

Goal-setting and Unethical Behavior: The Journey toward the Goal Matters

by

Midori Nishioka

A thesis

presented to the University Of Waterloo

in fulfillment of the

thesis requirement for the degree of

Master of Arts

in

Psychology

Waterloo, Ontario, Canada, 2018

© Midori Nishioka 2018

Author's Declaration

I hereby declare that I am the sole author of this thesis. This is a true copy of the thesis, including any required final revisions, as accepted by my examiners. I understand that my thesis may be made electronically available to the public.

Abstract

Unethical behavior in the workplace causes harm to organizations and has a widespread impact on society. Recent studies show that difficult and specific goals can lead to unethical behavior. Specifically, studies show that individuals are more likely to lie about their performance when they receive a difficult and specific goal compared to when they receive an easy or vague goal. Moreover, they are more likely to do so when they miss the goal by a small margin compared to when they miss the goal by a large margin. However, decades of research has demonstrated that assigning a difficult and specific goal to employees leads to higher performance than assigning an easy or vague goal. This poses a dilemma regarding the use of difficult and specific goals: How can organizations improve employees' performance without also increasing unethical behavior? Drawing on Control theory (Carver & Scheier, 1998) and Gestalt framework of dynamic experiences (Ariely & Carmon, 2003), we predicted that among individuals whose goal progress decelerates, missing the goal by a small margin (compared to a large margin) would have a weak effect on the extent to which they lie about their performance. On the other hand, we predicted that among individuals whose rate of goal progress is constant or accelerates over time, individuals who miss the goal by a small margin would be more likely to lie than individuals who miss the goal by a large margin. In two experimental studies, we found some support for our hypotheses.

Keywords: goal setting, unethical behavior, near-miss, close counterfactuals

Acknowledgements

I would first like to thank my exceptional mentor and advisor, James, for his guidance and support toward this research project and thesis. I am also grateful for my readers, Ramona and Doug, for their insightful feedback. I would also like to thank my lab mates and research assistants for their contribution. In particular, Vincent, Canaan, Sandra, Gin, Nila, Jessica, Steven, and Natasha have all contributed to building the study materials and/or collecting the data for the studies that are reported in this thesis. Finally, I am grateful for my colleagues, friends, and family who have given me emotional and moral support throughout the years. It has been a long journey with a complex trajectory, but I would like to think that I have attained one of my many difficult goals with the help of everyone...and did so without ethical lapses.

Table of Contents

Author's Declaration	ii
Abstract.....	iii
Acknowledgements	iv
Table of Contents	v
List of Figures.....	vi
List of Tables	vii
Introduction	1
Study 1	13
Method	13
Analyses.....	16
Results.....	16
Discussion.....	19
Study 2.....	21
Method	21
Results.....	22
General Discussion.....	25
Strengths, Limitations, and Future Directions	25
Theoretical Implications	27
Practical Implications	28
Conclusion.....	29
References	30
Appendix A: Tables and Figures	36

List of Figures

Figure 1. Decelerating, constant, and accelerating trajectory with the same discrepancy	38
Figure 2. A screenshot of the job assignment page	39
Figure 3. Screenshot of the first screen of the simulation output	40
Figure 4. Manipulation graphs used for each condition	41
Figure 5. Sample final frame of the simulation	42
Figure 6. Mean overstatement by group (Study 1)	43
Figure 7. Mean overstatement by group (Study 2)	44

List of Tables

Table 1. Results from one-sample t-tests (Study 1)	36
Table 2. Results from one-sample t-tests (Study 2)	37

Introduction

Unethical behavior is a serious problem in organizations. For example, employees at Bausch and Lomb overstated their profits to meet their target (Norris, 1997), toy companies were caught using cheap but dangerous paint on children's toys (Lipton & Barboza, 2007), and more recently, employees at Volkswagen developed a device to cheat on tests of car emission standards (Hotten, 2015). Importantly, unethical behaviors not only hurt organizations (Diermeier, 2011; Turban & Cable, 2003) but also innocent individuals outside of the organization. For example, investors who were deceived by false financial reports could lose their money, children who were exposed to dangerous toys could become ill, and cars that violated emission standards could pollute the environment. Because of such widespread negative impact on society, stakeholders are increasingly demanding organizations to manage their employees in a way that minimizes unethical behavior (Treviño, Weaver, & Reynolds, 2006). Thus, it is important to understand the role that management practices might have on employee unethical behavior.

