2016). However, evidence suggests that people do not necessarily monitor their progress as often as they may need to (a phenomenon that has been termed 'the ostrich problem', Webb, Chang, & Benn, 2013). For example, the 2012 National Savings and Investment (NS&I) survey in the UK found that only 10% of the people who worry everyday about their finances check their finances at least once a month (TNS, 2012). This is an important issue given that approximately 97% of the adult population in the UK have

transactional bank accounts[1][2] and that regularly checking the balance of such accounts is a strategy that people report using to manage their finances (Social Finance, 2011). Because monitoring the balance of such accounts may be useful but underutilized, research is needed to identify the factors that influence whether and when people monitor their personal finances. This issue is important from both a theoretical and an applied perspective. From a theoretical perspective, identifying the factors that influence whether people check their balance can help us to understand when and why people seek information that can be used to estimate progress (see, for example, reviews by Anseel et al., 2007; Liberman & Dar, 2009). From an applied perspective, identifying the factors that influence whether people check their balance may inform interventions that can facilitate the effective management of personal finances.

1.1 Factors that may influence when people monitor their finances

Perceptions of goal progress. Previous research suggests that monitoring in financial contexts may be influenced by, among other factors, an individual's perception of their goal progress. Perceptions of goal progress refer to whether an individual considers their current standing with respect to their goal to be favorable or unfavorable. Individuals can evaluate whether there is an absolute discrepancy from a relevant standard (e.g., how much money one has now compared to how much one had before, or how much one would like to have, Bandura 1977), changes in their rate of progress over a period of time (e.g., whether one is able to save enough money over time to attain the target within the desired timeframe, Carver & Scheier, 1982). A smaller discrepancy with a desired state, or a larger discrepancy with an undesired state, is considered to indicate favorable goal progress. A rate of progress that

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[1] Transactional accounts (commonly referred to as 'current' or 'chequing' accounts) are deposit accounts that allow people to deposit or withdraw money an unlimited number of times, subject to their available funds.
[2] Estimated from the 2011 UK census (Office of National Statistics, 2011) and 'A New approach to banking' (Social Finance, 2011).

allows the goal to be attained within the desired timeframe, or a positive change in the rate of progress, is also considered to be favorable.

Research in trading contexts shows that an upward trend in the market (i.e., a positive change in direction relative to a previous reference point, likely reflecting favorable goal progress) is associated with increased monitoring (Karlsson, Loewenstein, & Seppi, 2009), while unfavorable progress is associated with decreased monitoring (Sicherman, Loewenstein, Seppi, & Utkus, 2015). For example, Karlsson et al., examined the frequency with which investors checked their stock portfolios at a Swedish pension company and a US brokerage company. They compared how frequently investors checked when the stock market was going up (i.e., when progress was good) to how frequently they checked when the market was going down (i.e., when progress was bad). Karlsson et al., found that investors checked more often when the market was rising than when the market was falling or remaining stable. Karlsson et al., concluded that investors were more likely to monitor their finances in a rising market because they preferred to receive positive than negative information.

Gherzi, Egan, Stewart, Haisley, and Ayton (2014), however, found mixed effects of goal progress on the frequency of monitoring. In their study, investors checked their trading accounts less frequently over a 5-day period with negative weekly market returns than with positive or balanced returns, which is somewhat consistent with the results of Karlsson et al. (2009). However, they also found that investors checked their accounts more often with both increasing and decreasing market returns that were immediate (i.e., daily). Jung Grant, Xie, and Soman (2010) propose that the frequency with which people monitor their finances differs according to whether they have a short- or a long-term outlook. They argue that people may monitor their finances more often in a rising market because they believe that they have to act sooner in a rising market than in a falling market. Jung Grant et al. point out

that investors tend to hold on to falling stocks for too long, and sell rising stocks too soon – a phenomenon known as 'the disposition effect' (e.g., Lehenkari & Perttunen, 2004; Odean, 1998; Shefrin & Statman, 1985). One explanation for the disposition effect is that people take a short-term outlook in a rising market (as they feel like they need to act sooner), and a longer-term outlook in a falling market (as they feel like they have to wait until the market is rising again, before they act).

To test the idea that a rising market invokes a short-term perspective, Jung Grant et al. (2010, Experiment 2) allowed participants to invest their money in a stock whose price fluctuations could be viewed over 20 periods. For participants in the 'rising value condition' – which represented relatively good progress toward the goal of making a profit – the stock reached a 20-period high ($93), while for participants in the 'falling value condition' – which represented relatively poor progress – it declined to a 20-period low ($33). Jung Grant et al. found that participants in the rising value condition updated the price against which they evaluated their stocks more frequently (i.e., they used a more recent price as the reference price) than those in the falling value condition and were more likely to exhibit reactions that had a short-term focus than those in the falling value condition (e.g., "If I had made money right away, then I would have been inclined to sell the stock to make a profit"). This finding indicates that people may monitor their stocks more frequently in a rising market because such situations evoke a shorter-term outlook that leads them to perceive a greater need to act.

In contrast, in the context of transactional accounts, it is likely that having diminishing funds requires more urgent action (e.g., to avoid further spending) than having accumulating funds. As such, more frequent monitoring when progress is poor may help people to identify situations that require immediate action. People may therefore be more likely to monitor their transactional accounts when they perceive their progress to be poor, as doing so can serve a self-regulatory function. Taken together with the findings of research on

investors, it seems likely that perceptions of goal progress will influence when people monitor their personal finances. However, given the mixed findings to date, it is currently unclear whether people will be more likely to monitor when progress is considered to be good versus bad.

      Regulatory focus. In addition to perceptions of goal progress, it is also possible that sensitivity to gains versus losses may influence when people monitor their finances. This sensitivity is thought to depend on people's regulatory focus; specifically, whether the goal is framed in terms of attaining a positive outcome or avoiding a negative outcome (Higgins, 1998). Goals that are represented in terms of attaining a positive outcome (e.g., saving money for a holiday) tend to be associated with a promotion focus, whereas goals that are represented in terms of avoiding a negative outcome (e.g., saving money to avoid getting into debt) tend to be associated with a prevention focus. Zhou and Pham (2004) suggest that a promotion focus makes people more sensitive to gains, whereas a prevention focus makes people more sensitive to losses. They further suggest that different financial products are associated with different regulatory foci that, in turn, influence how people manage their finances. Specifically, Zhou and Pham showed that trading accounts are associated with sensitivity to gains (that is, people favor investing in a riskier stock with a greater pay-off), while retirement accounts are associated with sensitivity to losses (that is, people favor investing in a less risky stock, with a smaller pay-off).

      Greater sensitivity to gains in a trading context may explain why some investors in Karlsson et al.'s (2009) study monitored their stocks more frequently in a rising market. However, people may be more sensitive to losses when managing their transactional accounts than when managing investments, as funds that are used for trading are often surplus to personal finances (as suggested by the finding that debtors are less likely to invest their finances than savers; Spencer & Fan, 2002), whereas the reverse is not true. As such, the

impact of a loss may be felt more keenly with personal finances than in an investment context because there are no additional funds to buffer the fallout. This greater sensitivity to losses when managing personal finances may lead people to check their transactional accounts more frequently when their progress is poor, as losses, or the potential for losses, increases when people are making relatively poor progress toward their financial goals.

1.2 The Present Research

Although previous research has tended to focus on how people monitor their stock portfolios, it provides some useful insights into the factors that may influence the frequency with which people monitor their personal bank accounts. Specifically, there is evidence to suggest that people monitor their stocks more frequently when they believe that they are making good progress toward their financial goals. This tendency could reflect: a) a preference for positive information (Karlsson et al., 2009), b) a desire to avoid negative information (i.e., the ostrich problem, Webb et al., 2013), c) that people perceive a greater need to act in a positive market, and/or d) that people are more sensitive to gains for stocks because such investments are associated with a promotion focus. However, it has not yet been investigated whether these factors also influence the monitoring of more common financial products, such as personal bank accounts. Furthermore, there is reason to believe that people might monitor their personal accounts more frequently when they perceive their progress toward their financial goals to be poor, rather than good. Therefore, the present research aimed to investigate whether the frequency with which people monitor their personal bank accounts is influenced by perceived goal progress and the regulatory focus of the financial goal that people have in mind.

