

COMMITTED BUT CLOSED-MINDED: WHEN MAKING A SPECIFIC PLAN FOR A GOAL HINDERS SUCCESS

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Much work has shown that planning facilitates goal attainment. The present work demonstrates that while plans generally make people more likely to act on a goal, they may sometimes lead to failure rather than to success, particularly when recognizing and seizing an alternative opportunity is essential for achieving the goal. Participants were assigned a goal in the lab, with sufficient or insufficient time and with a specific plan or broad intention to attain it. With sufficient (unlimited) time, a specific plan increased attainment, thus replicating the usual benefit of planning. Within the insufficient time condition, however, the specific plan impaired performance, because participants failed to capitalize on an alternative opportunity for achieving the goal. When openness to alternatives is crucial to success, plans can drastically decrease overall rates of attainment.

Plans are remarkably helpful for attaining goals. Without plans, goal achievement requires careful self-regulation. One must monitor the environment for potential opportunities for attainment. When an opportunity arises, one must formulate a helpful course of action and execute it. Plans circumvent much of that process by specifying in advance when and how to act. Once a person commits to a plan, goal pursuit becomes more smooth and effortless (Brandstätter, Lengfelder, & Gollwitzer, 2001; Webb & Sheeran, 2003), thereby greatly increasing rates of success (Gollwitzer, 1999; Gollwitzer & Brandstätter, 1997).

While plan making can be hugely beneficial, it may also cause more harm than good in certain contexts. Successful goal striving often hinges on the capacity to switch flexibly among multiple alternative routes to attainment. If one opportunity for attainment is obstructed, one ought to abandon it for a more viable alternative. Such flexibility in goal pursuit may be reduced when people commit to a plan. Indeed, because planning involves committing to a specific means for

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meeting a goal, attention to alternative opportunities is often reduced after a plan is made (Masicampo & Baumeister, 2011; Parks-Stamm, Gollwitzer, & Oettingen, 2007). The current work tested whether that reduction in attention could sometimes hinder goal fulfillment. It was hypothesized that the inattention that occurs after a plan is made could cause people to overlook and therefore fail to capitalize on alternative opportunities for attainment, even when seizing such alternatives becomes (due to changing circumstances) the only way to succeed.

BENEFITS OF PLAN MAKING

People frequently make strong but generic commitments to their goals. They may resolve to lose 20 pounds but never develop a precise plan for accomplishing that. Such intentions have only a moderate relationship to actual behavior (Ajzen, 1991). Many people who commit to a goal never take the steps necessary to attain it. To achieve success, it helps to make a commitment that details exactly what one will do and when one will do it. Gollwitzer and his colleagues refer to such behavioral plans as implementation intentions (Gollwitzer, 1999; Gollwitzer & Brandstätter, 1997). Implementation intentions work well because they translate abstract and generic intentions into simple, executable actions.

Once a person has committed to a specific plan, not only is goal fulfillment more likely, but attaining it becomes more automatic (Brandstätter et al., 2001). Most of the important decisions have been made during the planning process. Hence, there is no longer a need to contemplate future actions or to search for opportunities for fulfillment. The amount of mental resources needed for goal pursuit is drastically reduced. Indeed, well-defined plans are executed even when mental energy is low (Webb & Sheeran, 2003) or attention is occupied by other concerns (Brandstätter et al., 2001). Plans are like scripts that can be followed somewhat mindlessly to completion.

While plans are generally beneficial, the present work examined whether plans could sometimes hurt goal pursuit, particularly when noticing and seizing alternative opportunities for fulfillment is necessary for success. Empirical evidence as to whether plans could be hurtful in such a context is slight and mixed. Two main lines of work have contained suggestions that plans would not cause such counterproductive effects. The first has demonstrated that plans preserve flexibility, including the ability to capitalize on alternative opportunities for fulfillment (Jaudas & Gollwitzer, 2004). The second suggests that even when plans do decrease the use of alternatives (e.g., Parks-Stamm et al., 2007), the process is largely conscious and therefore may easily be controlled (Bayuk, Janiszewski, & Leboeuf, 2010). Both lines of work suggest that plans would not hurt goal attainment, even if plans are derailed and alternatives need to be pursued. In the following sections, the evidence for these arguments is reviewed along with further evidence to suggest that plans could nevertheless hinder success.

PLANS AS PRESERVING FLEXIBILITY

One view contends that goal pursuit remains flexible after plans are made. Jaudas and Gollwitzer (2004) showed that people who form a plan for a goal are capable

of abandoning that plan to pursue alternative opportunities of attainment. They conducted a study in which participants viewed numerous pairs of objects, and participants' goal was to select the object that was associated with the most points. In a first block of trials, the most valuable object was a flower that was worth 50 points. Some participants formed a plan to select the flower immediately whenever it appeared. Those participants were faster at selecting the flower icon than were non-planners, and they also earned more points overall than non-planners. In a second block of trials, participants were informed that a new object that was worth 60 points would begin to appear. To perform well in the second phase, participants had to select the new object over the flower whenever the two objects were paired. If plans caused goal pursuit to be rigid and inflexible, then planners would continue to favor the flower to some degree, perhaps causing selection of the new object over the flower to be difficult and slow. Results revealed that there were no differences between planners and non-planners when selecting the new object. Reaction times and accuracy rates were unchanged due to prior plans. Hence, forming a plan to respond to one opportunity for attainment did not make it difficult to capitalize on a new, more valuable alternative. The conclusion from that work was that flexibility is preserved after plans for a goal are made. However, participants knew that the situation had changed, and they had ample opportunity to revise their plan for the second block of trials. This finding merely shows that a previous plan does not necessarily carry over into subsequent trials and interfere with performance under different contingencies.

DIFFERENT EFFECTS ON DIFFERENT STAGES OF GOAL PURSUIT

Although Jaudas and Gollwitzer (2004) provided some support for flexibility after plan making, the present work adopted the view that such flexibility is not uniformly maintained. This view derives from the idea that there are two stages of goal pursuit. The first involves identifying opportunities for fulfillment. The second involves acting on opportunities when they arise. We adopted the view put forth by Parks-Stamm, Gollwitzer, and Oettingen (2007) that plans decrease flexibility during the first stage of goal pursuit (identifying opportunities) but not the second (initiating action). That view is consistent with prior research on the mechanism underlying plan making (e.g., Webb & Sheeran, 2007). It also explains prior evidence of flexibility after planning (e.g., Jaudas & Gollwitzer, 2004) while simultaneously supporting the present prediction that plans could sometimes induce inflexibility to the point of hindering success.