One management practice that has recently received attention in the behavioral ethics literature is goal-setting. Specifically, recent studies have demonstrated that assigning difficult and specific goals to employees may have an unwanted side effect of increasing unethical behavior (Schweitzer, Ordóñez, & Douma, 2004; Welsh & Ordóñez, 2014a; Welsh & Ordóñez, 2014b). In these studies, individuals who were assigned a difficult and specific goal were more likely to engage in unethical behavior compared to individuals who were assigned an easy goal. As such, Ordóñez, Schweitzer, Galinsky, and Bazerman (2009) have cautioned organizations against setting difficult and specific goals to prevent unethical behavior. However, setting difficult and specific goal is an effective practice to increase employee task performance.

Decades of research has demonstrated that employees who are assigned difficult and specific goals perform better than employees who are assigned easy or vague goals (Latham & Locke, 1979; Locke & Latham, 1990; Locke & Latham, 2002; Locke & Latham, 2007; Mento, Steel, & Karren, 1987). In short, difficult and specific goals increase employee performance but might also increase unethical behavior. This creates a practical dilemma: How can organizations encourage employees to perform well, without also encouraging them to behave unethically?

To begin resolving this dilemma, we argue that difficult and specific goals might only cause unethical behavior under certain conditions. Past findings suggest that the difference between individuals' performance level at the deadline and the assigned goal, or *discrepancy*, may predict lying. Specifically, Schweitzer et al. (2004) found that individuals were particularly more likely to lie about their performance when their discrepancy was small (i.e., missed the goal by a small margin), compared to when their discrepancy was large (i.e., missed the goal by a large margin). Critically, however, past research has ignored individuals' experiences *during* goal pursuit. This is important because individuals' experiences during goal pursuit might affect the extent to which momentary experiences (such as missing the goal by a small margin) influence unethical behavior. We drew on Control theory (Carver & Scheier, 1998) and Gestalt framework of dynamic experiences (Ariely & Carmon, 2003) to form our predictions on the role of individuals' experiences during goal pursuit. We argue that *trajectory*, which reflects the changes (or lack thereof) in the individuals' speed of progress during goal pursuit, will affect the impact of discrepancy on the extent to which individuals lie about their performance. This is because when individuals' goal progress decelerates, they might be more likely to believe that they will not attain the goal, compared to when the rate of goal progress remains the same or accelerates. When goal attainment seems unlikely, individuals may be less inclined to lie

compared to when it seems likely (Shalvi, Dana, Handgraaf, & De Dreu, 2011). Thus, we argue that decelerating trajectory can weaken the impact of discrepancy on the extent to which individuals lie about their performance.

In this manuscript, we present results from two laboratory experiments in which we manipulated both discrepancy and trajectory, and measured individuals' self-reported performance on a work simulation task. We used the participants' self-reported performance on the work simulation task to infer the extent to which they lied about their performance. In Study 1, we examined decelerating and constant trajectories, and in Study 2, we examined decelerating, constant, and accelerating trajectories. By experimentally manipulating discrepancy and trajectory and measuring participants' behavior in the laboratory, we were able to draw causal conclusions about the effects of discrepancy and trajectory on unethical behavior.

Overstating Performance

In this manuscript, we examine one type of unethical behavior that is relevant in the context of goal pursuit: overstatement of performance. We define *overstating performance* as a behavior in which individuals report a level of performance that is greater than their actual level of performance. For example, employees whose task is to wipe the tables at a restaurant might report to their supervisor that they wiped all of the tables when in fact they only wiped half of them. Other examples of overstatement include employees stating that they inspected a gas tank for safety when in fact they have not done so, or employees reporting that they met their sales quota when they have not met the quota. Overstating one's performance is a type of unethical workplace behavior (Treviño et al., 2006) because it violates the ethical standard of truthfulness (Russell et al., 2016). Violating the standard of truthfulness means providing others information that an individual knows to be wrong or inaccurate (Russell et al., 2016). When employees

overstate their performance, they are providing information about their performance outcome that is inaccurate.

