When Goals Get in the Way:
The Hidden Downsides of Goal Setting

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Abstract

Decades of research have explored the benefits of goal setting, but only recently have researchers begun to investigate the potential downsides of goals. In this paper, we expand upon this existing work and propose two further ways in which goals can be harmful. First, goals can create an overly strong commitment to the focal option, which causes people to reject superior alternatives that arise during goal pursuit. Second, goals narrow our attention and can cause people to become oblivious to the existence of other opportunities altogether. We find support for these two hypotheses across six studies, using both correlational and experimental methods, for both third- and first-party decisions, and involving both hypothetical and consequential choices. Finally, we explore the boundaries of these effects, discuss implications for the optimal use of goals, and suggest areas for future research.

INTRODUCTION

On May 25th, 1961, President John F. Kennedy convened a special joint session of the U.S. Congress, and announced an ambitious goal: America would put a man on the moon before the end of the decade. And indeed, only eight years later, Apollo 11 delivered American astronauts Neil Armstrong and Buzz Aldrin safely to the moon's surface. Looking back, many have credited Kennedy's ambitious and specific goal with driving the country's achievement. And now, nearly fifty years and thousands of studies later, the benefits of goal setting have become firmly entrenched in both popular culture and among motivation researchers (e.g., Locke and Latham 1990; Mesmer-Magnus and Viswesvaran 2007).

But while the benefits of goals have received a tremendous amount of attention, significantly less work has explored the potential downsides of goal setting. One area that researchers have examined is whether goals increase unethical behavior, such as cheating (Schweitzer, Ordóñez, and Douma 2004; Jensen 2003). Additionally, in the past few years a number of studies have explored the risks that may accompany setting a precise plan (or "implementation intention") for achieving one's goals (Bayuk, Janiszewski, and Lebouef 2010; Townsend and Liu 2012).

However, overall there still exists only a small body of work examining the downsides of goal setting. In this paper, we report results from six studies that delineate two further ways in which goals can harm those who set them. First, we demonstrate that goals can serve as strong commitment devices which reduce people's willingness to switch to better alternatives. Second, we show that goals narrow people's attention and can lead them to be unaware of the existence of other options altogether.

These results significantly expand upon the initial work that has been done on the downsides of goals, and help strengthen a growing literature that seeks to counter-balance the decades of nearly unopposed support for the efficacy of goal setting. While goals remain a powerful tool for improving motivation and performance, results such as these indicate that goals are not a cure-all solution, especially in situations where an ability to recognize and seize new opportunities is needed.

The rest of this paper is organized as follows. In the next section, we review a broad swath of the goals literature, beginning with a brief overview of the benefits of goals and progressing to the recent work on goals' downsides. Expanding upon this work, we propose two further ways in which goals can prove harmful. Next, we discuss the methods and results of six studies that we conducted to test these proposals. Finally, we conclude with a discussion of the implications of these results, as well as limitations and areas for future research.

THEORETICAL BACKGROUND

Goals: Benefits and Optimal Use

Beginning in the 1960s and progressing through today, decades of research have helped delineate the benefits of goal setting. Over the years, this research has shown that goals can improve performance in both laboratory tasks and field studies; with dependent variables including quantity, quality, time spent, cost measures, and more; across time spans ranging from 1 minute to 25 years; with goals that are assigned or self-set; and across both individual and group performance (e.g. Becker 1978; Latham et al. 1978; O'Leary-Kelly, Martocchio, and Frink 1994). Put simply, meta-analyses suggest that "goal setting

theory is among the most valid and practical theories… in organizational psychology" (Locke and Latham 2002).

And beyond establishing goals' broad motivational value, researchers have also explored the specific types of goals that are the most effective. Overall, researchers have found that difficult and specific goals result in higher levels of persistence, effort, and performance than goals which are easier or less precise (e.g. Locke & Latham 1990). Furthermore, researchers have shown that "learning" goals, which encourage people to devise a certain number of strategies for accomplishing a task, can be more effective than outcome-related goals, especially when a task is unfamiliar (Seijts and Latham 2001, 2005; Brown and Latham 2002).

In sum, researchers over the past six decades have explored the benefits of goal setting in great detail. Frequently taught in management- and business courses, these findings have subsequently moved out of the lab and have motivated the extensive goal-setting strategies currently used by companies around the world (Brown 2011). Only recently, however, have researchers begun to systematically explore the potential risks of this now-ubiquitous behavior.

Cracks in the Armor: Prior Work on the Downsides of Goal Setting

Unethical Behavior

One of the first areas in which researchers recognized a potential downside to goal setting was in the domain of unethical behavior. For decades, scandals in the business world had hinted at the potential risks posed by setting ambitious goals. For example, in the early 1970s, Ford Motor Company began developing a new car named the "Pinto," and set a challenging goal for the Pinto to be designed, produced, and launched to market in two years

rather than the typical four. In attempting to meet this goal, Ford employees subsequently signed off on the car's release despite being aware of major issues regarding its safety during rear-end collisions. Ultimately, this decision had serious repercussions for Ford, leading to nearly 50 lawsuits and over $100 million in awarded damages.

Perhaps motivated by prominent examples such as this, researchers in the early 2000s began to explore more systematically whether goals increased people's propensity for unethical behavior. The primary study that has examined this question was conducted by Schweitzer, Ordóñez, and Douma (2004). In this study, participants were asked to create words using a pool of letters, with their payment based on self-reported performance (creating an opportunity to cheat). Results then showed that people who had been assigned a specific and challenging goal for their performance cheated significantly more than those who had not been given a well-defined goal. Furthermore, the authors found that goals increased cheating even when there was no reward for meeting the goal, suggesting that these effects were not simply driven by monetary incentives. And in the time since this initial research, several other studies have continued to suggest a link between goals and unethical behavior (e.g. Barsky 2008; Ordóñez et al. 2009).