Unlike in investment markets (where evidence suggests that people check more often when progress is good), we hypothesized that people would be more likely to have a prevention focus in the context of their personal finances, and thus would be more likely to

check their personal finances when their progress on their financial goal(s) was relatively poor. However, based on the previous literature, we also expected to observe an interaction between goal progress and the regulatory focus of the goal(s), such that people would monitor their finances in when their progress toward promotion focused goals (e.g., saving money) was relatively good, while they would check their balance when their progress toward prevention focused goals (e.g., avoiding becoming overdrawn) was relatively poor. That is, we expected that people would check their balance more often if they had a relatively high balance and their rate of progress was relatively good, or if they had a relatively low balance and their rate of progress was relatively bad. In addition, we examined whether the salience of the goal influences monitoring, as it may be that people are more likely to monitor their progress toward goals that are more salient or important.[3]

2.0 Study 1

In Study 1 we obtained an objective measure of the frequency with which people monitored their personal finances by using records of how often people logged in to check the balance of their personal bank accounts over a three-month period. A short questionnaire was then used to measure factors that we expected might influence how frequently people checked their balance (e.g., the nature of financial goals, perceived progress, and the salience of the goal). Participants were asked to complete the measures with reference to their most important financial goal. To assess goal progress across participants who were at different

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[3] We remain agnostic as to whether people consider their progress in these studies in terms of absolute discrepancies from a salient reference point, or whether they consider it in terms of their rate of progress over time, or even if they take both aspects into account when evaluating their progress. As such, we have no specific predictions related to the possible different methods participants may have used to assess their progress.

stages in the pursuit of different goals, we asked participants to estimate how "on track" they were to attaining their goal.[4]

2.1 Method

2.2 Participants

Eighty-six participants (38 males) volunteered for the study (mean age = 23.87 years SD = 9.14). Participants were recruited either via an email to a list of volunteers at a university in the north of England, through the personal contacts of the researchers, or via a system where undergraduates participate in research in exchange for course credits. Five participants (6%) received course credit and the remaining participants were paid £5.

Participants were eligible to participate only if they held a personal bank account at one particular bank in the UK (which has requested to remain unnamed) that could be accessed online. This account had to be their main bank account, and could not be a joint account. We focused on accounts held at this bank because, to our knowledge, at the time of the study it was the only bank in the UK that allowed customers to access a record of when they logged into their account. At the start of the study, participants were informed of the type of information that they would be asked to provide; namely, that they would be asked for information about their financial goals and behavior.

2.3 Procedure

Participants completed a computerised survey implemented in Java or an equivalent version in Microsoft Word. They were asked to provide information about: a) their age and gender, b) their most important financial goal, c) their reason for pursuing the goal (which was used as a measure of the regulatory focus of the goal), d) perceived progress toward the

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[4] We did not ask participants to estimate whether their progress was good or bad, as the concept of "progress" in this case may not easily apply to striving for goals that involve absolute discrepancies with respect to a standard in the present, such as the goal of avoiding debt.

goal, e) how frequently they thought about the goal, and f) how often they logged into their bank account. The study took approximately 30 minutes to complete.

Financial goals. Participants were asked to describe their most important financial goal (e.g., "to have at least £500 in my bank account each month"). As a measure of perceived progress, they indicated whether they were on track to achieving their goal on a scale from 1 (Not at all on track) to 5 (Very much on track). The salience or importance of the goal was measured by asking participants to indicate how frequently they thought about this goal on a scale from 1 (very rarely) to 5 (very often).

Online banking information. Participants were asked to log into their bank account online, to retrieve a record of the times in the past 3 months when they logged in, and to copy and paste this information onto the questionnaire. This record also contained the dates when participants transferred money between their accounts and the payments that they made from their account during this period. To maintain privacy, participants were asked to delete any information that did not pertain to dates, the account type (e.g., current account), and the type of action that was performed.

2.4 Approach to analysis

Seventy-three participants (85%) provided complete data for analysis. The log that participants retrieved of their online activity included a record of when they: 1) logged in (which allowed them to view their bank balance), 2) searched their transactions, 3) transferred money between accounts, 4) made a payment, and 5) logged out. The occasions where participants transferred money or made a payment were counted as transactions.

The first author and an independent coder (who was blind to the hypotheses) rated whether the reason that participants gave for pursuing their financial goal reflected a promotion or a prevention focus. Reasons were coded as being prevention focused if they concerned avoiding debt, and were coded as being promotion focused if they were

aspirational (e.g., saving for a holiday). One reason was too ambiguous to be coded (i.e., To save as much money as I can for my future), and so was omitted from the analyses. Inter-rater reliability was high (free-marginal kappa = 0.89).

2.5 Results

Participants' financial goals were more likely to be prevention focused (e.g., avoiding debt, n = 54, 75%) than promotion focused (e.g., saving for a holiday, n = 18, 25%), z = 4.12, p < 0.01. On average, participants reported that their financial goal was relatively salient (M = 3.68, SD = 1.20, where 4 = I think about this goal often) and that they were quite on track (M = 3.97, SD = 1.22) to achieving the goal. Participants logged into their accounts an average of 7.89 times a month (SD = 7.57), including making transactions (the mean excluding transactions, was 5.64 times, SD = 5.67).

Five variables were entered into a hierarchical linear regression to predict the frequency with which participants logged into their accounts. The total number of transactions was entered in Step 1 (to control for the number of log ins made for the purposes of making transactions); perceived progress toward the goal, the salience of the goal, and the regulatory focus associated with the goal, were entered in Step 2. To examine whether the effect of perceived progress on frequency of checking was moderated by the regulatory focus or the salience of the goal we entered the interactions between perceived progress and a) regulatory focus, and b) salience in Step 3. The results of this analysis are presented in Table 1.

The only significant predictors of frequency with which participants logged into their accounts were the total number of transactions (B = 0.06, t(70) = 3.12, p < .01), and perceived progress (B = -1.70, t(67) = -2.53, p = .01). These findings suggest that, regardless of the regulatory focus of the target goal, the worse participants perceived their progress toward their financial goals to be, the more often they monitored their personal finances.

2.6 Discussion

Study 1 found that participants checked the balance of their personal bank accounts more frequently when they perceived that they were making poor progress toward their financial goals. This finding attests to the importance of perceived progress in influencing the frequency of progress monitoring, but the direction of the effect stands in apparent contrast to that of Karlsson et al. (2009) who found that investors in the stock market were less likely to check the progress of their accounts in a falling market (i.e., when progress was poor). As noted in the introduction, the effect of perceived progress may have differed in the two studies because the nature of the respective goals differs. Specifically, investment is typically a promotion-focused goal (i.e., the aim is to make a profit) whereas participants in our study reported three times as many prevention-focused goals (e.g., avoiding debt) than promotion-focused goals (e.g., saving for a holiday). Thus, it may be that people tend to monitor more when progress is poor for prevention-focused, but not promotion-focused, goals. Although such an effect should have led to a significant interaction between prevention focus and perceived progress, the relatively homogeneous nature of the goals that participants reported holding in Study 1 may have meant that we were not able to detect this interaction effect. To investigate this possibility, in Study 2 we gave all participants both a promotion focused and a prevention-focused financial goal. We then compared the effect of perceived progress toward each type of goal.

An additional limitation of Study 1 was that it was correlational in nature. As such, the direction of the relationship between perceived goal progress and the frequency of monitoring could not be determined. It may be, for example, that people who frequently check their financial status are more likely to believe that they are doing poorly (rather than vice versa, as we hypothesized). Therefore, to test whether perceived progress does indeed influence the frequency with which people monitor their progress toward their respective

goals, Study 2 experimentally manipulated perceived progress and examined its effect on the frequency of checking.

3.0 Study 2

In Study 2 we developed a computerized 'game of life' where participants could gain or lose money over a series of 'days' (trials). They also had the opportunity to check their balance on each trial. Participants were randomly assigned to one of three conditions that were intended to engender different perceptions of their progress toward the goals of saving money and avoiding becoming overdrawn: A condition in which the account had a relatively high balance at the start of the game (and thus progress toward the goals was likely to be perceived as relatively good), a condition where the balance was relatively low (and thus progress was likely to be viewed as relatively bad), and a final condition where the balance was between these two values.