Importantly, overstatement is particularly relevant in the context of goal setting. If a goal is difficult, many employees will not attain the goal. This is because goal difficulty is often defined by the probability that a goal can be reached. For example, a goal that only 10% of employees can attain is more difficult than a goal that 90% of employees can attain (Locke, Chah, Harrison, & Lustgarten, 1989). This means that when a difficult goal is assigned to a group of employees, the majority of employees are expected to fail to attain the goal. As such, employees' behavior after failing to attain a difficult goal is a relevant issue for most of the employees. Moreover, employees who did not attain the goal may be more likely to overstate their performance than those who attained the goal, because the psychological cost (and in some cases financial cost) of failing to attain a work goal is likely greater than that of attaining the goal (Schweitzer et al., 2004). Thus, in this paper, we focus on situations in which employees failed to meet a difficult goal and subsequently have the opportunity to overstate their performance. Specifically, among employees who did not attain the goal, we examine the ways in which their *discrepancy* and *trajectory* affect their overstatement.

Discrepancy

Although difficult and specific goals often increase employee performance, recent studies have shown that they might also cause individuals to overstate their performance (Schweitzer et al., 2004; Welsh & Ordóñez, 2014a; Welsh & Ordóñez, 2014b). For example, individuals who were assigned a difficult and specific goal of completing 12 math questions in 4 minutes later reported a greater number of solved questions compared to individuals who were assigned a

vague, “do your best” goal (Welsh & Ordóñez, 2014a). Because of such findings, some scholars have cautioned organizations against assigning difficult and specific goals (Ordóñez et al., 2009).

However, among individuals who were assigned a difficult goal, people may be more likely to overstate their performance in some situations than others. Specifically, Schweitzer et al. (2004) found that when individuals missed a difficult goal by a small margin, they were more likely to report a higher level of performance compared to when they missed the goal by a large margin. That is, the difference between individuals’ performance level at the deadline and the assigned goal, which we call *discrepancy*, may affect the extent to which they overstate their performance. The following scenario illustrates an example of discrepancy: Imagine a restaurant employee whose goal was to clean 50 tables by 12 p.m. However, the employee only cleaned 20 tables by 12 p.m. This employee has a discrepancy of 30 tables (i.e., difference between 50 and 20 tables). Importantly, among employees who failed to attain a goal, their discrepancy can vary. At the deadline, some employees may have a small discrepancy (e.g., five tables remaining) whereas other employees may have a large discrepancy (e.g., thirty tables remaining).

Schweitzer et al. (2004) argued that a smaller discrepancy leads to greater likelihood of overstatement compared to a larger discrepancy. They formed this prediction by drawing on research on counterfactual thoughts. Counterfactual thoughts refer to imagined alternative versions of actual events (Roese, 1994; Roese, 1997). Counterfactual thoughts may affect overstatement because they help individuals to justify their lie (Shalvi et al., 2011; Bassarak et al., 2017). Individuals need to justify their lie because lying can incur some psychological cost, such as threatening their positive self-concept (Mazar, Amir, & Ariely, 2008). For example, studies have shown that individuals lie to profit themselves, but they do so only to the extent that they can justify their behavior (Schweitzer & Hsee, 2002; Shalvi, Gino, Barkan, & Ayal, 2015).

Counterfactual thoughts facilitate justifying a lie by making the lie seem less distant from reality (Shalvi et al., 2011). That is, if individuals can generate counterfactuals that appear probable (i.e., what could have happened), they can more easily construe their lie as a plausible alternative outcome.

Moreover, counterfactual thinking is more likely to occur in certain situations than in others. Missing a goal by a small margin is more likely to generate counterfactuals than missing it by a large margin (Kahneman & Varey, 1990; Roese, 1997). This is because individuals interpret the fact that they *almost* reached a goal as an indicator that goal attainment was highly likely (Covey & Zhang, 2014; Kahneman & Varey, 1990). For example, if individuals missed a flight by a few minutes, they are more likely to think that they could have caught the flight compared to if they missed the flight by several hours. Thus, a small discrepancy is more likely to generate counterfactuals about “what could have plausibly happened” compared to a large discrepancy.

In sum, consistent with Schweitzer and colleagues’ (2004) findings, we expected that a small discrepancy will lead individuals to overstate to a greater extent compared to a large discrepancy.

Hypothesis 1: Individuals will overstate their performance to a greater extent when discrepancy is small compared to when discrepancy is large.

However, we argue that discrepancy does not fully capture the process through which goal-pursuit leads to overstatement. Because goal-pursuit typically occurs over time, it is important to examine the extent to which individuals’ experiences during goal pursuit influences overstatement.