Parks-Stamm et al. (2007) provided an elegant demonstration of the different effects of plans on flexibility across the two stages of goal pursuit. In one study, participants were assigned a goal such that opportunities to fulfill the goal were made highly identifiable. Hence, the first stage of goal pursuit (identifying opportunities) was easily accomplished. Plans in that context did not cause less use of alternative opportunities. Indeed, plans in that study seemed to increase rather than decrease use of alternatives. In another study, however, Parks-Stamm and colleagues provided participants with a goal such that it would require careful thought and attention to identify opportunities to fulfill the goal. Participants thus had to complete the first stage of goal pursuit (identifying opportunities) in order to succeed. In that study, plans significantly decreased the tendency for participants

to identify and use alternative opportunities for attaining a goal. Hence, plans appeared to decrease flexibility significantly. The conclusion from those studies was that plans preserve the flexible use of alternative opportunities so long as those alternatives are outwardly identified, but when identifying alternatives require careful thought and attention, plans significantly decrease their use.

The idea that plans reduce flexibility during one stage of goal pursuit but not the other is consistent with prior research that has examined the mechanism underlying plan making. Plans translate broad and abstract goals ("I will achieve Z.") into specific behavioral intentions, as in the statement "When some cue X happens, I will execute behavior Y." In order for plans to be successfully executed, the cue X needs to be maintained in memory, while the behavior Y is automatically carried out and does not require the same degree of attention (Gollwitzer, 1999; Webb & Sheeran, 2007). That explains why the first stage of goal pursuit is characterized by inflexibility: All of one's attention is focused on the target cue, and so attention to alternative cues and opportunities is reduced (Parks-Stamm et al., 2007; Shah, Friedman, & Kruglanski, 2002). Meanwhile, the planned-for behavior is maintained as an automatic response to the target cue. It does not demand special attention, and so alternative behaviors are not inhibited. Plans thus reduce flexibility in terms of identifying alternative opportunities but not in terms of initiating alternative behaviors.

The difference between identifying opportunities and acting on them explains why prior work has found flexibility (rather than inflexibility) after goal pursuit. Jaudas and Gollwitzer (2004) examined whether planners presented with a new, useful alternative could act on it. The crucial detail is that their participants were told explicitly about the alternative opportunity. That is, they were told that there would be another scoring opportunity better than the one (the flower) they had previously emphasized for best results. Hence, success in that study required acting on an alternative rather than identifying it as useful. Jaudas and Gollwitzer themselves concluded in later discussions (in Gollwitzer, Parks-Stamm, Jaudas, & Sheeran, 2008) that their study revealed that the automatic responding associated with plans (i.e., the action initiation stage of goal pursuit) is highly controllable. It is perhaps easy to revise one's former plan to watch for a highly desirable new opportunity when one is specifically warned about it. But without such warning, plans might well lock a person into a given pathway and cause the person to fail to notice alternative opportunities that would present themselves. That was the focus of the present work.

Therefore, the present research commenced at the first stage of goal pursuit (identifying alternative opportunities and then acting on them) rather than at the second (acting on alternatives only). It was hypothesized that plans could lead to failure, particularly when both the identification and use of alternatives are crucial for success.

NEGLECT OF ALTERNATIVES AS DUE TO INATTENTION VERSUS CONTROL

Another view favoring the notion that plans preserve flexibility in goal pursuit contends that planners are conscious of the decision to overlook alternative opportunities for attainment, and so plans do not cause hurtful inattention or rigid-

ity. In a recent paper, Bayuk, Janiszewski, and Leboeuf (2010) examined whether the tendency for planners to pass over alternatives (e.g., Parks-Stamm et al., 2007) could be attributed to a conscious devaluation process. Across numerous studies, they allowed some participants to form plans for their goals while others left their pursuits unspecified. They then presented participants with various alternative opportunities for attainment. Planners rated the alternatives as less attractive and less valuable than did non-planners. Hence, Bayuk and colleagues argued that planners do not capitalize on alternatives in large part because they consciously devalue alternative opportunities for achieving their planned-for goals.

The view of planners as consciously devaluing alternatives has different implications for goal pursuit than does the view of planners as failing to spot alternative opportunities. The inattention explanation would imply more rigidity in goal pursuit, while the conscious devaluation explanation would imply more control over the amount of interest paid to various paths to attainment. To be sure, devaluation and inattention need not be mutually exclusive. Indeed, Bayuk and colleagues defended the notion that both devaluation and inattention could contribute to the tendency for planners to disregard alternatives. Still, the unique contribution of devaluation that Bayuk and colleagues revealed brings into question whether inattention plays a meaningful role. If the role of devaluation is more central, then planners may be capable of shifting their preferences when plans are threatened and flexibility is needed. Plans would not necessarily hinder goal pursuit. In contrast, rigidly sticking to a plan and not noticing other opportunities could be costly in terms of reducing goal achievement.

PLANS ELIMINATE GOAL-RELATED THOUGHTS AND ATTENTION

The view adopted in the present work was that plans induce real and consequential inattention and that such inattention could hinder goal attainment. This view was based on recent research that examined the regulation of thoughts and attention after plans are made. In a series of studies, Masicampo and Baumeister (2011) asked participants to reflect on various unfulfilled goals, and some participants were instructed to form specific plans for how they would attain them. Non-planners showed numerous effects of unfulfilled goals on thoughts and attention: they experienced persistent, intrusive thoughts about their goals, they performed worse on later tasks due to interference from their goals, and they exhibited high accessibility of goal-related thoughts. Crucially, each of those effects was eliminated by instructing participants to form plans for achieving their goals. Thus, plans caused a fundamental shift in attention, so that all goal-related thoughts—including attention paid to opportunities for attaining one's goals (Study 3)—were eliminated. This research complements the finding that conscious devaluation can decrease planners' use of alternatives (Bayuk et al., 2010). It revealed that inattention may contribute just as much as conscious devaluation to the tendency for planners to neglect alternatives.

The present work examined whether the above inattention could at times be costly. The path to attaining a goal is often littered with obstacles, including unforeseeable ones. As a result, goal attainment often hinges on a capacity to switch flexibly among various opportunities for attainment. If people cease attending to alternatives after a plan is made, then they may be unable to notice or seize them,

even when doing so would offer the best chance for success. In such cases, plans may lead to failure rather than success.