3.1 Method

3.2 Participants

Seventy-nine students (12 males) first-year students from a university in the north of England volunteered for the study in exchange for course credits. The mean age of the participants was 18.73 years (SD = 1.02). The study was advertised as investigating how people react to choice information.

3.3 Procedure

Participants were asked to play a computer-based 'game of life' that involved saving and spending money over two 'months'. They were told that they would be paid £3 for taking part, but that they could earn more or less depending on their progress toward two financial goals; one promotion focused and one prevention focused. Each month that participants were able to save at least £150 (the promotion focused goal), they were told that they would receive an additional £1.50. Each time that their balance at the end of the month was below

£20 (the prevention focused goal), they were told that they would lose £1.50. In fact, all participants were paid £6 at the end of the study.

At the start of the game, participants were informed that they would receive a credit of £30 (ostensibly, for their part-time work) every Monday, and a debit of £15 (for their rent) every Thursday. There would then be other expenses (e.g., buying groceries) for which they would have to decide how much money to spend. Participants in the "high balance" condition were told that they would start the game with a balance of £133, the "medium balance" condition started with £58, and the "low balance" condition started with £3. Thus, participants in the high balance condition were most likely to be able to save £150 and it was impossible for their balance to fall below £20, while those in the low balance condition were most likely have their balance fall below £20 and it was impossible for them to save £150. It was impossible for participants in the medium balance condition to save £150 or to have their balance fall below £20.

To prevent participants from spending as little as possible and to increase the ecological validity of the game, they were informed that they would have to balance their financial goals against their well-being. It was explained that spending money on purchases related to health and social activities (e.g., buying groceries, going out with friends) would promote their well-being (expressed as 'well-being points' in the game). If participants' level of well-being was less than 10 points at the end of the month, then they were told that they would have to pay £20 pounds in medical costs. Participants were told that their level of well-being would be displayed onscreen at all times, but that their financial balance would not be. They could, however, check their balance at any time, although there would be a 5-second delay before their balance was presented. Participants were presented with a hardcopy of the instructions that they could refer to during the game.

After receiving the instructions, but before the trials started, participants were asked to rate: The extent to which i) saving £150, and ii) not having a balance below £20, was important to them (on a scale of 1 = not at all important, 5 = extremely important). Participants were then given seven practice trials (or 'days') in which to familiarize themselves with the game. In addition to the regular credit and debit payments that participants received (i.e., for wages and rent), in each week there were two days in which participants received smaller credit payments (e.g., they were told that: You tutor a high school student and are paid £25), two days in which participants could make purchases (e.g., they were told that: You buy your groceries for the week. Select how much you wish to spend), and one day in which no credit or debit occurred. Each credit or debit occurred on a separate day. Participants were notified if they received a smaller credit or if they had to make a purchase, but they were not informed of the occurrence of the regular credits and debits during the game. Each time that participants were invited to make a purchase, they were given the choice of spending £15 (and receiving 1 well-being point), spending £20 (and receiving 2 well-being points), or spending £25 (and receiving 3 well-being points).

Immediately before the last trial of each month (on which participants received neither a credit nor a debit), participants were asked to estimate: a) their progress toward the goals of saving £150 and avoiding a balance of less than £20, and b) how on track they were to saving £150 and avoiding a balance of less than £20 (on a scale of 1: Very bad progress / not at all on track to 5: Very good progress / very much on track). Given the short-term context of the game, and the fact that participants were all near the end of their goal pursuit when they answered these questions, we considered these two measures of goal progress to be comparable. In support of this idea, the measures proved internally consistent ($\alpha = 0.91$ each for the two goals across both months) and so were combined to create a measure of perceived progress toward each goal. At the end of the game, participants rated how

concerned they had been with: i) saving £150 pounds, and ii) avoiding a balance of less than

£20 on a scale of 1 (not at all concerned) to 5 (very much concerned).

3.4 Results

Two participants were excluded from the analyses; one for misunderstanding the

instructions (they believed that their goal was to end the game with a balance of £208, instead

of £150), and another because s/he checked his/her balance on every trial, thus making them

a statistical outlier (the next most frequent incidence of checking involved checking on just

43% of the trials). Thus, in the final analysis, there were 30 participants in the high balance

condition, 24 participants in the medium balance condition and 23 participants in the low

balance condition.

3.5 Manipulation check

In keeping with our design, across both months, participants in the high balance

condition had more money in their accounts at the end of the game (Month 1: M = £137.50,

SD = £7.47; Month 2: M = £144.00, SD = £19.64) than participants in the medium balance

conditions (Month 1: M = £126.50, SD = £6.67, Month 2: M = £129.50, SD = £9.67), $F(1,$

$53) = 841.30$, $\eta^2 = 0.12$, $p < .001$. The difference between the amount of money that

participants in the medium balance condition and participants in the low balance condition

had at the end of the games (Month 1: M = £63.80, SD = £8.52; Month 2: M = £66.60, SD =

£9.78), also differed significantly, $F(1, 46) = 623.43$, $\eta^2 = 0.25$, $p < .001$.

To test whether participants in the three conditions perceived their progress to be

different, we conducted separate ANOVAs with condition as the independent variable and

perceived progress on the promotion and prevention focused goals as the dependent variable.

There was a significant main effect of condition on perceived progress toward the promotion-

focused goal, $F(1, 76) = 30.05$, $\eta^2 = 0.44$, $p < .001$. Follow-up pairwise comparisons revealed

that participants in the high balance condition rated their progress more favorably (M = 3.84,

SD = 0.75), than participants in the medium balance condition (M = 3.15, SD = 0.61), t(53) = 3.41, p = .001, d = 1.00, who, in turn, rated their progress more favorably than participants in the low balance condition (M = 2.23, SD = 0.88), t(46) = 4.24, p < .001, d = -1.22. These findings confirm that, as expected, participant's perceptions of their progress were influenced by the amount of money that they had in their accounts at the start of the game.

Condition also significantly affected participants' perceptions of their progress on the prevention focused goal, F(1, 76) = 21.88, η^2 = 0.36, p < .001. Participants in the high balance condition (M = 4.63, SD = 0.69) rated their progress on this goal similarly to those in the medium balance condition (M = 4.42, SD = 0.51), t(53) = 1.05, p = .29, d = 0.35. However, those in the medium balance condition rated their progress on this goal more favorably than those in the low balance condition (M = 3.35, SD = 0.99), t(46) = 4.87, p < .001, d = 1.36.

3.6 Main analyses

Figure 1 shows the frequency with which participants checked their balance in each month of the game as a function of condition. Two hierarchical regressions were used to examine which variables predicted the frequency with which participants checked their balance in the first and second months of the game. Participants' ratings of the importance of the goals were entered in Step 1. Contrasts between a) the high vs. medium and low starting balance conditions, and b) the medium vs. low starting balance conditions were entered in Step 2. Finally, to examine whether the effect of condition on the frequency of checking was moderated by the perceived importance of the two goals, we entered the interactions between the condition contrasts and participants' ratings of the importance of each goal in Step 3. The results of these regressions are presented in Tables 2 (the first month), and 3 (the second month).

In the first month, none of the variables significantly predicted the frequency with which participants checked their balance during the game (all ps $\geq$ .13). In the second month, however, there was a significant effect of condition, such that participants in the low balance condition checked their balance more frequently than participants in the high balance condition (B = -0.40), t(73) = -2.22, p = .05. The importance of the two goals also predicted the frequency of checking. The more important the promotion goal was considered to be, the less likely participants were to check their progress (B = -0.73, t(75) = -2.00, p = .05). In contrast, the more important the prevention goal was considered to be, the more likely participants were to check their progress: B = 0.81, t(75) = 2.03, p = .05).

3.7 Discussion

In Study 2, participants played a financial game that offered them the opportunity to check their progress toward two goals (to save money and to avoid a low balance). By manipulating how much money participants started the game with, we were able to manipulate their perceptions of their progress towards these two goals. Consistent with the findings of Study 1, participants checked the balance of their accounts more frequently when they felt that they were making relatively poor progress toward the goals (at least in the second month of the game).[5] The findings of Study 2, therefore, extend those of Study 1 to suggest a causal relation between perceived progress and monitoring. Study 2 also found that participants were more likely to monitor their progress if they considered the prevention goal to be important, but they were less likely to monitor their progress if they considered to promotion goal to be important.