Together, these studies produced some of the first experimental evidence demonstrating that goals can have significant downsides and unintended consequences. However, since these studies and anecdotal examples all involved the use of a certain *type* of goal—namely, those that were difficult and specific—this research does not address whether goals that do not have these same qualities will still produce negative effects.

Additionally, this research connecting goals with unethical behavior does not directly demonstrate that goals are detrimental at the individual level, since the cheating behaviors observed in these laboratory studies can actually be seen as optimal given

participants' belief that their behavior was anonymous (and thus unpunishable). Therefore, this line of research falls short of addressing whether setting any type of goal could harm the person who set it.

In the next section, we review another area—implementation intentions—in which a particular approach to goal setting has been shown to have unintended consequences.

Implementation Intentions

There is a famous adage: "The road to hell is paved with good intentions." Under this view, while people may frequently have the intention to undertake positive actions, we often fail to live up to this promise. Recognizing this common discrepancy between intention and behavior, researchers in the 1990s began to explore how people could implement their good intentions more effectively (Gollwitzer and Moskowitz 1996). The primary product of this stream of research was Gollwitzer's theory of implementation intentions (Gollwitzer 1999), which suggested that specifying a precise plan for achieving one's goal could help bring our actual behavior better in line with our aim, since a pre-defined plan would enable people to quickly recognize goal-related opportunities and execute their desired response.

In the decade after it was first proposed, Gollwitzer's theory received strong empirical support, with numerous studies demonstrating a substantial positive effect of implementation intentions on goal achievement (Gollwitzer and Sheeran 2006). However, over the past several years researchers have begun to push back against the benefits of implementation intentions. For example, Bayuk, Janiszewski and Leboeuf (2010) showed that people who had created an implementation intention to achieve the goal of saving money were actually *more* likely to make an impulse purchase—which works against this goal—than those without implementation intentions. This occurred because people who set

implementation intentions then became highly focused on the specific plans they had created; since these plans usually did not explicitly mention avoiding impulse purchases, people became less able to make the best choice in this unplanned-for situation.

Similar results have been found in a number of other studies. For example, Masicampo and Baumeister (2012) also found that implementation intentions can impair people's ability to capitalize on out-of-plan options, especially when under time pressure. Meanwhile, Townsend and Liu (2012) suggest that implementation intentions can cause distress when they remind people of the distance between their current state and their aspiration, which then undermines people's motivation compared to if they had not created an implementation intention. Additional studies identify yet more boundary conditions for the utility of implementation intentions (e.g. ineffective when extended to multiple goals, Dalton and Spiller 2012; "obstacle-focused" plans hinder performance, Stornelli 2015).

Taken together, these studies on implementation intentions reveal another area in which researchers are pushing back against the purely positive view of goal setting. However, just as with the research on unethical behavior (which has focused on difficult and specific goals), this implementation intention research focuses on a specific goal-setting strategy rather than seeking to critique goal setting more broadly. Thus, both of these existing streams of research focus on only limited areas in which goals may be detrimental. In the following section, we introduce two ways in which goal setting can be harmful at its broadest level.

The Present Research: Two Hypotheses

Goals as Commitment Devices

The first hypothesis we test in this research is that goals can serve as commitment devices which lead people to reject the opportunity to switch to better alternatives ($\mathbf{H_1}$).

While this prediction has not been directly tested by other researchers, a number of streams of existing research support this hypothesis.

Human beings possess many disparate and even competing goals, and the intensity and activation of these goals fluctuates over time (Lewin 1935). Given this multiplicity of objectives, our ability to accomplish any one of them relies on our capacity to focus on the task at hand while putting other goals temporarily out of mind. In turn, humans have developed the ability to "shield" a focal goal from other competing goals.

This concept of goal shielding was first introduced by Shah, Friedman, and Kruglanski (2002), who demonstrated this shielding effect in a number of studies. For example, in one study participants were asked to list either a goal to which they were highly committed or one to which they had a low commitment. When participants were then given the chance to list any number of other goals that they wanted to attain, results showed that people who had first listed a high-commitment goal went on to generate fewer alternative goals, suggesting that this focal goal was shielding or crowding out other alternatives. Additional results demonstrated that this shielding occurred automatically and unconsciously. Together, these results show how the activation of a goal engages a shielding effect that increases goal commitment and reduces openness to alternatives.

Beyond this shielding effect, researchers have also demonstrated that our mind engages in an automatic devaluation of non-goal-related items in order to protect our focal goal. For example, in Brendl, Markman, and Messner (2003), smokers were induced to have either a strong or weak smoking goal, and were then given the option to purchase tickets to a raffle for which the prize was either cash or cigarettes. Based on the number of raffle tickets that participants bought, results showed that while a strong smoking goal did not explicitly *increase* participants' interest in a goal-consistent item (i.e. raffle tickets when the

prize was cigarettes), this focal goal did lead to a significant *devaluation* of the non-goal-consistent item (i.e. raffle tickets when the prize was cash).

Ultimately, these streams of research collectively suggest that goal setting can lead to both a crowding-out and a devaluation of other alternatives. From these findings, we derive our prediction that goals may generate an overly strong commitment to the focal option, leading people to subsequently reject other alternatives even if they ought to accept them.

Goals as Directors of Attention

The second hypothesis we test in these studies is that goals strongly direct our attention, and in the process, may cause us to fail to notice or sufficiently attend to the existence of other possibilities (**H_2**). As with our prediction regarding goals and over-commitment (H_1), this hypothesis that goals can blind us to better alternatives has not been explicitly tested, but is supported by research in a number of areas.

There is strong evidence to suggest that goals marshal our attention and impact the way we perceive the world around us. One way in which goals direct attention is through their impact on arousal, which describes the extent to which a person is physiologically awake and alert (Hebb 1955). Since our ability to attend to and process information is also influenced by our level of arousal (Kahneman 1973), goals may direct our attention by putting us in an aroused state. Indeed, Gellatly and Meyer (1992) found that participants' self-reported and objective arousal both increased during goal pursuit. Furthermore, the authors found that this increased arousal mediated the improved performance that accompanied goal setting, demonstrating how goals focus our attention in order to improve our performance on the task at hand.