THE PRESENT RESEARCH

The present research examined a potential, negative effect of planning on success. People who commit to a plan for a goal may overlook alternative ways of attaining it. When success hinges on an ability to notice and capitalize on alternative opportunities for attainment, highly specific plans may hurt rather than help one achieve.

The present study sought to build on previous research on the use of alternative opportunities after plan making by examining the costs associated with that tendency. Bayuk and colleagues (2010) found that planners were less likely than non-planners to use alternatives, but they did not find an overall decrease in goal attainment. Planners may have followed through with their intentions later, thereby leading to levels of attainment comparable to (or possibly greater than) those achieved by non-planners. Parks-Stamm and colleagues (2007) also did not find reduced goal attainment due to the less frequent use of alternatives. Indeed, there were numerous available opportunities for fulfillment in their study. If one set of opportunities was not seized, participants were able to compensate by increasing their use of another. Success therefore did not depend on the ability to switch flexibly among different routes to attainment. One might as well stick with one's plan if it produces results just as good as the alternative pathways. The present work, in contrast, examined a situation in which flexibility was crucial. The aim was to test whether planners could seize an alternative opportunity for goal fulfillment when doing so was critical to success.

In the present study, participants were assigned a goal that they tried to fulfill in the lab. Within one set of conditions, we sought to replicate the standard effect of plan making, which is to facilitate success. In a second set of conditions, however, we expected a drastically different result. An obstacle was introduced so that goal fulfillment required a degree of flexibility. To succeed, participants had to recognize and capitalize on an alternative means of attainment. It was predicted that plan making in that case would hurt goal attainment, because plan makers would not take notice of or capitalize on the crucial alternative.

Participants' task in the present study was to find answers on the internet to various sets of questions. Participants were logged into a program that directed them to a series of websites, with a set of questions to answer for each site. A primary goal to fulfill during the task was assigned at the outset: to look up actor Bill Murray's birth year. The participants would not be reminded to seek that information, and not every website could provide it. So the challenge was to remember to look it up and to identify a website that could provide the answer. In one condition, time was unlimited, and participants were allowed to complete the task without interruption. In that condition, it was expected that making a plan (to use a particular website) would increase success. In another condition, a time limit made it impossible to find all the answers. The last website participants had access to after a time warning was one that participants could have used to look up Bill Murray's birth year. It was expected that most participants would recognize that fact and would therefore use the website to look up the information. However, it was

predicted that participants who made a plan to obtain the information elsewhere (i.e., at a website that would normally have been visited later) would fail to notice and capitalize on the useful alternative.

The present study sought also to rule out a potential alternative explanation for its effects. It was expected that planners would fail to capitalize on an alternative opportunity for fulfilling the assigned goal, and the preferred explanation was that participants would simply fail to notice the usefulness of the alternative opportunity. However, one viable, alternative explanation incorporates no such lack of awareness. It states that plan participants may consciously refuse an alternative due to an obligation to the plans they formed. Indeed, plans could be interpreted as public declarations, and people might feel pressured to honor plans so as not to appear frivolous.¹ If so, planners may recognize potential alternatives but they may nevertheless decide to avoid them. The present study therefore sought to minimize any sense of social obligation among participants.

We minimized feelings of obligation in three ways. First, participants were not assigned a specific plan. Rather, participants were encouraged to formulate a plan of their choosing. That ensured that the content of the plan and the decision to pursue it were dictated by the participant rather than by the experimenter. Second, it was emphasized to participants that they should do whatever they could to fulfill the goal, regardless of any plans. Hence, it was stressed that goal fulfillment was to take precedence over the honoring of plans. Third, evidence of obligation was measured and controlled for statistically. The study assessed the extent to which people felt obligated to use one means over another to see whether that affected rates of success.

The various factors that contributed to participants' failures (including inattention and social obligation) were measured in two ways. First, participants provided explanations for why they failed to fulfill the assigned goal by answering an open-ended question that was administered upon completion of the task. Following that free-response measure, participants then responded to more direct questions (that required responses on Likert-type scales) about whether they were aware of other potential opportunities for fulfilling the assigned goal and to what extent they felt obligated to adhere to the opportunity they had included in their plans. It was expected that both planners' spontaneous explanations and their responses to the more direct questions would reveal that inattention contributed more to their lack of success than would other factors, such as a sense of obligation.

A pilot study determined the most popular means for the assigned goal of looking up Bill Murray's birth year. That means would ultimately serve as the crucial alternative in the study. Wikipedia.org is a popular online encyclopedia, and it was anticipated that it would be the most popular website for learning Bill Mur-

1. The need to control for social obligation was highlighted in a prior examination of plan making and the use of alternatives. Häfner (2000) conducted a study in which participants committed to completing a goal at the end of the study session. When a new opportunity arose to complete the goal prior to the end of the study session, planners were less likely than non-planners to seize it. However, as discussed by Gollwitzer and colleagues (2008), that study was confounded by social obligation. Planners indicated during debriefings they felt obligated to wait until the end of the session. It may therefore have been due to a sense of obligation that planners did not seize the new, alternative opportunity for completing the goal. The present work sought to tease apart the effects of social obligation and inattention so as to assess whether one factor or the other could contribute to inflexibility after planning.

ray's birth year. A pilot study tested that expectation. Twenty undergraduates (14 females; $M_{\text{age}} = 19.70$; $SD = 1.09$) were asked to list two websites they would use (excluding search engines) if they wanted to learn the year in which Bill Murray was born. The most popular answer was Wikipedia, which 75% of respondents listed. The second most popular answer was IMDb.com (The Internet Movie Database), an online database of information related to film and television, which 45% of respondents listed. Thus, Wikipedia appeared to be the most popular website for fulfilling the goal in question.

Participants in the current study were assigned the goal of looking up Bill Murray's birth year while answering various sets of questions. It was predicted that making a plan for the goal would increase success, so long as participants were allowed to complete the task in its entirety. In another condition, a time constraint was introduced that caused the task to end prematurely. Fulfillment of the target goal therefore required that participants take advantage of the last website available to them, which was Wikipedia. Within that condition, it was predicted that there would be a detrimental effect of plan making. It was predicted that participants who had set a plan for the assigned goal would fail to capitalize on Wikipedia. Thus, it was hypothesized that when success requires noticing and capitalizing on an alternative opportunity for attainment, plans can be detrimental.