Trajectory

In the present research, we argue that *trajectory*, or individuals' pattern of goal progress over time, will reduce the effect of discrepancy on overstatement. By "pattern of goal progress," we mean a pattern that reflects changes (or lack thereof) in the rate of goal progress. For example, an individual's goal progress may be rapid at first, but slow down later. Importantly, trajectory can vary even when the discrepancy remains the same. That is, individuals with different trajectories can ultimately have the same performance level by the deadline. If their goal was the same, this results in identical discrepancy with differences in trajectory. We propose that although in general, a small discrepancy leads to greater overstatement compared to a large discrepancy, certain trajectories can reduce or enhance the impact of discrepancy on overstatement. That is, even when individuals end up at the same level of performance by the deadline, how they got there can be different. This might in turn affect the extent to which they overstate their performance.

Trajectory can take many forms, but we propose three examples of trajectories that individuals may experience at work: decelerating, constant, and accelerating trajectories (Figure 1). When individuals have a decelerating trajectory, they progress toward their goal rapidly at first, but their progress slows down later. For example, a restaurant employee whose goal is to wipe 50 tables might wipe the tables at a rate of one table every 10 seconds as soon as they begin working. However, this rate might gradually slow down to one table every 30 seconds. Alternatively, when individuals have a constant trajectory, they do not experience a change in their speed of progress. For example, the restaurant employee might progress toward the goal at a relatively constant rate of wiping one table every 20 seconds. Finally, when individuals have an accelerating trajectory, their rate of goal progress is slow in the beginning but accelerate as time

passes. For example, the restaurant employee might begin working at a slow rate of wiping one table every 30 seconds, but this rate might gradually increase to one table every 10 seconds.

Whereas we recognize that these three trajectories are not exhaustive, we argue that they are plausible and common in the workplace. For example, these trajectories might occur because employees intentionally pace their work in a certain way. Employees might pace themselves such that they make the most progress early and slow down their rate of progress later (deceleration), pace themselves such that they complete a set amount of work per unit of time (constant), or complete the bulk of the work close to the deadline (acceleration; Gevers, Mohammed, & Baytalskaya, 2015; Gevers, Rutte, & Van Eerde, 2006). Moreover, change in rate of progress might occur because employees become tired over time (deceleration) or employees become more familiar with their work task and thus work faster as time passes (acceleration; Healy, Kole, Buck-Gengler, & Bourne, 2004). In addition, employees might strive to maintain a working speed that minimizes error and discomfort (constant; Gerard, Armstrong, Martin, Rempel, 2002; West, 1969). In sum, there are various plausible reasons why employees might experience decelerating, constant, or accelerating trajectories in the workplace. Thus, in the current paper, we focus on these three trajectories.

To form our predictions for the role of trajectory, we drew on Control theory research (Carver & Scheier, 1998) as well as research on Gestalt framework of dynamic experiences (Ariely & Carmon, 2003). Research on Control theory examines individuals' sense of speed during goal pursuit and suggests that individuals infer their likelihood of goal attainment from their speed of progress. That is, when individuals are progressing slowly toward a goal, they are less likely to believe that they can reach their goal, compared to when individuals are progressing rapidly toward their goal (Carver & Scheier, 1998; Chang, et al., 2010). A decelerating trajectory

can mean that an individual's progress was initially rapid. However, the change in speed from fast to slow (decelerating) generates the feeling of progressing slowly because the rapid initial progress is compared against the slower progress (Carver & Scheier, 1998; Chang et al., 2010). On the other hand, a constant trajectory does not involve any change in speed and an accelerating trajectory involves an increase in speed. Thus, while individuals are pursuing their goal, individuals with a decelerating trajectory may be less likely to expect goal attainment compared to individuals with a constant or an accelerating trajectory.