Beyond goals mediating attention through arousal, a number of other studies have looked directly at the impact of goals on attention, and have found similar results. For example, research shows that during goal pursuit, people are more responsive to goal-related stimuli than they otherwise would be (Klinger, 1975). Furthermore, research shows that goals are powerful enough to direct our attention and alter behavior even when the goal has not been consciously activated. For example, in one study participants who were unconsciously primed with high-performance words (e.g. win, strive, attain) performed better on a word search puzzle than participants who were primed with neutral words, despite participants reporting no conscious awareness of having a goal (Bargh et al. 2001).

Together, this existing research suggests that goals direct our attention and, in turn, may reduce the saliency of anything which falls outside of our goal focus. Indeed, one study supports this idea most directly. While researching workplace performance, Staw and Boettger (1990) found that individuals who were assigned a goal of improving a brochure's grammar then failed to also improve its content, despite some obvious deficiencies. Meanwhile, individuals who did not have a specific grammar-related goal noticed and corrected these errors in content. Thus, this study provides some initial evidence for the notion that goals can direct people's attention and subsequently cause them to ignore opportunities that are outside of the scope of their specific goal but which actually better serve their broader aim (e.g. optimizing the brochure on all dimensions).

In turn, these findings support our prediction that goals may prevent people from fully considering all of their available options, and thus may result in sub-optimal behaviors. Stated differently, this prediction suggests that goals may impair people's ability to be fully cognizant of the opportunity costs of their actions. Given that prior work has also shown that opportunity cost consideration is not always high, but rather is moderated by people's

level of attention (Frederick et al. 2009; Spiller 2011), research in the domain of opportunity costs further supports our prediction that the narrowing of attention caused by goal setting may limit people's ability to optimally consider all available alternatives.

THE PRESENT RESEARCH

In the following sections, we describe the methods and results of six studies used to test the two hypotheses described above. Study 1 provides correlational support for both hypotheses. Study 2A enables causal inferences through an experimental design, and provides support for H_1. Study 2B replicates Study 2A and rules out an alternative account. Next, in Study 3A we provide support for H_2 and extend our results into the domain of consequential choice. Study 3B strengthens the effect found in Study 3A by increasing goal commitment. Finally, Study 3C explores boundary conditions of these effects.

STUDY 1

In Study 1, we sought to obtain initial, correlational evidence for both of our hypotheses. Specifically, we tested whether there is a negative correlation between goal setting and people's willingness to capitalize on an attractive alternative (H_1), as well as whether people who set goals are less likely to notice other opportunities altogether (H_2).

Methods

Participants for this study were 99 individuals recruited through Amazon's Mechanical Turk service ("mTurk;" 51.5% male, 19-70 years of age, M = 35.5). Participants were asked to imagine that, one day, they were working on mTurk and had completed three tasks so far when they received a phone call inviting them to a last-minute gathering at a close friend's house. Since mTurk tasks typically take only a few minutes, this number (3

tasks) was chosen such that people who set earnings goals for their work on mTurk would almost certainly still be short of their goal when they received this hypothetical call.

After learning about this situation, participants were asked how likely they were to stop working and attend the gathering. Next, participants were asked to specify the extent to which they had set an earnings goal for their work on mTurk that day. Lastly, participants answered several questions regarding the extent to which they think about (in general) the other things that they could do with their time when deciding whether to continue working.

Results and Discussion

We predicted that people who set goals would be less likely than people who did not set goals to take advantage of attractive alternative options. The results of this study supported our prediction; the more that people set goals for their mTurk earnings, the less likely they were to attend their friend's party (r = -.383, p < .001). Furthermore, while this relationship could be confounded by income levels (i.e. people with lower income may be both more likely to set earnings goals and also less likely to stop working and attend a party), the effect remained significant even after controlling for income (B = -.324, p = .014).

In addition to making people more likely to turn down alternatives when prompted, goal setting was also associated with a reduced tendency to consider other opportunities on one's own. Specifically, people's tendency to consider opportunity costs was captured by their response to the statement, "In general, I think about what else I can do with my time when deciding whether to work more." Controlling again for income, results showed a significant negative relationship between people's self-reported tendency to set goals and their tendency to consider other opportunities (B = -.21, p = .037).

Overall, these results provide initial support for both of our hypotheses. However, this study is limited by its correlational nature as well as by the fact that, although it may be reasonable to conclude that someone would be better off by attending a gathering with close friends rather than earning a few additional dollars on mTurk, this option does not objectively *dominate* continuing to work. Thus, it is difficult to conclude that having a goal actually pushed people towards a choice that made them worse off.

STUDY 2A

In study 2A, we sought to establish a more direct and causal relationship between goal setting and sub-optimal decision making by randomly assigning participants to either a goal or no goal condition, and by more clearly showing that goals push people towards an option that brings them less utility.

Methods

Participants for this study were 199 individuals recruited through mTurk (54.8% male, 21-76 years of age, M = 35.8). Participants were presented with a vignette about a man named Charles, whose favorite sport was tennis. Participants were then told that, one day, Charles was not able to find a tennis partner, and so decided to play basketball instead. Participants in the goal condition then read that Charles set a goal to make 50 basketball shots, while participants in the no goal condition were not told about a goal. Next, participants in both conditions were told that after about 30 minutes, during which time Charles had made 42 shots, his friend David arrived and invited Charles to play tennis instead.

Participants were then asked how conflicted they thought Charles would feel about the choice to either continue playing basketball or to switch to tennis. Participants were

also asked how likely they thought it was that Charles would switch activities, as well as how happy they thought Charles would then feel while doing whichever activity he chose.

Results and Discussion

Our first hypothesis (H_1) predicts that goals increase people's commitment to the goal-related task and reduce their willingness to capitalize on attractive alternatives. Consistent with this increased resistance to abandon a task once a goal has been set for it, participants in the goal condition predicted that Charles would feel significantly more conflicted about the decision to switch activities (M = 3.39) than participants in the no goal condition (M = 2.46), $t(197) = 3.84$, $p < .001$.