METHOD

One hundred and two undergraduates (46 females, $M_{\text{age}} = 19.68$, $SD_{\text{age}} = 1.62$) participated in the experiment, which was composed of a 2 (goal condition: no plan vs. plan) \times 2 (time length: sufficient vs. insufficient) between-subjects design. Participants were seated at a computer and were told that they would visit a series of websites spread out across two trials. They would answer up to four questions for each website. Participants were also told there would be a time limit for each trial and that the computer would warn them when time was running low.

Participants were then given the goal to look up Bill Murray's birth year. Participants were told that there would be no prompt during the trials to instruct them to look up that fact but that they would be asked to reproduce it later. It was stressed that participants should prioritize fulfillment of that goal during the session. Participants were told they could look up the information at any point during the two trials.

Participants were shown a partial list of websites they would be visiting, including a description of each website. One of the websites listed was IMDb. Wikipedia was not featured in the list. Participants were told that, of the websites they would be visiting, they could use any one that might be helpful to look up the assigned fact.

The instructions that participants saw in regard to the above list depended on condition. In the no plan condition, participants were told simply to take note of the various websites. After the list, participants saw a new screen with a text box and further instructions. The instructions told participants to ensure fulfillment of the assigned goal by repeating it. They were told to type the phrase "Bill Murray's birth year" five times into the text box.

In the plan condition, participants were asked to indicate one website from the list that they could potentially use to look up their assigned fact. All participants

indicated IMDb. Participants then saw a new screen with a text box and further instructions. The instructions told participants to make a plan to look up Bill Murray's birth year by typing "When I get to [the name of a website], I will look up Bill Murray's birth year" into the text box. They were told to include the name of a website they could use and to type the sentence five times. So as to avoid imposing expectations on participants (about which website should be used to attain the goal), it was emphasized that participants could indicate any website of their choosing. Still, it was anticipated that all participants would include IMDb in their plans. That was indeed the case. Both plan and no plan participants thus had the same goal. However, only participants in the plan condition furnished the goal with a specific plan for attaining it.

After the plan manipulation, participants in both conditions were told that they were free to use any website of their choosing to look up Bill Murray's birth year. It was stressed that participants should fulfill that goal by any means possible. These instructions were included to prevent any implied expectation that participants should adhere to their plans rather than do whatever would most likely yield success. Thus the emphasis was placed on success over plan adherence.

Participants then began the two trials. Before visiting each website, participants saw a screen displaying the name of the website (e.g., "www.craigslist.com"). Then the first question appeared along with the total number of questions for the website (e.g., "Question 1 of 3 for craigslist.com"). After reading the question, participants were directed to the website where they could search for the answer. Participants clicked a button at the bottom of the screen whenever they were ready to move on and submit an answer. After typing an answer, participants were shown the next question in the series.

Participants visited four websites in Trial 1. Though participants were told they would be timed, participants were not timed in either trial. To maintain the appearance that time was being kept, a 2-minute warning was given prior to the last question in Trial 1. None of the websites visited during Trial 1 could have been used to look up Bill Murray's birth year.

Trial 2 was the critical one. Participants visited six websites. The fifth website was IMDb. The fourth website was Wikipedia. Fulfillment of the assigned goal required using one of those two websites. Participants were naive to the number and order of websites in the trial.

Whether participants were able to complete Trial 2 (and therefore visit each of the six websites) depended on which condition they were in. In the sufficient time condition, participants were given ample time to visit all websites and answer all questions. Thus, they had access to both Wikipedia and IMDb as potential means for fulfilling the assigned goal.

In the insufficient time condition, Trial 2 ended while participants were using Wikipedia, and so IMDb was never reached. Immediately after participants saw the screen introducing the Wikipedia, a warning indicated that there were only 30 s remaining in the trial. There were several questions to answer for Wikipedia, and so the implication for participants was that they would not visit any later websites (including IMDb). Indeed, the trial was programmed to end immediately after the last question for Wikipedia. Therefore, the only way to fulfill the target goal was to use Wikipedia instead of IMDb.

The end of the second trial was signaled by the appearance of a prompt that asked participants whether they successfully looked up Bill Murray's birth year.

Participants who were successful were asked to type in the year of Bill Murray's birth. They were also asked to indicate which website they had used to fulfill the goal.

Participants who were not successful were asked an open-ended question about their lack of success. They were asked to describe in detail why they did not succeed at fulfilling the assigned goal. All participants then responded to scale items aimed at assessing perceptions of IMDb and Wikipedia during the task. First, one question measured to what extent participants were aware of Wikipedia as a potential opportunity for fulfilling the assigned goal (*Wikipedia awareness*). For that measure, participants answered the question "While the trials were ongoing, how aware were you of the fact that Wikipedia.org was a website that could provide Bill Murray's birth year?" on a 1 (*not at all aware*) to 7 (*very aware*) scale. Second, we measured to what extent participants felt obligated to use IMDb rather than Wikipedia to fulfill the assigned goal (*IMDb obligation*). Participants answered the questions "To what extent did you feel like you were NOT supposed to use Wikipedia.org to look up your fact?" and "To what extent did you feel like you were supposed to use IMDb.com to look up your fact?" on 1 (*I did not feel that way at all*) to 7 (*I very much felt that way*) scales. Responses to those two items were reliable (Cronbach's $\alpha = 0.60$), and so they were averaged to create the measure of IMDb obligation.²

RESULTS

The main dependent measure was whether participants succeeded at looking up Bill Murray's birth year. A logistic regression predicted success as a function of the plan manipulation (coded 0 for no plan and 1 for plan), the time manipulation (coded 0 for sufficient and 1 for insufficient), and their interaction term. The results revealed a significant interaction, $b = -3.75$, $SE = 1.27$, $p = .003$.

Additional analyses clarified the nature of the interaction. First, a logistic regression focused on participants in the sufficient time condition who were able to visit both Wikipedia and IMDb. Among participants in that condition, there was a significant effect of planning, $b = 2.29$, $SE = 1.11$, $p = .039$, such that more participants in the plan condition (95.5%) were successful than in the no plan condition (68.0%). Thus, we replicated within the sufficient time condition the beneficial effect of plans on goal attainment (e.g., Gollwitzer, 1999).