4.0 Study 3

Study 2 manipulated participants' progress towards their financial goals by manipulating the amount of money in participants' accounts at the start of the game.

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[5] This effect may have been detected only in the second month, rather than the first month, because participants may have needed some time to develop a sense of their progress.

However, perceived progress may be influenced not only by the absolute size of discrepancies between the current state and desired state (as determined by, for example, the amount of money in participants' accounts at the start of the game), but also by the rate with which people are making progress toward the goal (Carver & Scheier, 1982; 1990; Hsee & Abelson, 1991). For example, someone may be a long way from achieving their goal of saving £150 in a month, but if they are saving a substantial amount each week, then they may believe that they are making good progress toward this goal. Study 3, therefore, independently manipulated both rate of progress and proximity to the goal to: a) see which has the greater influence on perceived progress, and b) provide a second test of the idea that perceived progress influences the frequency with which participants check their progress. Participants again played a computerized 'game of life' where they could gain or lose money over a series of "days" (trials) and had the opportunity to check their balance on each trial. However, in Study 3, we manipulated both the amount of money that participants' started the game with (i.e., their proximity to the goal) and the size of the credits or debits that they received (i.e., their rate of progress).

4.1 Method

4.2 Participants

Eighty students and staff (26 males) from a university in the north of England volunteered for the study. The mean age of the participants was 21.94 years (SD = 5.34).

4.3 Design

Study 3 adopted a 2 between (starting balance: high vs. low) x 2 between (rate of progress: fast vs. slow) design and participants were randomly allocated to conditions. Participants in the high starting balance condition started the game with £96, whereas those in the low starting balance condition started the game with £48. Participants in the fast progress condition received more money during the game (£157 in total) than those in the slow

progress condition (£107 in total). As in Study 2, we created promotion and prevention goals by informing participants that they would receive £3 for participating in the study, but that they could lose or gain money depending on their performance on the games. Participants were told that each time that their balance at the end of the month was over £180, they would receive an additional £1.50, but that each time that their balance at the end of the month was below £80 they would have £1.50 taken away. In reality, all participants were paid £6 for their participation, as before.

4.4 Procedure

Study 3 adopted the same procedure as Study 2. Participants were also asked to estimate their progress and how on track they were to achieving the two goals in the same way as in Study 2, however these questions were phrased in terms of the goal of saving £180 (the promotion-focused goal), and avoiding a balance of less than £80 (the prevention-focused goal). The measures proved internally consistent ($\alpha = 0.91$ for the promotion focused goal, and $\alpha = 0.86$ for the prevention focused goal across both months) and so were combined to create a measure of perceived progress toward each goal.

<div align="center">

4.5 Results

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One participant was excluded because they mentioned that they mentally calculated his balance in every trial, and thus did not need to check it. Data on the perceived importance of the two goals was missing for two participants due to technical issues, and so these values were replaced with the mean for the respective condition. Thus, in the final analysis, there were 19 participants in the high balance, fast progress condition, 19 participants in the high balance, slow progress condition, 20 participants in the low balance, fast progress condition, and 21 participants in the low balance, slow progress condition.

4.6 Manipulation check

Across both months, participants in the high balance, fast progress condition ended the month with more money in their accounts (M = £179.11, SD = £3.84) than did participants in the high balance, slow progress condition (M = £126.87, SD = £7.52), t(26.80) = 26.96, p < .001. On average, participants in the low balance, fast progress condition completed the game of life with more money in their accounts (M = £127.95, SD = £7.09) than did participants in the low balance, low progress condition (£77.36, SD = £7.80), t(40) = 21.98, p < .001. There was no difference between the final balance of participants in the high balance, slow progress condition and those in the low balance, fast progress condition, t(38) = 0.47, p = .64.

To test whether perceived progress differed as a function of rate of progress and starting balance, we conducted a MANOVA with the measures of perceived progress towards the promotion and prevention focused goals as the dependent variables and the rate of progress and starting balance as the independent variables. There was a main effect of starting balance on perceived progress toward both the promotion and prevention focused goals, $Fs(1, 78) = 31.22$ and 16.81, $p < .001$, partial eta squared = .29 and .18, respectively). Participants with a higher starting balance rated their progress as better ($M_{promotion} = 3.42$, SD = 0.86; $M_{prevention} = 4.23$, SD = 0.79) than those with a lower starting balance ($M_{promotion} = 2.83$, SD = 1.11; $M_{prevention} = 3.64$, SD = 1.00). There was also a main effect of rate of progress on perceived progress toward both the promotion- and prevention-focused goals, $Fs(1, 78) = 47.71$ and 29.60, $ps < .001$, partial eta squared = .39 and .28, respectively). Participants with a faster rate of progress ($M_{promotion} = 3.71$, SD = 0.63; $M_{prevention} = 4.39$, SD = 0.55) rated their progress as better than those with a slower rate of progress ($M_{promotion} = 2.48$, SD = 0.99; $M_{prevention} = 3.43$, SD = 1.03).

The interaction between starting balance and rate of progress did not significantly effect perceived progress toward the promotion-focused goal, $F(1, 78)= 1.85$, $p = .18$, but it did effect perceived progress on the prevention-focused goal, $F(1, 78) = 4.47$, $p = .04$, partial eta squared = .06). Simple main effects showed that all pairwise comparisons were significant. When rate of progress was fast (rather than slow), participants perceived their progress toward the prevention-focused goal to be better both when their starting balance was high ($M = 4.71$, $SD = 0.41$ vs. $M = 4.15$, $SD = 0.80$, for fast vs. slow progress, respectively), $t(29.08) = 2.74$, $p = .01$, $d = 0.88$, and when it was low ($M = 4.38$, $SD = 0.52$ vs. $M = 3.11$, $SD = 1.03$, respectively) $t(29.93) = 5.00$, $p < .001$, $d = 1.56$; although participants appeared to be more sensitive to the rate of progress when the starting balance was low. Similarly, a higher starting balance led participants to perceive that they were making better progress toward their goals, both when the rate of progress was fast $t(36) = 2.16$, $p = .04$, $d = 0.70$, and slow $t(39) = 3.60$, $p = .001$, $d = 1.42$; although participants appeared to be more sensitive to differences in starting balance when the rate of progress was slow.

4.7 Main analyses

Figure 2 shows the frequency of checking by condition. To examine which factors predicted the frequency with which participants checked the balance of their accounts, we conducted two hierarchical regressions, one for the first month, and one for the second month. As before, participants' ratings of the importance of the two goals were entered in Step 1 of the analyses. Contrasts representing starting balance (high vs. low), and rate of progress (fast vs. slow) were entered in Step 2. In Step 3 we entered the interactions between a) starting balance and rate of progress, b) starting balance and participants' ratings of the importance of the promotion goal, c) starting balance and ratings of the importance of the prevention goal, d) rate of progress and the importance of the promotion goal, and e) rate of progress and the importance of the prevention goal. Finally, in Step 4 we entered the 3-way

interactions between a) starting balance, rate of progress, and participants' ratings of the importance of the promotion goal, and b) starting balance, rate of progress, and importance of the prevention goal. The results of these regressions are presented in Tables 4 (first month) and 5 (second month).

In the first month, the frequency of checking was predicted by an interaction between the balance condition contrast and participants' ratings of the importance of the promotion-focused goal at the third step (B = -1.19), t(78) = 2.05, p = .044. Figure 3 shows the effect of starting balance on the frequency of checking when participants rated the goal of saving money as relatively important (1 SD above the mean) versus relatively less important (1 SD below the mean). The importance of the promotion-focused goal had a positive relationship with the frequency of checking for participants in the high balance conditions, but a negative relationship for participants in the low balance conditions. Thus, participants who started the game with relatively more money checked most frequently when they considered the goal of saving money to be important, whereas participants who started the game with relatively less money checked their progress less frequently when they considered the goal of saving money to be important.