Unsurprisingly, results then showed a strong, negative relationship between this choice conflict and Charles' likelihood of switching ($r = -.72$, $p < .001$). In turn, participants in the goal condition believed it was significantly less likely that Charles would stop playing basketball in order to switch to tennis, $M_{goal} = 6.56$ vs. $M_{no\text{-}goal} = 7.15$; $t(197)=1.98$, $p=.049$.

Consistent with H_1, these results demonstrate how goals can make people resistant to selecting alternative options, even when these options can be seen as dominating the current task. Indeed, even though participants were explicitly told that Charles prefers to play tennis over any other sport, those who were told that Charles set a basketball-related goal were then significantly less likely to think that he would take advantage of the chance to play his favorite sport.

One counter-argument to this result would be that achieving his basketball goal brings Charles a utility of its own, while quitting the goal before achieving it could create disutility. Therefore, even though Charles may normally prefer tennis, the presence of the basketball-related goal may cause Charles to actually feel happier playing basketball than

tennis. In turn, Charles' greater likelihood to eschew tennis in favor of basketball when a goal is present may not necessarily be sub-optimal.

However, the results of the happiness measures in this study do not support this counter-argument. Rather, they support our hypothesis that setting a goal pushes people to persist with a task even if it will not bring them the most utility. Indeed, if setting a basketball-related goal then made continuing to play basketball the optimal choice, people in the goal condition should have predicted that Charles would be happier if he continued playing basketball than if he switched to tennis. However, results showed that people in the goal condition who believe that Charles will stick with basketball predict that he will be less happy (M = 4.94) than people who predict he will switch to tennis (M = 6.20), $t(78) = 4.01$, $p < .001$. Thus, even once a basketball-related goal has been set, people still predict that Charles would be happier playing tennis. And yet, having a goal makes Charles more likely to pursue the non-preferred task.

Furthermore, setting a goal seems to create a situation in which Charles is worse off regardless of what he decides to do. As described above, setting a goal makes Charles more likely to continue playing basketball, despite this being a less preferred option. But even if Charles chooses tennis, setting a goal still leads to reduced utility compared to if Charles did not set a goal. This occurs because switching to tennis is now more painful and conflicting since it involves abandoning a goal. In turn, even among people who predict that Charles will switch, those in the goal condition believe he will be less happy playing tennis than those in the no-goal condition (M_{goal}= 5.91 vs. $M_{no\text{-}goal}$ = 6.27; $t(138) = 2.14$, $p = .034$).

All in all, these results demonstrate that setting a goal leads to an increased commitment to the focal task and greater conflict when presented with an alternative. This conflict then leads to a greater likelihood of persisting with the original task, even though

the alternative would generate more utility. Furthermore, even if the opportunity is capitalized on, people still suffer due to the pain that accompanies abandoning a goal. Thus, setting a goal makes people more likely to turn down alternatives that they should accept, and also reduces their utility even when they correctly choose the alternative option.

STUDY 2B

While Study 2A provided strong support for H_1, there could be a concern that the ordering of the questions created a demand effect. Specifically, since people were asked about how conflicted Charles would feel before they were asked how likely it was that he would switch activities, participants may have inferred that we were suggesting that Charles would not switch because he felt conflicted. Thus, this demand effect could have influenced our findings. Study 2B was conducted to rule out this alternative explanation.

Methods

Participants for this study were 191 individuals recruited through mTurk (50.3% female, 20-68 years of age, M = 36.7). These participants went through a procedure that was identical to that of Study 2A aside from the ordering of the questions. In this study, the question regarding conflict was now positioned *after* the questions regarding Charles' likelihood of switching and his happiness with the activity he chose.

Results and Discussion

Replicating the results of Study 2A, we found that people believed Charles would be less likely to switch to tennis when he had a goal (M = 6.81) than when he did not (M = 7.30), $t(189) = 1.87$, $p = .06$. Thus, this result does not appear to have been driven by a demand effect of asking participants to consider Charles' choice conflict.

Furthermore, this study also found the same pattern of happiness results as found in Study 2A. Specifically, despite having a basketball goal, participants in the goal condition still predict that Charles will be happier if he switches to tennis (M = 5.99) than if he continues playing basketball (M = 4.75), $t(88) = 3.29$, $p = .001$. Thus, Charles' increased likelihood of continuing with basketball cannot be explained by the idea that this maximizes his utility once the goal has been set.

And again as in Study 2A, participants in the goal condition also predict that Charles will be less happy even if he chooses to switch to tennis compared to participants in the no goal condition ($M_{goal} = 5.99$ vs. $M_{no\text{-}goal} = 6.33$; $t(141) = 2.20$, $p = .03$). Thus, setting a goal either prompts Charles to continue with a less enjoyable activity, or harms his enjoyment of the preferred activity.

Overall, these results consistently replicate the effects found in Study 2A, and argue against a demand effect explanation. Together, the results of studies 2A and 2B thus provide strong support for the hypothesis that goals can reduce people's willingness to capitalize on alternatives, even when doing so would make them better off.

STUDY 3A

So far, we have generated preliminary, correlational support for both of our hypotheses (Study 1) and found further, experimental support for H_1 (studies 2A and 2B). In this study, we sought to obtain further evidence for our second hypothesis, namely that goals narrow our attention and cause us to become oblivious or inattentive to the existence of other options altogether.

In addition to testing H_2, this study aimed to extend our results in two additional ways. Specifically, studies 2A and 2B were limited by the fact that they involved peoples'

predictions about a hypothetical scenario involving a third-party. In Study 3A, we sought to test whether goals would cause people to continue making sub-optimal decisions even when making consequential choices and when deciding for themselves.