A logistic regression analysis focused next on participants in the insufficient time condition, who were able to visit Wikipedia but not IMDb due ostensibly to a time constraint. This analysis tested the more novel hypothesis, which was that a plan could sometimes hurt rather than help goal attainment. Consistent with that hypothesis, results revealed a significant effect of planning on goal attainment, $b = -1.46$, $SE = .61$, $p = .017$, so that fewer participants in the plan condition (36.7%)

2. One could argue that, given the low alpha of .60, the two items that comprised IMDb obligation should not be combined into a single measure and instead should be assessed individually. However, the results remained the same regardless of whether the two items were considered together or were analyzed separately. This was the case for all of the reported group comparisons (plan vs. no plan within the insufficient time condition) as well as for the reported mediation analyses. Therefore, to simplify the reported analyses, the two IMDb obligation items were kept together rather than assessed individually.

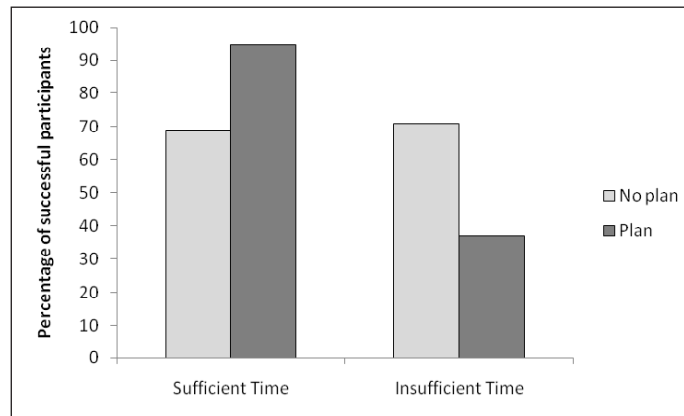


FIGURE 1. Percentages of successful participants by condition.

were successful than in the no plan condition (71.4%; see Figure 1). In the insufficient time condition, participants who committed to a specific plan for their goal (using IMDb) were significantly less successful than other participants.

Follow-up analyses examined to what extent participants in the plan condition appeared to be committed to carrying out the specific plans that they made. These analyses examined whether participants in the plan condition were more likely than participants in the no plan condition to use IMDb (rather than Wikipedia) to fulfill the assigned goal. These analyses focused only on participants in the sufficient time condition who could have used either Wikipedia or IMDb to look up Bill Murray's birth year. A chi square analysis assessing all participants (those succeeding and those failing at the assigned goal) in each condition revealed that more participants in the plan condition (72.7%) used IMDb to look up Bill Murray's birth year than in the no plan condition (24.0%), $\chi^2(1) = 11.2, p < .001$. Another chi square analysis assessing only those participants who succeeded at the goal also revealed that more participants in the plan condition (71.4%) used IMDb than in the no plan condition (35.3%), $\chi^2(1) = 6.45, p = .011$. Hence, plans to use IMDb led to more use of that website among participants in the sufficient time condition. The analyses that follow examined how that commitment led to failure when an obstacle was introduced (i.e., in the insufficient time condition).

Spontaneous Explanations for Failing. Further analyses that were focused only on participants in the insufficient time condition examined the mechanism underlying the counterproductive effect of plans. First, the open-ended responses of unsuccessful participants were analyzed. Two independent raters who were blind to condition read each response and coded it on four dimensions. As discussed previously, the present work sought to distinguish between two factors that could potentially contribute to the detrimental effect of plans on goal attainment: inattention to alternatives and obligation to one's plan. Upon examination of participants' explanations, two additional factors were revealed. First, some participants simply forgot about the assigned goal. Second, some participants gave greater priority to the questions being asked during the trials than to the assigned goal of looking up Bill Murray's birth year. Therefore, each rater looked for evidence of those two factors in addition to the two that were anticipated. Thus, each rater

rated the extent to which each explanation seemed to indicate inattention to Wikipedia (*inattention*), obligation to IMDb (*obligation*), forgetting the goal (*memory lapse*), or a shift in priority away from the assigned goal and in favor of the ongoing task (*priority shift*).

The raters scored the explanations on each of the four dimensions on 1 to 5 scales, with higher numbers indicating that the explanation was consistent with the dimension in question. Interrater reliability was high for each of the four dimensions (all Cronbach's α s > .66). Therefore, the scores from the two raters were averaged to create a composite score for each dimension. Explanations that were representative of one of each of the four dimensions are shown in Table 1.

A one-way MANOVA compared the explanations from the plan and no plan conditions. The prediction was that planners would be more likely to fail than non-planners due to an inattention to the crucial alternative opportunity (Wikipedia) for attaining the assigned goal. Therefore, it was expected that more participants in the plan condition than in the no plan condition would show evidence of inattention. MANOVA results indicated that explanations from participants in the plan condition indeed showed more evidence of inattention than did the explanations from participants in the no plan condition, $F(1, 24) = 5.68, p = .026$. Further MANOVA results revealed that planners were also more likely to exhibit evidence of obligation to IMDb than were participants in the no plan condition, $F(1, 24) = 5.27, p = .031$. In contrast, participants in the plan condition were less likely to show evidence of a memory lapse than were participants in the no plan condition, $F(1, 24) = 5.40, p = .029$. There was no difference between the plan group and the no plan group in indications of having given higher priority to answering the questions in the trial than to completing the assigned goal, $F < .29, p > .60$. Average scores for each of the four dimensions for both conditions are displayed in Table 2.

Additional analyses examined the relative strength of each of the four factors within each condition. A repeated measures ANOVA that focused on participants in the plan (and insufficient time) group revealed that inattention was the highest contributing factor to failure, so that the inattention score was higher than each of the other three scores, F s > 10.07, p s < .01. A similar analysis that focused only on participants in the no plan (and insufficient time) group yielded no significant differences across the four dimensions, F s < 3.5, p s > .12. Thus, inattention to the crucial alternative appears to have been the biggest contributing factor to failure among planners but not among non-planners.

Mediation Analysis Using Scale Measures. Further analyses examined whether participants' self-reports of Wikipedia awareness or IMDb obligation mediated the detrimental effect of plans on achievement. These analyses again focused on participants in the insufficient time condition.

Only the scale responses were used in the mediation analysis. The free response explanations were collected only from participants who were unsuccessful at the goal, and so those explanations could not be used to predict success. Correlation analyses, however, did reveal a high correspondence between the explanation ratings and the scale measures. The inattention scores from the independent raters correlated significantly with participants' Wikipedia awareness scores using the scale item, $r = -.47, p = .017$, so that higher inattention scores given by the raters predicted less Wikipedia awareness as reported by the participants. Likewise, the

TABLE 1.