At the final step, there was a significant 3-way interaction between the progress condition contrast, the balance condition contrast, and participants' ratings of the importance of the prevention-focused goal (B = -1.22), t(78) = 2.23, p = .03. The plot of this interaction is shown in Figure 4, which shows the interaction between progress and balance conditions when participants rated the goal of ensuring that their balance remained above £80 as relatively important (1 SD above the mean) versus relatively less important (1 SD below the mean). Slope difference tests showed that, when participants considered the prevention goal to be relatively important, they were more likely to check their balance when they were making slow progress and started with a low balance (i.e., when they were closer to the

critical value specified by the prevention goal), than if they were making slow progress, but started with a high balance (i.e., when they were further from the critical value specified by the prevention goal), t(78) = 2.32, p = .03. Participants who considered the prevention goal to be relatively important also checked their balance more frequently when they started the game with a high balance and were making fast progress (i.e., when they were furthest from the critical value specified in prevention-focused goal) than when they started the game with a high balance, but were making slow progress, t(78) = 2.94, p < .01. No variables significantly predicted the frequency of checking in the second month.[6]

4.8 Discussion

The findings of Study 3 suggest that the effect of perceived progress on the frequency with which participants check their balance depends on the regulatory focus of the respective goal (i.e., whether the goal is promotion- or prevention-focused) and how important the goal is considered to be. Specifically, in the first month of the game, participants who started the game with more money checked their balance more frequently when they considered the promotion-focused goal (i.e., to save money) to be important, compared to if they considered the goal to be less important. In contrast, participants who started the game with less money checked their balance less frequently when they considered the goal of saving money to be important. This latter effect is consistent with work on the ostrich problem (Webb et al., 2013), which suggests that people may avoid monitoring their progress (even toward goals that they consider to be important) if they do not believe that they are making good progress toward those goals.

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[6] It is interesting to note that we observed differences between conditions only in the first month of Study 3, and in the second month of Study 2. This difference may be due to participants being more sensitive to progress differences earlier on in Study 3 than Study 2, perhaps because Study 3 comprised of university staff and students ranging from first-years to postgraduates, while Study 2 comprised of first-year university students only, and so the former sample may have had more advanced numeracy skills.

The extent to which participants considered the prevention-focused goal to be important also moderated the effects of goal progress on the frequency of checking. However, the perceived importance of the prevention-focused goal had a different effect on the relationship between goal progress and the frequency of checking than did the perceived importance of the promotion-focused goal. Specifically, in the first month of the game, participants who considered the prevention-focused goal to be important checked their progress more often when they were doing well (i.e., when they started the game with relatively more money and were making fast progress), and when they were doing badly (i.e., when they started the game with less money and were making slow progress). In contrast, participants who considered the prevention-focused goal to be less important checked their balance more frequently when they were making relatively poor progress (i.e., they started the game with less money and were making slow progress).

These findings suggest that the effect of perceived goal progress and the importance of the respective goal on the frequency with which people monitor their personal finances may differ as a function of the regulatory focus of the goal. When prevention-focused goals are considered to be important, our findings suggest that people check their balance whether they believe that their progress is likely to be good or bad. In contrast, when promotion-focused goals are considered to be important, the findings of Study 3 suggest that people seem to avoid checking their balance if they believe that it is likely to be relatively poor.

5.0 General Discussion

The present research aimed to investigate the factors that influence how often people check the balance of their personal finances, which is one way that they can monitor their progress toward financial goals. Based on studies of investors monitoring the status of their share accounts, we investigated whether the frequency with which people monitor their

personal finances is influenced by their progress toward their financial goals, as well as by the regulatory focus and perceived importance of these goals.

Study 1 found that perceptions of goal progress influenced the frequency with which participants checked their personal bank accounts. Specifically, we found that participants checked the balance of their accounts more frequently when they believed that they were making poor progress towards their most important financial goal. Study 2 manipulated how much money participants started a financial game with, in order to test the idea that progress toward financial goals influences the frequency with which participants monitor their progress. Participants were given two goals for the game – one prevention-focused (to avoid allowing their balance to drop below a certain value) and one promotion-focused (to try to end the game with a balance greater than a certain value). The findings suggested that, as in Study 1, participants were more likely to check their balance when they believed that their progress was relatively poor. In addition, the more important participants considered the prevention goal to be, the more frequently they checked their progress. Interestingly, however, the more important they considered the promotion goal to be, the less frequently they checked their progress.

Study 3 adopted a similar design, but manipulated both the amount of money that participants started the game with and the rate with which they made progress toward the prevention- and promotion-focused goals. Unlike in Studies 1 and 2, we found that participants checked more frequently if their progress was poor only when they considered the prevention-focused goal (i.e., avoiding a loss) to be important. Consistent with the findings of Studies 1 and 2, when the prevention-focused goal was considered to be important participants checked their balance more frequently if they believed that their progress was relatively poor. However, in contrast to this effect and the findings of Studies 1 and 2, Study 3 additionally found that participants who considered the promotion- and/or prevention-

focused goals to be important also checked more frequently when they perceived their progress to be good.

To the extent that managing stocks is likely to be associated with a promotion focus (Zhou & Pham, 2004), this latter finding is consistent with the findings of Karlsson et al. (2009), who showed that people are more likely to monitor their stock portfolio in a rising market. The findings of Study 3 suggest that the more frequent monitoring that we observed in Studies 1 and 2 when participants were making poor, relative to good, progress may be due to participants pursuing goals that are more prevention focused, and/or perceiving their progress toward these goals to be relatively bad. This interpretation is supported by the fact that the majority of the goals that participants' specified in Study 1 were prevention-focused, and the finding that the average balance in participants' accounts and their perceptions of goal progress was not as numerically high or as positive in Study 2 as they were in Study 3. The findings of Study 3, that the importance of the prevention-focused goal was associated with the frequency of checking regardless of whether progress was perceived to be good or poor, is reminiscent of the findings of Gherzi et al. (2014), who found that participants are more likely to monitor their trading accounts after both positive and negative daily returns.

Taken together, the present findings start to advance our understanding of the factors that influence when people monitor their progress toward goals by suggesting that goal progress; along with the regulatory focus and the importance of the goal influence (sometimes in combination) when people monitor their finances. In two out of three studies, participants were more likely to check their personal finances when they believed that their progress was relatively poor (Studies 1 and 2); however, Study 3 showed that the effect of perceived progress on monitoring can depend on the importance and nature of the goal, such that participants in Study 3 who felt that gaining money was important were more likely to check their balance when they believed that their progress toward this goal was good,

whereas participants who felt that avoiding losing money was important were more likely to check their balance when they believed that their progress was good or bad.

5.1 Why do people monitor more when their progress is poor?

Control Theory (Carver & Scheier, 1982; 1990) provides one potential explanation for why participants may have monitored their finances more when they considered their progress to be poor. According to Control Theory, the further that people are from achieving their goal, the harder they will work towards it. This is thought to occur because the self-regulatory system works to reduce discrepancies between the current state and the desired target. For example, Fulford, Johnson, Llabre, and Carver (2010) found that people increase their efforts when their progress toward personal goals is worse than expected (assuming that they believe that they can still achieve the goal). To the extent that checking the balance of a personal account might help people to manage their finances, participants in the present research may have checked their balance more often when their progress was relatively poor as a means of motivating or regulating action. People may do so more often in the context of managing personal bank accounts than managing investments because personal behavior has a greater direct influence on financial outcomes in the former than the latter context.[7]

5.2 Why does progress interact with the regulatory focus of the goal to predict the frequency with which people monitor their personal finances?

Study 3 found that the relationship between perceived progress and the frequency with which participants checked the balance of their accounts depended on the type of goal that participants were concerned with pursuing, and how important they considered it to be. Participants who considered the promotion-focused goal to be important checked their balance more often when their progress was relatively good (i.e., when they were close to attaining the balance specified by the promotion-focused goal). In contrast, participants who

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[7] We thank an anonymous reviewer for making this point.

considered the prevention-focused goal to be relatively important checked their balance more often when progress was both poor and good (i.e., when their balance was either close or far from the balance specified by the prevention-focused goal). This pattern of findings suggests that participants may have checked their progress more frequently when the balance of their accounts was near to the to-be-attained or to-be avoided balances because they were concerned with knowing whether or not they had obtained the goal that was more attainable given their circumstances.