We also drew from research on Gestalt framework of dynamic experiences (Ariely & Carmon, 2003) which examines individuals' perception of trends in their experiences over time. This literature provides additional support for our claim that a decelerating trajectory leads to a lower expectation of goal attainment compared to a constant or an accelerating trajectory. Research suggests that individuals form a global impression of trends in their experiences over time and that they expect this trend to continue into the future (Ariely & Carmon, 2003; Reb & Cropanzano, 2007; Reb & Greguras, 2010). This means that a stronger positive trend (i.e., improvements) in individuals' current experiences lead to a stronger expectation that their experiences will continue to improve in the future. For example, employees whose job satisfaction has been improving are more likely to expect that their work outcomes in the future will continue to improve compared to employees whose job satisfaction has not been improving (Chen, Ployhart, Thomas, Anderson, & Bliese, 2011). Applied in the context of goal pursuit, we argue that individuals will project their current trend in goal progress and expect that the trend will continue. Close to the deadline, a decelerating trajectory has a flatter trend in goal progress compared to a constant or an accelerating trajectory. This means that, as the deadline approaches, individuals with a decelerating trajectory are more likely to expect that their performance will

not improve compared to individuals with a constant or an accelerating trajectory. Thus, while individuals pursue their goal, individuals with a decelerating trajectory will have a lower expectation of goal attainment compared to individuals with a constant or an accelerating trajectory.

Interaction between Trajectory and Discrepancy

The abovementioned literatures suggest that trajectory influences the extent to which individuals expect that they will attain the goal. We combine this idea with the rationale for the effect of discrepancy on overstatement. We propose that trajectory influences the relationship between discrepancy and overstatement because trajectory affects individuals' expectation of goal attainment. Recall that a small discrepancy is expected to lead to greater overstatement than a large discrepancy because when the discrepancy is small, the alternative outcome to missing the goal (i.e., goal attainment) appears more likely than when the discrepancy is large. We argued that believing that goal attainment was likely generates counterfactual thoughts, which help individuals to justify overstating their performance. If trajectory affects individuals' belief about goal attainment, trajectory may influence the impact of discrepancy on overstatement.

Decelerating Trajectory

As we argued above, during goal pursuit, if individuals' trajectory is decelerating, their expectation to attain the goal is lower, compared to if the trajectory is constant or accelerating. Thus, even after they attain a performance level that is close to the goal (i.e., small discrepancy), individuals with a decelerating trajectory and a small discrepancy may not be any more likely to believe that goal attainment was highly likely, compared to individuals with a decelerating trajectory and a large discrepancy. If their discrepancy is large, both their trajectory and discrepancy indicate that they were unlikely to meet the goal. Thus, among individuals with a

decelerating trajectory, discrepancy is expected to have a weak effect on overstatement. In sum, we predicted that a decelerating trajectory will reduce the impact of discrepancy on overstatement.

Constant or Accelerating Trajectory

In contrast to a decelerating trajectory, when individuals' trajectory is constant or accelerating, the effect of discrepancy on overstatement will be pronounced. Prior to the deadline, individuals are likely to infer from a constant or an accelerating trajectory that they are likely to attain the goal. However, the extent to which individuals hold this expectation will depend on discrepancy.

Small discrepancy. We argue that, among individuals with a constant or an accelerating trajectory, those with a small discrepancy will have a higher expectation of goal attainment than those with a large discrepancy. This is because prior to the deadline, individuals who will eventually have a small discrepancy are in fact on a track toward coming close to attaining the goal. Thus, when they use their trajectory to estimate their future progress, they are more likely to believe that they will attain the goal compared to individuals whose discrepancy is large.

Large discrepancy. On the other hand, prior to the deadline, individuals who will eventually have a large discrepancy are in fact on a track toward missing the goal by a large margin. Thus, if they project their trajectory and estimate their future progress, they are likely to anticipate their eventual failure, even if their current trajectory forms a positive trend (constant or accelerating trajectory). Because these individuals form a lower expectation prior to the deadline compared to individuals whose discrepancy is small, they will be less inclined to generate counterfactuals. Thus, they will be less inclined to overstate their performance.

As such, among individuals with a constant or an accelerating trajectory, those with a small discrepancy are more likely to generate counterfactuals and overstate their performance compared to those with a large discrepancy. In turn, among individuals with a constant or an accelerating trajectory, those with a small discrepancy are more likely to overstate their performance than those with a large discrepancy. As such, the effect of discrepancy on overstatement will be more pronounced when individuals have a constant or an accelerating trajectory compared to a decelerating trajectory. Thus, we predicted that individuals whose discrepancy is small and whose trajectory is constant or accelerating would overstate their performance to the greatest extent.

Hypothesis 2: The effect of discrepancy on overstatement will be attenuated when individuals' trajectory is decelerating compared to when their trajectory is constant or accelerating. As such, individuals will overstate to the greatest extent when their discrepancy is small and their trajectory is constant or accelerating.