Scores	Explanation	
High Inattention	"I was unable to look up the fact because I did not have enough time to go through all of the sites in trial 2. The site in which I focused on was imbd.com, and with focusing on that site it did not occur to me until writing this that I could have looked up the birth date of Bill Murray on Wikipedia.com."	
Inattention		5
Obligation		1
Memory Lapse		1
Priority Shift		1
High Obligation	"I wasn't able to look up my fact because I was never directed to the IMDB website. I could've looked it up on Wikipedia, but I chose not to because I thought I would have a chance to go to IMDB. Had I known that IMDB would be skipped, I would've looked up my particular fact on Wikipedia."	
Inattention		1.5
Obligation		4
Memory Lapse		1
Priority Shift		1
High Memory Lapse	"I just forgot about it."	
Inattention		2
Obligation		1
Memory Lapse		5
Priority Shift		1
High Priority Shift	"I was more concerned about finishing the questions that were on the screen."	
Inattention		1
Obligation		1
Memory lapse		1
Priority Shift		5

Note. For each of the four dimensions, one explanation is shown that earned ratings that were high on that dimension but low on all others.

obligation scores from the independent raters correlated significantly with participants' IMDb obligation scores using the scale items, $r = .69, p < .001$. Ratings of participants' spontaneous explanations and the more direct scale items therefore appeared to capture the same underlying constructs.

A multiple mediation analysis was used as outlined by Preacher and Hayes (2008) to test the effect of each potential mediator (Wikipedia awareness and IMDb obligation) while controlling for the effect of the other. The bias corrected and accelerated confidence intervals were calculated for the effects of both Wikipedia awareness and IMDb obligation. The 95% confidence interval of the indirect effect of Wikipedia awareness was -2.29 to $-.037$. That confidence interval does not include zero, and so the indirect effect (i.e., the mediating effect) of Wikipedia awareness was significant at $\alpha = .05$. In contrast, the 95% confidence interval of the indirect effect IMDb obligation was $-.77$ to $.55$ and therefore was not significant. These results provide converging evidence that an inability to identify Wikipedia as an opportunity to fulfill the goal, but not an obligation to use IMDb, caused plan participants to fail (see Figure 2).

TABLE 2.

Dimension	Condition	
	Plan	No Plan
Inattention	3.97 (1.11)	2.67 (1.37)
Obligation	2.95 (0.88)	1.92 (1.20)
Memory Lapse	1.58 (1.34)	3.17 (1.83)
Priority Shift	1.76 (1.27)	2.08 (1.36)

Note. Numbers represent the extent to which explanations for failure within each group (but only amongst those in the insufficient time condition) were rated as exhibiting causation by each of the four dimensions. Standard deviations are in parentheses.

DISCUSSION

Specific behavioral plans usually help people to attain their goals, but the present study revealed the opposite effect—plans can significantly hinder goal attainment. Participants were assigned the goal to look up a fact while browsing the internet. A plan to use a specific website (IMDb) to obtain that information, however, caused participants to overlook a useful alternative (Wikipedia). While non-planners were able to capitalize on the alternative opportunity and hence were able to succeed, participants in the plan condition proved mostly unable to do so.

Crucially, the detrimental effect of plans occurred only when an obstacle blocked the plan that participants had formed, thereby ensuring that use of an alternative opportunity would be the only way to succeed. Participants in the plan condition committed to using IMDb to look up Bill Murray's birth year. When conditions allowed for participants to visit that website, planners were significantly more successful than non-planners. However, when a time restriction precluded participants from being able to visit IMDb, plans hurt success. When success requires flexibility in terms of noticing and seizing alternative routes to attainment, plans can hinder goal attainment.

Non-planners were relatively flexible in their pursuit of the assigned goal. They were not hindered when a time constraint was introduced. Indeed, over 70% of non-planners were able to use Wikipedia when it was the only way to succeed, even though there was no prior indication that they would be visiting Wikipedia or any suggestion that Wikipedia could be useful for attaining the goal. Participants who had made plans to use IMDb, however, were much less likely to use Wikipedia, even when that emerged as the best way to reach the goal. Most of them did not capitalize on the alternative opportunity and therefore failed to succeed.

The detrimental effect of plans appears to have been driven by the fact that planners failed to identify Wikipedia as a new opportunity for attaining their goal. In contrast, there was no evidence that an obligation to follow through with their plans caused them to fail. The negative effect of planning was mediated only by a lack of awareness of Wikipedia's usefulness. This is consistent with prior work suggesting that plans cause a shift in attention away from alternative opportunities for attainment (Masicampo & Baumeister, 2011).

Plans were found to be detrimental when success required noticing (and seizing) an alternative opportunity for fulfilling a goal. This finding is consistent with prior work that has shown that plans decrease flexibility during certain stages of

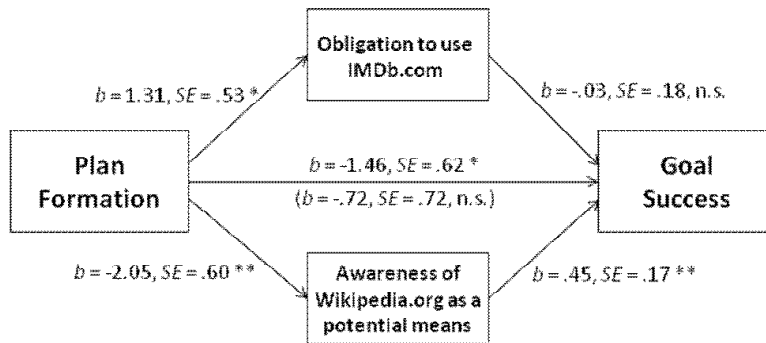


FIGURE 2. Model of IMDb obligation and Wikipedia awareness as mediators of the negative effect of planning on success. $*p < .05$, $**p < .01$.

goal pursuit but not others. More specifically, plans appear to decrease a person's ability to notice and identify opportunities for attainment but they do not appear to hinder a person's ability to select among alternative courses of action when alternative opportunities are overtly identified (Parks-Stamm et al., 2007). Indeed, prior research has found that planners are quite able to respond flexibly so long as alternative opportunities are explicitly described in advance (Jaudas & Gollwitzer, 2004). When alternative opportunities must be identified from among the ongoing stream of information, however, planners may find it difficult to adapt.