There are other theoretical reasons for why the importance of the promotion- versus the prevention-focused goal had slightly different effects on the frequency with which participants checked their progress toward their financial goals. First, evidence suggests that a promotion focus increases sensitivity to gains, whereas a prevention focus increases sensitivity to losses (Higgins et al., 1998; Förster, Grant, Idson, & Higgins, 2001). Related to this, evidence suggests that success feedback maintains the motivation to attain positive outcomes, whereas failure feedback maintains the motivation to avoid negative outcomes (Carver, 2006; Van-Dijk & Kluger, 2004). As such, participants in the present research who considered the promotion goal to be important may have been more likely to seek positive feedback when their progress was going well in order to maintain their motivation. Similarly, participants who considered the prevention goal to be important may have sought to maintain their motivation by seeking feedback when their progress was going badly. However, as progress towards the promotion goal becomes favorable (as it did for participants in the high balance, fast progress condition of Study 3), Carver (2006) proposed that even people who are initially prevention focused also adopt a promotion focus. This proposal might explain why we found that the importance of the prevention focused goal also predicted checking when goal progress was relatively good (i.e., because participants' switched to having a stronger promotion focus).

Another theoretical reason for the differences in checking behavior as a function of the regulatory focus of the goal concerns the different motives that people may have for checking their progress toward promotion- versus prevention-focused goals. Leonardelli et al. (2007) and Higgins (1998) theorized that, since promotion-focused goals are concerned with attaining positive outcomes, this focus is associated with a self-enhancement motive (i.e., the motivation to feel good about oneself and to maintain self-esteem; Sedikides & Strube, 1995). In support of this assertion, Leonardelli et al., found that participants pursuing promotion-focused goals (i.e., those who were asked to reflect on what they wished to achieve, or who they wanted to be) were more concerned with self-esteem (as measured by the greater accessibility of esteem-related words) than participants pursuing prevention-focused goals (i.e., those asked to reflect on their duties, obligations, or who they felt they ought to be). Thus, participants who considered the promotion-focused goal to be important in Study 3 may have been more inclined to monitor their progress when it was relatively good than when it was relatively bad, because doing so had the potential to satisfy their desire for self-enhancement.

In contrast to promotion-focused goals (the pursuit of which is associated with self-enhancement motives), prevention-focused goals tend to be associated with self-verification motives. Thus, participants in the present research who considered the prevention-focused goal to be important may have checked their balance when near to both positive and negative critical values because prevention-focused goals engender the need to confirm one's beliefs (Higgins, 1998). As such, a prevention focus should lead people to check their progress more frequently both when they feel that it is going badly and when they feel that it is going well, in order for them to confirm their expectations about their goal progress.

5.3 Limitations and future directions

One limitation of the present research is that we only examined some of the ways in which people can monitor their progress toward their financial goals (namely, by checking the balance of a personal account using an online system or checking the balance of an account in a financial simulation). As such, caution is needed in concluding that the observed effects also apply to other ways of monitoring progress, such as checking the balance of an account using a cash machine, or mentally keeping track of finances. Another limitation is that participants were self-selected (i.e., they responded to a request for volunteers to take part in research) and, as such, may be more likely to monitor their personal finances or engage in a different pattern of financial monitoring, than a more representative sample. This limitation may be overcome in future research by examining the anonymized data of a randomly selected sample of bank customers, and using changes in the balance of the respective accounts as a proxy for perceived goal progress.

Our findings may help to inform interventions designed to help people to achieve their financial goals. For example, the finding that participants monitored their progress more frequently when their progress toward financial goals was relatively poor suggests that people may check for self-regulatory purposes (e.g., to find out whether they need to take action in order to achieve their goal). Therefore, interventions may be most effective when they are designed to alert people to situations that require self-regulation (e.g., to avoid further spending). For example, people who are trying to avoid becoming overdrawn could receive automated alerts (e.g., text messages) indicating when the balance of an account falls below a pre-specified value. Similarly, people with a savings goal might be alerted when the ratio of their income to expenditure is such that they will not have spare money to commit to savings at the end of the month. The finding that perceptions of progress interacted with regulatory focus to determine when people checked their progress might also be informative for interventions. Specifically, our findings suggest that those who are pursuing promotion-

focused goals (e.g., trying to save money) may also benefit from receiving alerts when their progress is going well as, based on previous research, this could help to maintain their motivation to achieve their goal (Carver, 2006; Reynolds, Webb, Benn, Chang, & Sheeran, 2017; Van-Dijk & Kluger, 2004).

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Table 1

Regression of Frequency of Account Logins on Predictors (Study 1)

	β	B	SE(B)	95% CI
Step 1				
Total transactions	0.35**	0.06	0.02	0.02 to 0.10
F	9.72**			
R^2	0.12			
Step 2				
Total transactions	0.34**	0.06	0.02	0.02 to 0.10
Salience of the goal	0.08	0.49	0.69	-0.88 to 1.86
Perceived progress	-0.28*	-1.70	0.67	-3.04 to -0.36
Regulatory focus of the goal	-0.25	-1.49	1.411	-3.43 to 2.21
F	4.33**			
R^2	0.21			
Step 3				
Total transactions	0.32**	0.06	0.32	0.02 to 0.10
Salience of the goal	0.11	0.65	0.77	-0.89 to 2.18
Perceived progress	-0.25*	-1.49	0.71	-2.91 to 0.07
Regulatory focus of the goal	-0.01	-0.61	1.41	-3.43 to 2.21
Perceived progress x regulatory focus	-0.10	-1.05	1.56	-4.16 to 2.06
Perceived progress x salience	0.11	0.45	0.60	-0.75 to 1.66
F	3.23**			
R^2	0.23			

Note. * $p < .05$, ** $p < .01$,

Table 2

Regression of Frequency of Checking on Goal Importance and Condition in the First Month (Study 2)

	β	B	SE(B)	95% CI
Step 1				
Importance of promotion goal	-0.19	-0.64	0.49	-1.62 to 0.34
Importance of prevention goal	0.22	0.80	0.53	-0.26 to 1.85
F	1.24			
R^2	0.03			
Step 2				
Importance of promotion goal	-0.15	-0.49	0.50	-1.50 to 0.51
Importance of prevention goal	0.19	0.69	0.54	-0.38 to 1.77
High vs. medium/low balance	-0.14	-0.34	0.28	-0.89 to 0.21
Medium vs. low balance	-0.09	-0.39	0.51	-1.40 to 0.62
F	1.14			
R^2	0.06			
Step 3				
Importance of promotion goal	-0.16	-0.55	0.50	-1.55 to 0.45
Importance of prevention goal	0.20	0.73	0.56	-0.38 to 1.85
High vs. medium/low balance	-0.11	-0.26	0.28	-0.81 to 0.30
Medium vs. low balance	-0.11	-0.51	0.51	-1.53 to 0.51
High vs. medium/low balance x importance of promotion goal	-0.12	-0.30	0.30	-0.89 to 0.29
Medium vs. low balance x importance of promotion goal	-0.19	-0.76	0.65	-2.06 to 0.54
Medium vs. low balance x importance of prevention goal	-0.04	-0.19	0.76	-1.70 to 1.33
F	1.33			
R^2	0.12			

Note. * $p \leq .05$. The interaction between high vs. medium/low balance and the importance of prevention goal was excluded from the analyses because it exhibited a tolerance level of 0.00, indicating a high degree of

multicollinearity with the other variables. Separate analyses examining this interaction separately did not yield any significant effects.

Table 3

Regression of Frequency of Checking on Goal Importance and Condition in the Second

Month (Study 2)

	β	B	SE(B)	95% CI
Step 1				
Importance of promotion goal	-0.28*	-0.73	0.37	-1.46 to -0.001
Importance of prevention goal	0.29*	0.81	0.40	0.02 to 1.60
F		1.24		
R^2		0.06		
Step 2				
Importance of promotion goal	-0.22	-0.56	-0.22	-1.29 to 0.17
Importance of prevention goal	0.25	0.69	-0.25	-0.10 to 1.47
High vs. medium/low balance	-0.22*	-0.40	0.22	-0.80 to 0.00
Medium vs. low balance	-0.13	-0.43	0.13	-1.17 to 0.31
F		1.14		
R^2		0.12		
Step 3				
Importance of promotion goal	-0.23	-0.59	0.37	-1.34 to 0.15
Importance of prevention goal	0.28	0.78	0.42	-0.05 to 1.61
High vs. medium/low balance	-0.21	-0.37	0.21	-0.79 to 0.05
Medium vs. low balance	-0.15	-0.49	0.38	-1.24 to 0.27
High vs. medium/low balance x importance of promotion goal	0.00	-0.00	0.22	-0.44 to 0.44
Medium vs. low balance x importance of promotion goal	-0.10	-0.31	0.49	-1.28 to 0.66
Medium vs. low balance x importance of prevention goal	-0.08	-0.28	0.57	-1.41 to 0.85
F		1.33		
R^2		0.15		

Note. * = $p \leq .05$. The interaction between high vs. medium/low balance and the importance of prevention goal was excluded from the analyses because it exhibited a tolerance level of 0.00, indicating a high degree of

multicollinearity with the other variables. Separate analyses examining this interaction separately did not yield any significant effects.