Study 1

Method

Participants. Participants were 121 undergraduate students at a large Canadian university. The sample was 59.84% female, with a mean age of 20.84 ($SD = 2.35$). Participants were mostly Asian (42.62%) or White (36.07%). Among the 121 participants, 96 received course credit and 25 received \$5 for participating. Receiving course credit or cash did not affect overstatement and did not moderate any of our effects of interest.

Procedure. We advertised the study as a “Managerial skills study” on an online platform for university students seeking to complete research studies. The study took place in a computer lab. Each study session consisted of up to five individuals participating at the same time and lasted for about 30 minutes. Each participant sat at a computer station and completed the study individually. Participants were randomly assigned to one of four between-subject conditions within a 2 x 2 design manipulating discrepancy (small vs. large) and trajectory (constant vs. decelerating). Participants completed a demographic questionnaire followed by the experimental task described below.

Experimental task. The experimental task was modeled after Wood and Bandura’s (1989) managerial decision-making simulation task. Participants received all instructions on the computer. Participants were told to complete a “computer simulation exercise” which measures their “intuitive managerial skill.” To incentivize doing well on this task, we told the participants that performance on this task predicts performance in real work settings. Participants played the role of a manager at a stuffed toy factory. The participants’ task was to assign four different jobs to four employees so that each employee is responsible for one job. Each job corresponded to a process in manufacturing stuffed toys (e.g., cutting the fabric). Participants read a brief

description of each job and summary information about each employee. The brief summary contained information about each employee's level of skill in machine operation, their ability to attend to details, their working speed, and their energy level. We selected these employee attributes because we believed that, to a naïve participant, these attributes will appear to be important to the jobs at the factory.

Participants then learned that the computer would run a simulation of the factory based on how the jobs were assigned. They were told that the output of the simulation shows the number of boxes of toys produced at the factory over a 120-minute shift. We modeled a working condition in which individuals are given a difficult and specific goal by giving the participants a goal. Participants read the following before they began assigning the jobs to the employees: "As a manager, it is important that you commit to a specific yet attainable target. Your target is to produce 100 boxes of toys by the deadline (120 minutes). This target is difficult, but realistic." Figure 2 shows a screenshot of the job assignment page. Participants had 75 seconds to assign the four jobs to the four employees. During the last 20 seconds, they saw a warning message that stated that they must finish assigning the jobs before the page advances automatically. After assigning the jobs, participants saw the output of the simulation, which we describe next.

Manipulation. Although participants were told that the way in which they assigned the jobs determines the output of the simulation and thus their own performance on this simulation task, in reality, the participants' decisions had no impact on the output. Instead, the output of the simulation was used to manipulate trajectory and discrepancy. Participants were told to press the "Start" button to begin watching the simulation (Figure 3). Participants saw an output graph that grew over 1 minute (in real time) which was described as a fast-forwarded time-lapse

representing the production of toys during the 120-minute shift. Participants saw an animated graph corresponding to their assigned condition (top four graphs of Figure 4).

Trajectory was manipulated by showing the participants a graph that grew linearly (for the constant conditions) or one that grew rapidly initially but tapered later (for the decelerating conditions). Discrepancy was manipulated by the number of boxes produced by the deadline, displayed on the final frame of the animated graph. In the small discrepancy condition, the graph ended at 95.5 boxes and in the large discrepancy condition, the graph ended at 75 boxes. Figure 5 shows a sample screen shot of the final frame. The number corresponding to the number of boxes produced (95.5 and 75) was not displayed on the screen for participants to see, but rather was plotted on the graph. Participants had to examine the graph's y-axis to find and report the number of boxes produced by the deadline. We did not display the number of boxes produced (95.5 and 75) on the screen because we were interested in participants' self-report of their performance.

Dependent variable. Self-reported number of boxes produced was measured to infer overstatement. After viewing the simulation graph, participants were asked to report the number of boxes they produced by the deadline. Participants selected a number on a 0-120 slider bar on an electronic survey that appeared immediately after the final frame of the simulation. Participants were not able to refer back to the graph at this point in the experiment. Overstating was operationalized as reporting a number that is larger than the actual number of boxes produced (i.e., 95.5 and 75 for small and large discrepancy, respectively). We computed an overstatement score for each participant by subtracting their self-reported number of boxes from the actual number of boxes. Thus, a higher score on this variable indicated overstating to a greater extent than a lower score on this variable.