LIMITATIONS

One limitation of the present study is that the potential mediating variables were measured with post-hoc self-reports, which did not directly capture the mental processes that were occurring during pursuit of the goal. Still, the mediating variables were consistent across multiple measures. The scale items that were used in the mediation analysis correlated significantly with ratings of participants' free response explanations. Moreover, the various potential mediators were not equally endorsed. If participants' explanations were merely guesses or post-hoc excuses, then there is no clear reason why both Wikipedia awareness and IMDb obligation should not have mediated the negative effect of plans. Yet failure was mediated only by an inability to identify Wikipedia as useful and not by a sense of obligation. Thus, while the mediators relied on self-report, the data were consistent across multiple measures, and the results seem consistent with the notion that people were unaware of Wikipedia as a useful alternative.

Another limitation is that the potential mediating variables were obtained after the main task had concluded. Hence, the Wikipedia awareness measure did not mediate the effect of plans on success in the strictest sense. Still, there are trade-offs involved when measuring a mediator before versus after the dependent variable. In the present work, inclusion of the mediating variable prior to the dependent variable would have amounted to asking participants whether they thought Wikipedia was useful prior to examining whether they went on to use it. That would likely have undermined the aim of the study, which was to examine whether people could identify and use an alternative opportunity when it is not outwardly identified.

Whether the mediating variables were indeed post-hoc is also debatable. Participants did not fail at the assigned goal until the second trial in the study was over. Crucially, the end of the second trial was signaled by the very prompt that asked participants to explain why they failed at the goal (if they did indeed fail). Hence, participants did not know that they failed until the need to explain their failures arose. Thus the mediating variables were arguably simultaneous with (not occurring after) the dependent measure of failure. To describe the mediating variables as having been measured post-hoc implies some invalidity: Too much time may have passed between the two measures, thereby restricting participants' access to the mental processes that drove their behavior. But the mediating variables in the present work were collected, if anything, just a short instance after the main dependent measure. It is difficult to imagine how such an immeasurably small fraction of time could sever participants' access to the ongoing mental processes that kept them from success.

One possibility is that the observed effects were due to demand characteristics. It is possible that participants thought that they were supposed to stick with the ongoing task of answering questions about Wikipedia, and so they did not feel that it would have been acceptable to look up Bill Murray's birth year instead. Moreover, participants may have felt as though they should have adhered to the plans they had formed, hence causing planners to feel again as though they should not use Wikipedia. Against that view, the study was carefully designed to avoid such demands. The plans were not assigned. Rather, plans were formulated by participants themselves. Moreover, instructions emphasized that participants should give priority to the goal and that they should use whatever means they could to look it up regardless of their plans. Crucially, participants' own explanations for failure revealed that the effort to avoid demand characteristics was largely successful. Few participants reported that their priority was with the ongoing task rather than the assigned goal. And even though participants did indeed feel more obligated to use IMDb when forming a plan relative to when not forming a plan, participants' sense of obligation did not predict performance. Instead, it was a lack of awareness of Wikipedia as an opportunity to fulfill the goal that was most often cited by planners who failed, and it was that factor that mediated the detrimental effect of plans on goal performance.

One technical concern is that participants were not given the option of skipping through the Wikipedia questions in order to get to IMDb. Planners might have refrained from using Wikipedia to look up Bill Murray's birth year because they thought they could still use IMDb so long as they hurried to get there. However, because the task was designed to end after the last Wikipedia question, participants who adopted that strategy could not have reached IMDb. Those participants therefore could have failed not due to inattention but rather due to a peculiarity in the study design that hindered their favored strategy. Against that view, participants did not know that IMDb was the website that followed Wikipedia, and so there was little reason for participants to expect that finishing Wikipedia within the final 30-second window would allow them to reach IMDb. An analysis of participants' responses is also consistent with the view that they did not skip over the Wikipedia questions in an attempt to reach IMDb. All participants in the study answered the Wikipedia questions correctly.

Analyses of the amount of time that it took for participants to complete the second trial also support the view that participants did not attempt to reach IMDb by rushing through the Wikipedia questions. These analyses focused only on participants in the insufficient time condition. Planners were no faster at finishing the second, critical trial ($M = 9.08$ min, $SD = 1.87$) than were non-planners ($M = 9.07$, $SD = 2.22$), $t < .03$, $p > .97$. One could argue that only planners who failed at the goal should exhibit faster completion times, because those are the participants who would presumably have attempted to reach IMDb. When examining only those participants who failed, planners were still no faster at completing the second trial ($M = 9.45$, $SD = 1.80$) than were non-planners ($M = 9.18$, $SD = 2.53$), $t < .25$, $p > .80$. A final analysis compared those who failed with those who succeeded within the plan condition. Participants who failed to use Wikipedia to fulfill the target goal were no faster at completing the second trial ($M = 9.18$, $SD = 2.53$) than were participants who succeeded at using Wikipedia ($M = 8.88$, $SD = 1.65$), $t < .36$, $p > .73$. Thus, there is no evidence that planners failed because they were adopting the strategy of reaching IMDb as quickly as possible.

To be sure, the only available time data were those for the second trial as a whole, and so the above analyses do not examine time during the Wikipedia questions alone. Still, Wikipedia was only one of four websites that participants visited during the second trial (in the insufficient time condition). Therefore, one would expect that the strategy to work quickly through the Wikipedia questions would have resulted in at least a trend in the data toward faster completion times among planners and particularly among planners who failed. Yet each of the above analyses showed trends in the opposite direction, so that both planners as a whole and the subgroup of planners who failed appeared to take more (rather than less) time than others to finish the second trial. Thus, planners did not fail due to a mistaken belief that they could reach IMDb if they worked quickly enough to get there. Hence we conclude the crucial difference between planners and non-planners was that planners were unable to identify Wikipedia as a useful opportunity for fulfilling the assigned goal.

IMPLICATIONS AND FUTURE WORK

The present research builds on prior work that has shown that an inattention to alternatives occurs after a plan to attain a goal is made (Bayuk et al., 2010; Masicampo & Baumeister, 2011; Parks-Stamm et al., 2007). It examined one potential consequence of that overall pattern. The present results revealed that plans can reduce use of alternative opportunities for fulfillment, even when seizing such alternatives is the only way to attain the goal. Hence, plans do not merely cause a shift in preference toward a certain route to attainment (e.g., Bayuk et al., 2010)—they can hinder overall goal performance by causing one to overlook alternative opportunities for achievement.