Table 4

Regression of Frequency of Checking on Goal Importance and Condition in the First Month (Study 3)

	β	B	SE(B)	95% CI
Step 1				
Importance of promotion goal	0.10	0.38	0.55	-0.72 to .48
Importance of prevention goal	-0.17	-0.65	0.54	-1.71 to 0.42
F	0.72			
R^2	0.02			
Step 2				
Importance of promotion goal	0.10	0.42	0.56	-0.71 to 1.54
Importance of prevention goal	-0.17	-0.66	0.54	-1.74 to 0.42
High vs. low balance condition	0.04	0.14	0.39	-0.64 to 0.91
Fast vs. slow progress condition	0.25	0.39	0.07	-0.53 to 1.03
F	0.49			
R^2	0.03			
Step 3				
Importance of promotion goal	0.09	0.31	0.58	-0.84 to 1.46
Importance of prevention goal	-0.17	-0.68	0.55	-1.77 to 0.41
High vs. low balance condition	0.13	0.04	0.40	-0.75 to 0.83
Fast vs. slow progress condition	0.13	0.42	0.40	-0.38 to 1.21
High vs. low balance x fast vs. slow progress	-0.13	-0.43	0.40	-1.23 to 0.37
High vs. low balance x importance of promotion goal	0.30*	1.19	0.58	0.03 to 2.34
High vs. low balance x importance of prevention goal	0.16	-0.63	0.55	-1.72 to 0.47
Fast vs. slow progress x importance of promotion goal	-0.15	-0.61	0.58	-1.77 to 0.55
Fast vs. slow progress x importance of prevention goal	0.08	0.31	0.55	0.80 to 1.42
F	0.96			
R^2	0.11			
Step 4				

Importance of promotion goal	0.08	0.33	0.57	-0.81 to 1.47
Importance of prevention goal	-0.23	-0.90	0.55	-1.99 to 0.19
High vs. low balance condition	-0.31*	-0.83	0.37	-1.57 to 0.08
Fast vs. slow progress condition	-0.01	0.02	0.39	-0.76 to 0.81
High vs. low balance x fast vs. slow progress	-0.13	-0.44	0.39	-1.23 to 0.34
High vs. low balance x importance of promotion goal	0.27[+]	1.08	0.57	-0.06 to 2.22
High vs. low balance x importance of prevention goal	-0.11	-0.42	0.55	-0.86 to 1.33
Fast vs. slow progress x importance of promotion goal	-0.17	-0.68	0.57	-1.82 to 0.46
Fast vs. slow progress x importance of prevention goal	0.06	0.24	0.55	-0.86 to 1.33
Balance x progress x importance of promotion goal	-0.18	-0.72	0.57	-1.86 to 0.42
Balance x progress x importance of prevention goal	0.31*	1.22	0.55	0.13 to 2.31
F	1.27			
R^2	0.17			

Note. [+] $p = 0.06$, * $p < .05$, although at subsequent steps higher order effects become conditional effects and are therefore not interpretable as main effects

Table 5

Regression of Frequency of Checking on Goal Importance and Condition in the Second

Month (Study 3)

	β	B	SE(B)	95% CI
Step 1				
Importance of promotion goal	0.06	0.17	0.44	-0.70 to 1.04
Importance of prevention goal	-0.02	-0.05	0.42	-0.89 to 0.79
F	0.09			
R^2	0.00			
Step 2				
Importance of promotion goal	0.06	0.19	0.44	-0.70 to 1.07
Importance of prevention goal	-0.06	0.43	-0.02	-0.91 to 0.80
High vs. low balance condition	0.01	0.04	0.31	-0.57 to 0.65
Fast vs. slow progress condition	0.04	0.10	0.31	-0.52 to 0.71
F	0.07			
R^2	0.00			
Step 3				
Importance of promotion goal	0.00	0.00	0.45	-0.90 to 0.91
Importance of prevention goal	0.14	0.04	0.43	-0.81 to 0.89
High vs. low balance condition	-0.16	-0.04	0.31	-0.66 to 0.58
Fast vs. slow progress condition	0.05	0.13	0.31	-0.49 to 0.75
High vs. low balance x fast vs. slow progress	-0.18	-0.47	0.31	-1.09 to 0.15
High vs. low balance x importance of promotion goal	0.19	0.59	0.45	-0.31 to 1.49
High vs. low balance x importance of prevention goal	-0.25	-0.77	0.43	-1.62 to 0.10
Fast vs. slow progress x importance of promotion goal	-0.23	-0.71	0.45	-1.61 to 0.20
Fast vs. slow progress x importance of prevention goal	0.22	0.67	0.43	-0.20 to 1.53
F	0.95			
R^2	0.11			
Step 4				
Importance of promotion goal	0.02	0.07	0.45	-0.84 to 0.97

Importance of prevention goal	-0.01	-0.03	0.43	-0.90 to 0.84
High vs. low balance condition	-0.03	-0.09	0.31	-0.71 to 0.53
Fast vs. slow progress condition	0.04	0.11	0.31	-0.51 to 0.73
High vs. low balance x fast vs. slow progress	0.18	-0.47	0.31	-1.09 to 0.15
High vs. low balance x importance of promotion goal	0.16	0.50	0.45	0.41 to 1.40
High vs. low balance x importance of prevention goal	0.22	-0.67	0.43	-1.53 to 0.20
Fast vs. slow progress x importance of promotion goal	-0.24	-0.77	0.45	-1.67 to 0.14
Fast vs. slow progress x importance of prevention goal	0.22	0.67	0.43	-0.20 to 1.54
Balance x progress x importance of promotion goal	-0.21	-0.69	0.45	-1.59 to 0.22
Balance x progress x importance of prevention goal	0.20	0.61	0.43	-0.26 to 1.48
F	1.04			
R^2	0.15			

* $p < .05$.

Figure 1

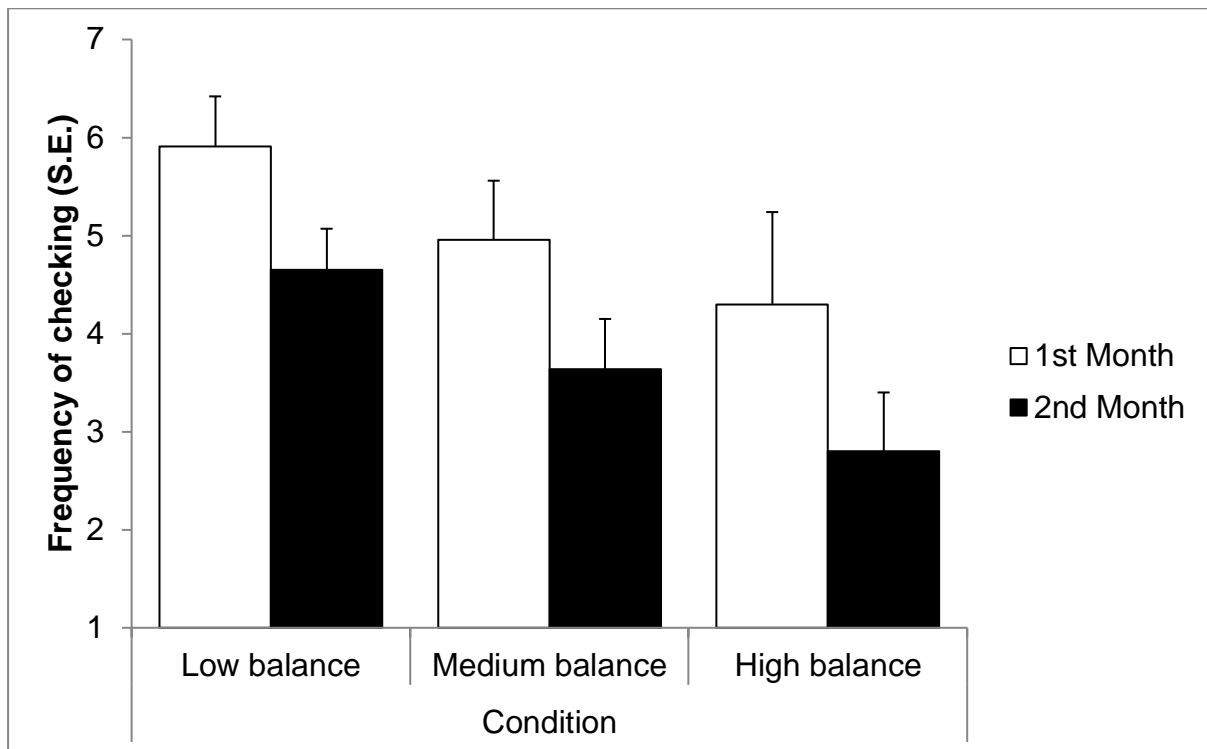Frequency of Checking by Condition and Month (Study 2)