Methods

Participants for this study were 1103 individuals recruited through mTurk (51.7% male, 18-82 years old, M = 37.1). Participants were told that they would have two minutes to solve anagrams, and that they would be paid $0.01 for each anagram that they solved. After reading these instructions, participants in the goal condition were asked to set a goal for the number of anagrams they would aim to solve, while participants in the no goal condition were not asked to set a goal. In a third, "elaboration" condition, participants were asked to briefly write about how they would go about solving the anagrams. This manipulation was designed to increase the attention people paid to the anagram task without asking them to set a goal for their performance. In this way, this condition allowed us to control for a potentially confounding difference between the goal and no goal conditions, namely that participants in the goal condition not only set an anagram-related goal, but also simply devoted more effort and attention to thinking about the anagram task.

After these condition-specific manipulations, all participants learned that they could either continue directly to the anagram task (by clicking a button at the top of the page) or they could read about an alternative task by scrolling down the page and hovering their mouse over a box, which would cause the description of the alternative task to appear.

If participants chose to reveal the alternative task, they learned that it consisted of determining which word in a pair contained fewer letters, and they also learned that it paid

twice as much per correct answer as the anagram task. Thus, participants who chose not to learn about both of the available options missed out on a valuable alternative.

After participants chose their task and completed it, they were then presented with descriptions of both task options side-by-side (with no effort needed to reveal them) and asked to indicate which task they considered to be more appealing overall.

Results and Discussion

We began by assessing the alternative explanation tested by the "elaboration" condition. Importantly, results showed no significant differences between the elaboration condition and the no-goal condition (all p's > .45). Given these results, we collapsed the no goal condition and the elaboration condition into a single, no goal condition and then compared the behavior of this group to those in the goal condition.

Our main prediction for this study, consistent with H_2, was that people who had set a goal for the anagram task would be less likely to read about the alternative task (i.e. to "information search") compared with people who did not have an anagram-related goal. The results supported this prediction. In particular, people who did not have a goal were significantly more likely to information search (62%) than people who did have a goal (55%), $\chi^2 = 4.48$, $p = .034$.

Beyond information search, we also predicted that people in the goal condition would be more likely to select the anagram task over the alternative. This prediction is consistent with H_1, which suggests that goals increase people's commitment and reduce their willingness to select other options. The results of this study supported this prediction as well. Specifically, people who had a goal were more likely to choose the anagram task (67%) than people who did not have a goal (60%), $\chi^2 = 4.78$, $p = .029$.

Overall, these results provide support for our hypothesis that goals direct people's attention and make them less likely to seek out information about potentially valuable alternatives. In turn, this failure to information search can lead to sub-optimal decisions, which can be seen using both objective and subjective measures. Objectively, participants who information searched earned nearly twice as much (M = $0.24) as participants who did not read about the alternative task (M = $0.14), $t(1088) = 18.03$, $p < .001$.

Beyond these objective differences in earnings, we can also see that people who information searched were more likely to be satisfied with the choice they ultimately made. At the end of this study, participants were shown both options and asked to indicate which one they found more appealing overall. By comparing this preference with people's original task choice, we found that people who did not information search were significantly more likely to regret their decision ($M_{no\text{-}search}$ = 35%, M_{search} = 19%), $\chi^2 = 29.2$, $p < .001$.

Together then, these results suggest that goals narrow people's attention and reduce their consideration of other opportunities, which can be highly costly if these options end up being more valuable than the one for which an initial goal simply happened to be set.

STUDY 3B

Study 3A provided strong evidence in support of H_2 by showing that people who set goals are less likely to seek out information about other options. Study 3A also supported H_1 by demonstrating that goal-setters were more likely to choose the focal task rather than an attractive alternative.

Nevertheless, the effect sizes demonstrated in Study 3A were fairly small, and likely did not reflect the full impact that goals may often have in the real world. The reason for this is that asking people to set an anagram goal likely does not create a goal to which they

are particularly committed. Thus, the results demonstrated in Study 3A are actually quite impressive—they demonstrate the impact that goals have on our attention and behavior even when the goal is not particularly important to us. In Study 3B, we sought to test how the strength of these effects may increase when goal commitment is intensified.

Methods

Participants for this study were 303 individuals recruited through mTurk (18-74 years of age, M = 37.5, 56.1% female). The procedure for this study was very similar to that of Study 3A. However, in order to create a greater level of commitment to the anagram task, participants in this study were given a chance to solve an anagram before they learned about the presence of the alternative task. Since participants in the goal condition were also reminded about the goal they had set, getting this first anagram correct helped them feel a sense of progress towards their goal. We utilized this type of manipulation because prior research has shown that making progress towards a goal can increase people's motivation to continue goal pursuit (e.g. Soman and Shi 2003; Kim, Novemsky, and Dhar 2014). After solving this first anagram, participants were then given the opportunity to learn about the alternative task, and the remainder of the study unfolded as described in Study 3A.

Results & Discussion

Since the purpose of this study was to see if our effects would strengthen when people had made progress on the anagram task—and thus had become more committed to it—we began by excluding from our analysis those participants in either condition who failed to correctly solve the initial anagram. After removing these 43 participants, we repeated our analyses from Study 3A, and replicated our prior results. First, we found that participants in the goal condition were less likely to information search than those in the

no-goal condition (63% vs. 74%), $\chi^2 = 3.38$, $p = .066$. This result thus supports H_2, which suggests that goals can reduce people's tendency to attend to other opportunities.

Next, we found that participants in the goal condition were more likely to choose the anagram task (72%) than participants in the no-goal condition (56%), $\chi^2 = 7.10$, $p = .008$. Furthermore, this difference in task choice remained significant even when looking only among people who had chosen to read about the alternative task (56% vs. 40%, $\chi^2 = 4.68$, $p = .031$), demonstrating how goals can make people less likely to capitalize on valuable alternatives even when they are explicitly aware of them (H_1).

Beyond replicating prior findings, this study also showed that, as we predicted, increasing goal commitment led to a strengthening of the effects described by H_1 and H_2. Specifically, the effect sizes found in Study 3B were between ~150–300% as large as those in Study 3A (see Figure 1 in Appendix for a graphical comparison of these effect sizes).