Analyses

We predicted that individuals with a small discrepancy would overstate to a greater extent than individuals with a large discrepancy (Hypothesis 1). We also predicted that the effect of discrepancy on overstatement will be attenuated when individuals' trajectory is decelerating compared to when their trajectory is constant. Hypothesis 1 was tested by examining the main effect of discrepancy on overstatement in a two-way analysis of variance (ANOVA). Hypothesis 2 predicted an ordinal interaction in which a particular group (i.e., small discrepancy and constant trajectory) was expected to be significantly different from the other groups. Ordinal interactions are often obscured when it is assessed through an ANOVA (Bobko, 1986; Elias, 2004; Strube & Bobko, 1989). That is, an ANOVA may not identify a significant interaction when in fact an ordinal interaction is present in the population (Strube & Bobko, 1989). To detect an ordinal interaction, Bobko (1986) recommends the following procedure: (1) conduct a one-way ANOVA comparing the groups that are not expected to differ from one another, and (2) conduct a linear contrast to test whether the group that is hypothesized to be different is in fact statistically different from all the other groups. We followed Bobko's (1986) recommendation to test Hypothesis 2.

Results

Hypothesis 1. Figure 6 shows each group's overstatement score (i.e., mean difference between self-reported value and actual value). To test the prediction that a small discrepancy leads to overstatement to a greater extent than a large discrepancy (Hypothesis 1), we conducted a two-way analysis of variance (ANOVA) with discrepancy and trajectory predicting overstatement. The results did not reveal a significant main effect of discrepancy ($F_{(1, 117)} = 3.15$, $MS_{error} = 55.02$, $p = .07$, $\eta^2_{partial} = .02$). Thus, Hypothesis 1 was not supported. This analysis

revealed a main effect of trajectory ($F_{(1, 117)} = 4.25$, $MS_{error} = 55.02$, $p = .04$, $\eta^2_{partial} = .04$), suggesting that trajectory manipulation affected participants' overstatement across the discrepancy manipulation. Participants in the constant trajectory condition ($M = 3.28$) overstated to a greater extent than participants in the decelerating trajectory condition ($M = 0.50$). However, the analysis did not reveal an interaction between discrepancy and trajectory ($F_{(1, 117)} = .00$, $MS_{error} = 55.02$, $p = .96$, $\eta^2_{partial} < .001$). As noted earlier, Hypothesis 2 predicted an ordinal interaction, which could have been obscured in this analysis.

Hypothesis 2. Hypothesis 2 predicted that the effect of discrepancy on overstatement will be attenuated when individuals' trajectory is decelerating compared to when their trajectory is constant, and that individuals with a small discrepancy and a constant trajectory would overstate to the greatest extent. To test Hypothesis 2, we first conducted a one-way ANOVA with the three groups that were *not* expected to differ from one another. That is, we tested whether the small discrepancy/decelerating trajectory, the large discrepancy/decelerating trajectory, and the large discrepancy/constant trajectory groups did not differ from one another. As expected, a one-way ANOVA did not reveal a significant difference among the three groups ($F_{(2, 91)} = 1.50$, $MS_{error} = 48.68$, $p = .23$, $\eta^2_{partial} = .03$).

Next, we conducted a linear contrast to compare the small discrepancy/constant trajectory group against the three other groups. The result of this contrast indicated that individuals with a small discrepancy and a constant trajectory overstated the most ($t_{(117)} = 2.18$, $MS_{error} = 55.02$, $p = .03$, $d = .40$). In sum, this set of analyses provide support for Hypothesis 2. Individuals with a small discrepancy and a constant trajectory overstated to the greatest extent compared to individuals whose discrepancy was large and/or whose trajectory was decelerating.

Supplementary analyses. To assess Hypothesis 2 further, we examined whether the average overstatement *within* each group was significantly different from zero. We conducted this analysis to test whether individuals in fact *overstated* their performance to an extent that is greater than chance. That is, demonstrating that overstatement in one group is larger than overstatement in other groups does not necessarily mean that one group's average self-reported value was significantly greater than the actual value (i.e., 95.5 or 75 for small and large discrepancy respectively). We conducted one-sample t-tests, which allowed us to examine whether participants reported a performance level that is greater than they would have had they not overstated their performance. If they *did not* overstate their performance, the mean difference between the actual value and the self-reported value would *not* be significantly different from zero. In these analyses, we used the MS_{error} from the omnibus ANOVA as our estimate of population variance (Howell, 2014).