Figure 2

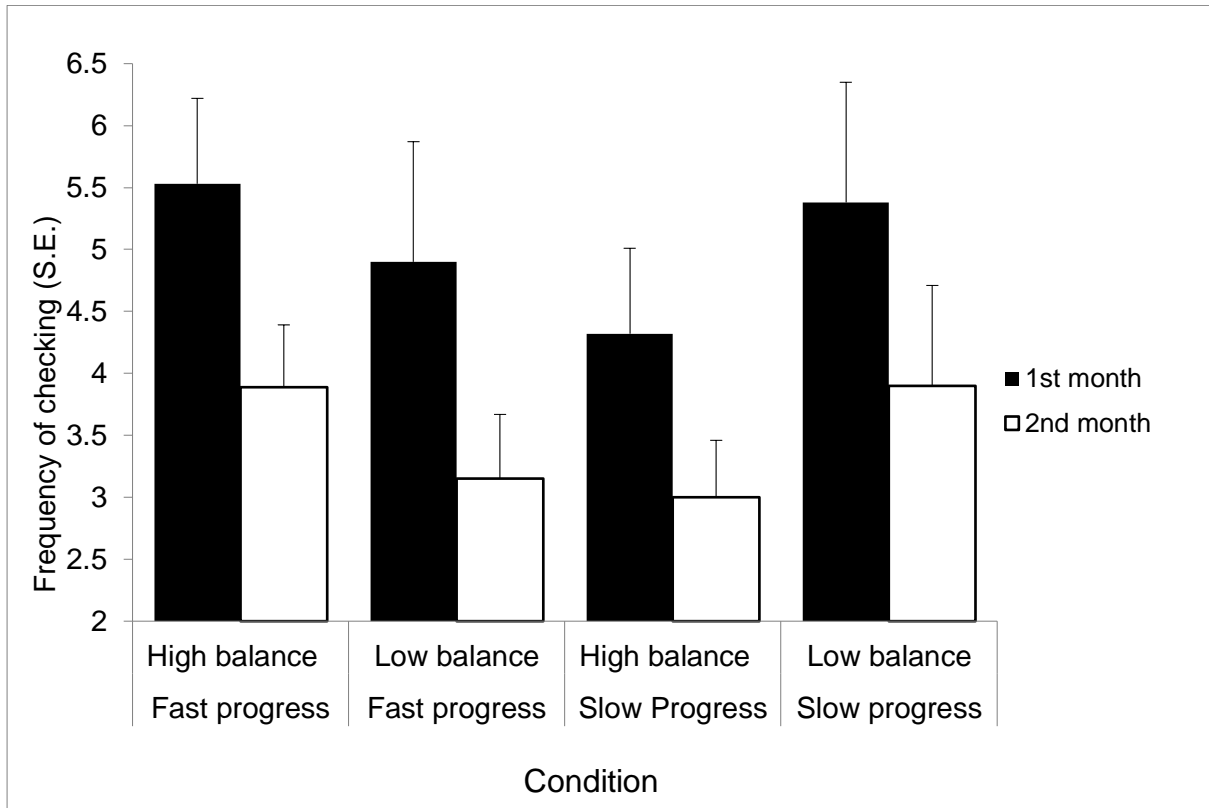Frequency of Checking by Condition and Month (Study 3)

Figure 3

Frequency of Checking as a Function of the Importance of the Promotion Goal and Starting
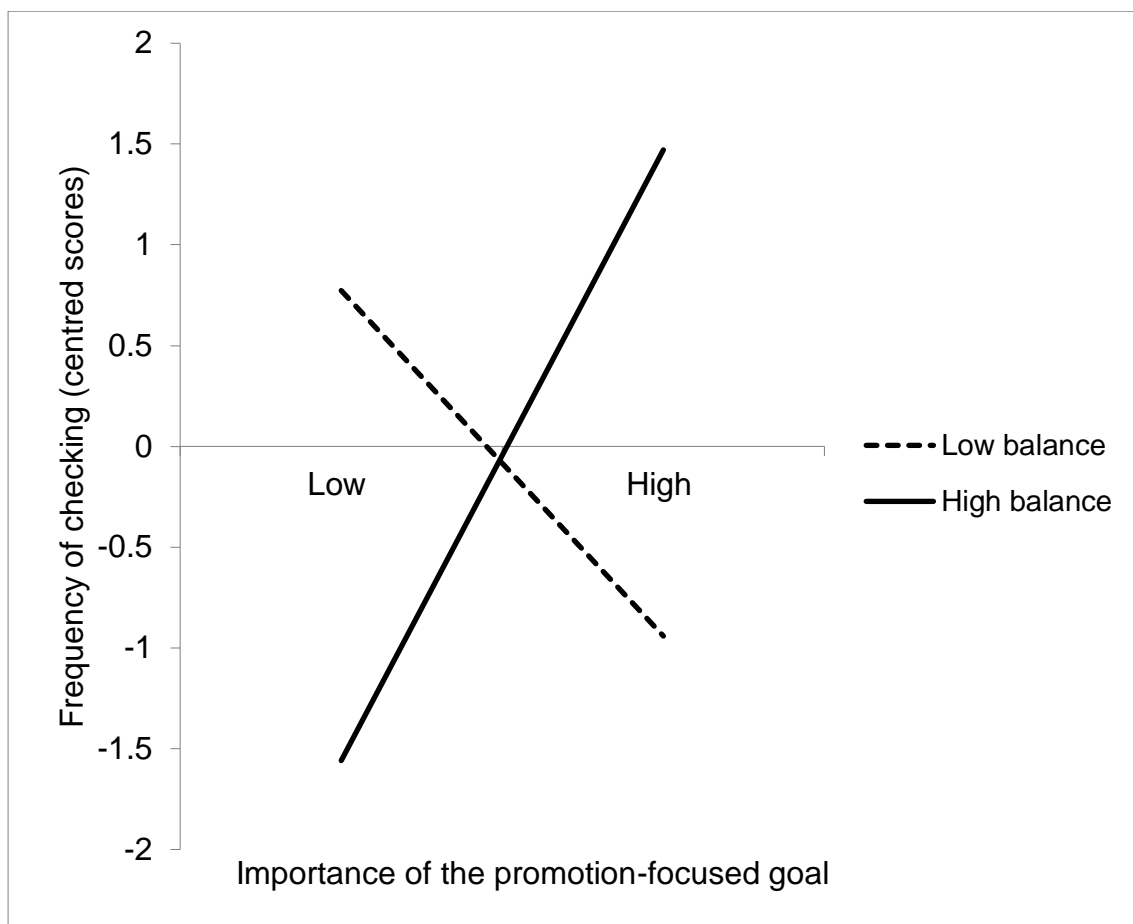
Balance (Study 3)

Figure 4

Frequency of Checking as a Function of the Importance of the Prevention Goal and Starting
Balance (Study 3)