Finally, as in Study 3A we can see that these effects of goal setting ultimately result in sub-optimal behavior. As described above, participants in the goal condition were less likely to information search and more likely to choose the anagram task. These behaviors then led to sub-optimal earnings, since failing to information search ($0.38 vs. 0.30, $t(258) = 4.50$, $p < .001$) and choosing the anagram task ($0.43 vs. 0.32, $t(155) = 5.94$, $p < .001$) both caused people to earn significantly less. Furthermore, beyond money, people who searched were less likely to regret their task choice (19% vs. 32%; $\chi^2 = 6.26$, $p = .012$), suggesting that goal setting led to behavior which was both objectively and subjectively sub-optimal.

STUDY 3C

While the results of studies 3A and 3B supported both H_1 and H_2, Study 3C was designed to test for boundary conditions of these effects. Specifically, this study investigated

whether the effects would diminish when the goal was made less specific or was re-framed to emphasize a higher-order objective rather than a specific means of achievement.

Methods

594 mTurkers (59% female, 18-62 years of age, M = 37.8) completed this study, which introduced two new conditions to the design of Study 3B. In the "do your best" condition, before participants solved their first anagram they were given only the less-specific goal to "do your best to solve as many anagrams as you can." In the "higher-order goal" condition, the goal was re-framed in terms of the higher-order objective, i.e. earning money. Thus, participants were instructed to "Please set a goal for the amount of money you aim to earn solving anagrams." Meanwhile the (anagram-) goal ("Please set a goal for the number of anagrams you aim to solve") and the no-goal conditions were the same as in Study 3B, and the rest of the procedure was also identical to Study 3B.

Results and Discussion

First, the results from the anagram-goal and no-goal conditions replicated the results obtained in studies 3A and 3B. Specifically, participants who set an anagram goal were significantly less likely to read about the alternative task (52% vs. 63%, $\chi^2 = 4.11$, $p = .04$) and significantly more likely to choose the anagram task even if they did read about the alternative (62% vs. 39%, $\chi^2 = 8.58$, $p = .003$) as compared to those in the no-goal condition.

Next, we analyzed information search behavior among participants in the two new conditions, and found that while participants in both the do your best condition (59%) and the higher-order goal condition (56%) information searched directionally less often than participants who had no goal whatsoever (63%), these differences were no longer significant (p's = .19, .18, respectively). Thus, this study suggests that reducing the

specificity of a goal or re-framing it to focus on a higher-order objective can, to some extent, ameliorate the harmful narrowing of attention that goals can create.

But while these changes in the structure of the goal reduced the negative effect of goals on our attention, the impact of goals on our commitment to the focal option remained significant. Specifically, looking only at participants who did read about the alternative task, participants in both the do your best condition (58%, $\chi^2 = 6.43$, $p = .01$) and the higher-order goal condition (57%, $\chi^2 = 5.45$, $p = .02$) were significantly more likely to choose the anagram task than those in the no goal condition (39%). Thus, even setting goals which are less specific or are better framed to capture a person's overall objective can still generate harmful over-commitment to the focal option.

GENERAL DISCUSSION

For decades, researchers have extoled the power of goal setting, and have held up goals as a nearly sure-fire tool for increasing motivation and performance. In this paper, we demonstrated two ways in which goals could hurt those who set them. First, we showed that goals caused people to become overly-committed to the focal option, leading them to reject opportunities to switch to a superior alternative. Second, we showed that goals narrow people's attention, such that they sometimes fail to consider other available opportunities whatsoever.

Summary of Results

In Study 1, we provided initial, correlational support for both of our hypotheses. We showed that mTurkers who reported setting earnings goals were more likely to reject an attractive opportunity that arose during goal pursuit (H_1), and also that people who set goals reported being less likely to consider other opportunities in the first place (H_2).

Study 2A provided further support for H_1. Participants predicted that someone who had first set a goal related to a less-preferred option (basketball) would then be less likely to capitalize on the opportunity to switch to their preferred option (tennis). Furthermore, we showed that setting this goal was harmful since it either pushed participants to persist with the less enjoyable activity, or harmed their enjoyment of the preferred activity even if they decided to switch. These results were then replicated in Study 2B, which also ruled out a potential demand effect explanation.

Next, Study 3A provided support for H_2, finding that participants who set a goal for an initial anagram task were then less likely to seek out information about an alternative, more lucrative task, and in turn earned less money and were more likely to regret their decision. Thus, by reducing people's tendency to consider other alternatives, goal setting led to sub-optimal decisions.

These results were then replicated and strengthened in Study 3B, which used a goal-progress manipulation to increase goal commitment. Finally, in Study 3C we showed that the negative effect of goals on attention can be somewhat reduced by making the goal less-specific or by framing it to focus on a higher-order objective, but that even with these changes the harmful over-commitment caused by goal-setting remains highly significant.

Implications

Fundamentally, this research reveals the importance of carefully considering how and when to utilize goals, as opposed to believing that goal setting will always be beneficial. Our results suggest that one way in which goals can be harmful is by narrowing our focus and causing us to fail to sufficiently attend to other available opportunities. In turn, these results suggest that individuals and organizations could benefit from incorporating a

greater consideration of other opportunities directly into their goal-setting and review process. For example, rather than focusing solely on tracking *progress* towards whatever goals have already been set, companies should create review processes that assess whether the goals themselves ought to be changed, as well as analyzing whether the strategies that are being used to pursue the goals still reflect the best available approaches.

Furthermore, the results of this paper suggest that the specific way in which a goal is framed can have a significant impact on whether people consider other opportunities. Thus, our results suggest that managers and executives—who often set the goals that then filter down throughout a company—must be especially attentive to whether their goals have an appropriate level of specificity and are defined in terms of the true, higher-order objective. Otherwise, employees who are pursuing these goals may become overly focused on the exact strategy specified by the goal (e.g. maximizing anagrams solved), and devalue other approaches that would actually better serve the overall aim (maximizing total earnings).