Future work can examine whether plans necessarily make it difficult to identify other opportunities or whether plans can be pursued while maintaining vigilance for alternatives. Possibly some plans can be created and followed in ways that do

not cause inattention. In principle one could commit to using a specific opportunity for attainment while also committing to remaining watchful for alternatives. A similar strategy could be to equip a plan with one or more contingencies: "When x happens, I will do y ; but if y is not possible, then I will do z ." Future work could test the effectiveness of such intentions. It could also test whether reinforced intentions would exhibit the same efficiency as simpler plans. Perhaps such plans would maintain vigilance for alternatives but come with new costs, such as a bigger burden on memory. Thus, the present work may lead to future investigations into the effectiveness of plans and into the trade-off between tenacity and efficiency on the one hand and vigilance for alternatives on the other.

CONCLUDING REMARKS

Making a specific plan is not always helpful for attaining goals, due to a trade-off between openness and specificity. While plans make people more likely to act on a goal, they may also cause people to cease looking for useful alternatives. When success requires flexibility between potential routes to attainment, plans may hinder rather than help attainment.

People may not be conscious of the trade-off that comes with planning. Whereas prior work has revealed that plans can cause people to consciously devalue alternative opportunities (Bayuk et al., 2010), the present work revealed that plans may make people unaware when a new and potentially helpful opportunity is present. It seems plans can transform the way people process the information around them. When people are in active pursuit of a goal, opportunities for attainment are usually readily apparent (Balcetis & Dunning, 2010; Förster, Liberman, & Friedman, 2007; Moskowitz, 2002). But once a plan is made, people unwittingly reduce attention to goal-relevant information (Masicampo & Baumeister, 2011). The present work has emphasized the importance of recognizing and appreciating the consequences of that effect.

Of course, plans are and will remain an essential tool for anyone who wants to be successful. What the present work offers is a rule for judging when plans might best serve one's aspirations. When the path to attainment is clear, a specific behavioral plan may be quite beneficial. But when the path to attainment is littered with obstacles and the availability of alternative opportunities is uncertain, then maintaining an open mind may be more important than planning ahead.

Although the present findings have revealed one drawback of plans, they also confirm the broader benefits of plans in general. Plans simplify the future and (usually) facilitate goal pursuit by emphasizing a precise sequence of actions. This frees the often overburdened conscious mind, whose resources are limited, for other activities. By virtue of planning, a person can thus deal with new challenges while being prepared to pursue the original goal according to the plan. That the plan may cause the person occasionally to overlook a better opportunity to reach the goal may be unfortunate, but it is probably the only way that people can successfully juggle a life filled with multiple goals.

REFERENCES

- Ajzen, I. (1991). The theory of planned behavior. *Organizational Behavior and Human Decision Processes*, 50, 179-211.
- Balcetis, E., & Dunning, D. (2010). Wishful seeing: More desired objects are seen as closer. *Psychological Science*, 21, 147-152.
- Bayuk, J. B., Janiszewski, C., & Leboeuf, R. A. (2010). Letting good opportunities pass us by: Examining the role of mind-set during goal pursuit. *Journal of Consumer Research*, 37, 570-583.
- Brandstätter, V., Lengfelder, A., & Gollwitzer, P. M. (2001). Implementation intentions and efficient action initiation. *Journal of Personality and Social Psychology*, 81(5), 946-960.
- Förster, J., Liberman, N., & Friedman, R. (2007). Seven principles of goal activation: A systematic approach to distinguishing goal priming from priming of non-goal constructs. *Personality and Social Psychology Review*, 11, 211-233.
- Gollwitzer, P. M. (1999). Implementation intentions: Strong effects of simple plans. *American Psychologist*, 54(7), 493-503.
- Gollwitzer, P. M., & Brandstätter, V. (1997). Implementation intentions and effective goal pursuit. *Journal of Personality and Social Psychology*, 73(1), 186-199.
- Gollwitzer, P. M., Parks-Stamm, E. J., Jaudas, A., & Sheeran, P. (2008). Flexible tenacity in goal pursuit. In J. Shah & W. Gardner (Eds.), *Handbook of motivation science* (pp. 325-341). New York: Guilford.
- Häfner, S. (2000). *Machen Vorsätze rigide? Eine experimentelle Studie zum Erkennen und Nutzen günstiger Handlungsgelegenheiten* [Do implementation intentions make a person rigid?: An experimental study on seizing good opportunities to act]. Unpublished master's thesis, Universität Konstanz, Konstanz, Germany.
- Jaudas, A., & Gollwitzer, P. M. (2004, April). Führen Vorsätze zu Rigidität im Zielstreben? [Do implementation intentions evoke rigidity in goal striving?]. In A. Achtziger & P. M. Gollwitzer (Chairs), *Recent developments in research on implementation intentions*. Symposium conducted at the 46th Meeting of Experimental Psychologists, Giessen, Germany.
- Masicampo, E. J., & Baumeister, R. F. (2011). Consider it done!: Plan making can eliminate the cognitive effects of unfulfilled goals. *Journal of Personality and Social Psychology*, 101, 667-683.
- Moskowitz, G. B. (2002). Preconscious effects of temporary goals on attention. *Journal of Experimental Social Psychology*, 38(4), 397-404.
- Parks-Stamm, E. J., Gollwitzer, P. M., & Oettingen, G. (2007). Action control by implementation intentions: Effective cue detection and efficient response initiation. *Social Cognition*, 25, 248-266.
- Preacher, K. J., & Hayes, A. F. (2008). Asymptotic and resampling strategies for assessing and comparing indirect effects in multiple mediator models. *Behavior Research Methods*, 40, 879-891.
- Shah, J. Y., Friedman, R., & Kruglanski, A. W. (2002). Forgetting all else: On the antecedents and consequences of goal shielding. *Journal of Personality and Social Psychology*, 83, 1261-1280.
- Webb, T. L., & Sheeran, P. (2003). Can implementation intentions help to overcome ego-depletion? *Journal of Experimental Social Psychology*, 39, 279-286.
- Webb, T. L., & Sheeran, P. (2007). How do implementation intentions promote goal attainment? A test of component processes. *Journal of Experimental Social Psychology*, 43, 295-302.