However, it is also important to note that getting people to notice other options is only a first step, as our results show that people who are pursuing goals will often turn down superior options even when they are explicitly aware of them. Thus, these results reinforce how goal pursuit can often become a dogmatic rather than flexible process, and one in which people do not fully appreciate the value of other options that they encounter. Consequently, the use of goals should be accompanied by processes and structures that help ensure a rational comparison of the available options, such as by obtaining input from a third-party who is more removed from the existing goal-pursuit and can more accurately assess the value of an alternative option.

Finally, goal setting may also simply be poorly suited to certain contexts. Since our results show that setting goals can make people resistant to changing paths later on, goals

should be used cautiously in situations where it is reasonable to assume that other opportunities may arise. For example, a company that is still in an early phase of developing a product or idea may be well-served to delay the setting of any particular goals, since their understanding of the optimal solution is likely to change. In turn, it would be important for them to remain open to other opportunities should they arise, making it risky to engage in a behavior—such as goal setting—which can increase commitment towards a single option.

All in all, these suggestions represent broad strategies for incorporating the present results into an individual's or organization's goal-setting strategy. Nevertheless, much work remains to be done to fully understand the impact of goals on our behavior and the optimal ways to utilize them. In the next sections, we discuss limitations of the present work and suggest possible avenues for future research.

Limitations

One limitation of these studies was that people's level of commitment to the goals they were asked to set was likely quite low compared to the goals people actually pursue in real life. While this does not discredit our findings (indeed, Study 3B suggests that these effects would be even stronger when goal commitment is higher), this remains a limitation in that it reduces our ability to understand the true size of these effects in the real-world.

Another related limitation is the fact that the choices in this study were not highly consequential. Although we continued to find support for our predicted effects when looking at real choices (e.g. Study 3A-C), these choices were ultimately not of great significance. For example, participants' decision in studies 3A-3C not to gather information about another option could be based on an assumption that the alternative task was not likely to be dramatically more lucrative, and thus was not very important to investigate.

Meanwhile, it is possible that in real-life situations with more consequential outcomes, the greater incentive to learn about one's options may help overcome the narrowing of attention that goals create.

Future Directions

As discussed above, the studies in this paper largely utilized goals to which participants were not highly committed and that were not highly consequential. As such, future researchers should aim to replicate these findings with goals that are more realistic and important. One way to study goals to which people are more committed would be to conduct a field study which looks at people's real, self-assigned goals. For example, surveys show that nearly 70% of ride-share drivers drive for both Uber and Lyft, and many of these drivers also utilize the apps' built-in features in order to set earnings goals (WIRED, 2018). As a result, it may be possible to study how these drivers react as they near completion of one of their goals. For instance, if they only needed one more ride to complete their earnings goal for a specific service (e.g. for Uber), would they then be more likely to continue driving for Uber even if they received a notification indicating that a more valuable Lyft ride just became available (supporting H_1)? Similarly, as people approach their goal in one of the apps, would they become progressively less likely to even check the other app at all (supporting H_2)? Ultimately, field studies such as this would provide valuable tests of how these effects operate in more realistic contexts.

However, it is also important to realize that a field study such as this would suffer from selection effects, since drivers are free to choose whether or not they set a goal. As a result, researchers should seek out methods to increase goal commitment while still maintaining a randomized design. This may be achieved through longer-term studies, in

which people are randomly assigned a goal (or no-goal) at the outset, but may then begin to internalize and become committed to this goal as they pursue it over time.

Another important area for future research will be to expand upon the relationship between goal commitment and the effects described in this paper. In studies 3B and 3C, we found that increasing goal commitment through a progress manipulation strengthened these effects. However, going forward it will be important to elucidate whether "commitment" can be seen as an all-encompassing factor that drives the strength of these effects, or alternatively, whether other factors can impact these effects independent of goal commitment. For example, if two people are "equally committed" to a goal, but in one case the goal was set by a third-party while the other goal was self-assigned, will both people be equally like to turn down (H_1) or ignore (H_2) non-focal opportunities? Ultimately, a better understanding of the various factors which may moderate the present effects will be needed to understand how and when goals can be employed most effectively.

Finally, while our results reveal the potential risks and unintended consequences of goal setting, any decision to set a goal must involve a consideration of both the benefits and drawbacks of doing so. Thus, even as this paper suggests certain ways in which goals can be harmful, future work should identify how goals can be set to maximize their strengths and minimize their weaknesses. For example, specific goals have been shown to produce the best performance (Locke and Latham 2002), but our results suggest they may reduce people's consideration of other options. Thus, future work should explore the types of goals that are specific enough to be effective, but not so precise as to constrict adaptability.

Conclusion

This paper proposes two novel ways in which goals can harm those who set them, and provides strong support for these proposals across six studies, using both correlational and experimental methods, for both third-party and first-party decisions, and with both hypothetical and consequential choices. While past research has largely focused on the benefits of goals, this research aims to refine our understanding of goals' true utility for improving our performance. Given the incredibly prominent use of goals by individuals and organizations across the world, further research elucidating the full costs and benefits of goal setting under a variety of circumstances will be critical for optimizing human motivation and performance.

AUTHOR CONTRIBUTIONS

Study 1 was designed by Ravi Dhar and Elizabeth Friedman. Studies 2A and 2B, as well as the studies described in Appendix B and Appendix C, were designed, conducted, and analyzed by Aaron Resnick and Elizabeth Friedman. Studies 3A-3C were designed, conducted, and analyzed by Minju Han, Aaron Resnick, and Elizabeth Friedman. All studies were conducted under the advisement of Ravi Dhar.

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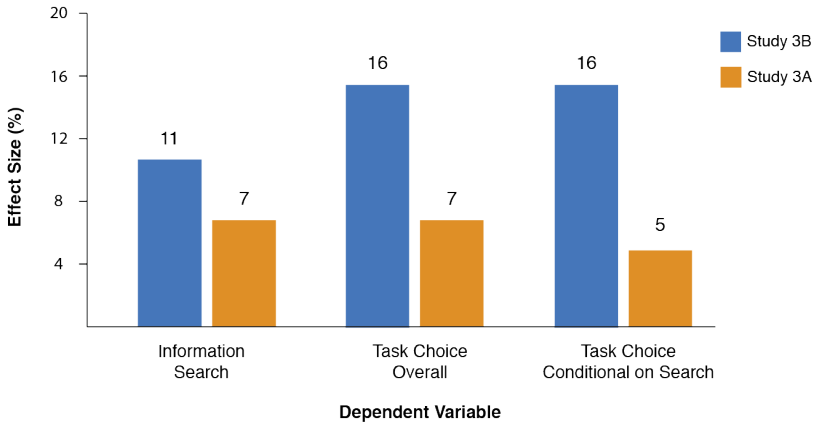
APPENDICES

Appendix A – Figure 1

Figure 1

COMPARISON OF EFFECT SIZES (P.P. DIFFERENCE BETWEEN GOAL AND NO-GOAL CONDITIONS) BETWEEN STUDY 3A AND 3B



Appendices B and C – Two Additional Studies

Below, I describe two additional studies whose results were either mixed or failed to reach statistical significance, but which nevertheless provided some support for our contention that goals can harm those who set them.

Appendix B – Anagram Switching Study

This study was designed to support H_2 (goals narrow peoples' attention, making them inattentive to attractive but non-focal options). Additionally, like studies 3A and 3B reported in the body of this paper, this study was intended to demonstrate that our effects persist with real behavior and consequential choices. Ultimately, the results of this study were not statistically significant, but people's qualitative explanations of their decision-making process demonstrated support for H_2.

Materials & Pre-Test

50 five-letter, single solution anagrams were chosen from a list presented in Gilhooly (1978). These anagrams were then separated into two groups of roughly equal difficulty. Anagram difficulty was assessed using two difficulty measures: BR score and GTZERO. In prior research, both measures have been shown to be highly predictive of anagram solving rates (Mendelsohn, 1976; Mendelsohn & O'Brien, 1974). The fact that the two groups we created were of roughly equal difficulty was also verified in two pre-tests.

Study Design and Results

Participants for this study were 186 individuals recruited through mTurk, who were paid $0.20 as well as a bonus for each anagram they solved. Participants were given two minutes to solve anagrams. They were told that there were two sets of anagrams and that they could switch from one set to the next at any point during the two minutes. Participants were told that the anagrams in the second set were "a little harder but pay twice as much." Specifically, participants received $0.01 for each of the "easier" anagrams that they solved, and $0.02 for each of the "harder" anagrams.

After reading these instructions, half of participants (goal condition) were also shown an additional prompt: "On average, people solve about 11 anagrams in this time frame. Please set a goal for the number of anagrams you aim to solve." Participants in the control condition were not asked to adopt a performance goal. Participants then proceeded to spend two minutes solving anagrams, and their decision about when to switch pages as well as their resulting earnings served as the key dependent measures. Based on the results of our pre-test, we knew that anagrams on the second page were not twice as hard as those on the first page, and thus people who people who paid more attention to the alternative opportunity would earn more money.

We predicted that people in the goal condition would become focused on achieving their anagram goal rather than maximizing earnings, and thus would ignore the opportunity

to move to the second page, since shifting to "harder" anagrams would make it more difficult to reach their goal. Thus, we predicted that people in the goal condition would switch later and ultimately earn less. In reality, these effects were both in the predicted direction, but neither were significant (*p*'s > .75).

Nevertheless, people's descriptions of their switching behavior did provide some further support for our hypothesis. Specifically, a number of people mentioned the goal as guiding their decision about when to switch. For example, people said things like "I was afraid page 2 would be too hard to meet my goal of 11 so I didn't try," or "I realized that it would be harder to hit my goal than I originally expected, so I stuck with the easy anagrams." Ultimately, these comments suggest that the presence of a goal did indeed impact people's behavior and shift them away from a more lucrative opportunity, as they became focused meeting their anagram sub-goal rather than their overall aim of maximizing earnings.

Appendix C – Goals and Academic Performance Study

This study sought to demonstrate the potential deleterious effects of goals on a much more consequential outcome (academic performance) and across a longer time horizon. Ultimately however, this study provided mixed results as to the potential benefits and drawbacks of goal setting.

Study Design and Results

This study unfolded in two parts. First, near the beginning of a semester, Yale students (N = 266) were surveyed about the classes in which they were currently enrolled. Among other things, students specified whether or not they had a goal for each of their courses, what grade they wanted to achieve to meet this goal (or simply what grade they could reasonably expect to receive in classes for which they did not have a goal), and how committed they were to achieving their goal or reasonable grade target. They also specified their overall GPA target for the semester as well as their current overall GPA. In the second part of this study, we followed up with students at the start of the next semester to gather data about how they actually ended up performing in their courses. About half of participants (N = 129) successfully completed the follow-up.

As mentioned, the results of this study were mixed. On the one hand, results showed a *positive* relationship between goal setting (percent of classes with a goal) and overall semester GPA (B = .19, p = .03). Furthermore, this was not explained by the fact that people who set more goals tended to be the better students, as this effect remained significant when controlling for the students' prior overall GPA (B = .23, p = .02). On the other hand, results also showed that students who were highly committed to achieving their grade targets actually ended up achieving worse overall semester GPAs (r = -.14, p = .13) and were more likely to fall short of their GPA goal (r = -.23, p = .01).

Thus, these results suggest that people who attempt to have a high level of commitment across nearly all of their classes end up overextending themselves and

performing worse. Since having a goal is a common technique for increasing commitment, this would seem to imply that setting goals for too many courses could actually harm performance. However, this finding is opposed by the positive relationship between a student's percent of classes with a goal and their resulting semester GPA (and this relationship did not reverse—though it did weaken—when looking at students who set goals in nearly all of their classes). Ultimately, this study could support the idea that setting *too many* goals can be harmful if doing so leads to high commitment in too many areas, but further research would be needed to truly support this conclusion.

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