We conducted four one-sample t-tests to compare the overstatement score in each of the four groups against zero. To caution against Type I error, the results were interpreted with a Bonferroni adjusted alpha level ($.05/4 = .0125$) per test. Results are shown in Table 1. Consistent with Hypothesis 2, average overstatement among individuals in the small discrepancy/constant trajectory condition was significantly different from zero. On the other hand, average overstatement scores among individuals in the decelerating trajectory conditions and the large discrepancy conditions were not significantly different from zero. These results provide additional support for Hypothesis 2, suggesting that individuals overstated their performance only when their discrepancy was small and their trajectory was constant.

Discussion

In Study 1, we did not replicate Schweitzer et al.'s (2004) finding that individuals who missed the goal by a small margin overstated to a greater extent than individuals who missed the goal by a large margin. However, we found that individuals whose discrepancy was small and whose trajectory was constant overstated their performance to the greatest extent. Thus, individuals' experience during goal pursuit appears to be an important determinant of their decision to engage in unethical behavior.

In Study 2, we sought to expand and replicate Study 1 by also examining an accelerating trajectory. Whereas we predicted that a decelerating trajectory would dampen individuals' expectations, an accelerating trajectory might *accentuate* individuals' expectations. Indeed, Covey and Zhang (2014) found that the sense of accelerating progression toward a goal increased individuals' expectations of goal attainment and counterfactual thinking. In line with our argument for the role of counterfactuals, increased counterfactual thinking may in turn lead to increase in overstatement. Thus, it is possible that an accelerating trajectory enhances the effect of discrepancy on overstatement. However, among individuals with a small discrepancy, we did not have a strong theoretical rationale for predicting that individuals with an accelerating trajectory will overstate to a greater extent compared to individuals with a constant trajectory will. To explore whether, among individuals with a small discrepancy, an accelerating trajectory would lead to greater levels of overstatement compared to a constant trajectory, in Study 2, we added another set of conditions that reflect an accelerating trajectory.

Study 1 was also limited in scope because of the incentive involved in overstating performance. In Study 1, we told the participants that the outcome of the simulation exercise predicts real work performance with the aim to motivate participants to appear competent to

themselves and/or to others. That is, we incentivized participants to overstate their performance by appealing to their need for competence. Although this is a possible motivator of unethical behaviors in the workplace, monetary incentive is highly appropriate and common in the context of goal setting. Organizations commonly link employees' achievement of work goals with monetary incentives (Latham & Locke, 2006; Locke, 1975). To reflect the ways in which goal setting is implemented in organizations, in Study 2, we offered participants a chance to win a cash prize for attaining the assigned goal.

Study 2

Method

Participants. Participants were 281 undergraduate students at a large Canadian university. The sample was 74.64% female and had a mean age of 19.74 ($SD = 3.37$). Most participants identified themselves as White (38.49%) or Asian (38.13%). All the participants in this study received course credit for participating. In addition, participants had the opportunity to win 50 Canadian dollars. We will describe the details of the monetary incentive below.

Procedure. As with Study 1, the study was advertised as a “Managerial skills study.” The study was described as one in which participants will perform a work simulation exercise and will have a chance to win \$50 depending on their performance on the exercise. The study took place in the same computer lab as Study 1 and each study session lasted about 45 minutes. Participants were randomly assigned to one of six between-subject conditions within a 2 x 3 design manipulating discrepancy (small, large) and trajectory (decelerating, constant, accelerating). Participants completed demographic questionnaires and the experimental task.

Monetary incentive. The experimental task was identical to that of Study 1, except that it included a description about the monetary incentive. Specifically, just before assigning the four jobs to the four employees, participants saw the following message: “If you produce 100 boxes or more by the deadline, you will get a chance to enter a draw to win \$50. If you produce 100 boxes or more, you will draw a coin at the end of the study. If you pick the winning coin, you will receive \$50 in cash.” Because the participant’s performance on the simulation was in fact manipulated by the researchers, at the end of the study, all participants drew a coin for an opportunity to win \$50.

Manipulation. We manipulated trajectory and discrepancy using the same method as Study 1. Trajectory was manipulated by showing the participants a graph that grew linearly (constant conditions), a graph that grew rapidly initially but slowed down later (decelerating conditions), or a graph that grew slowly initially but sped up later (accelerating conditions). Discrepancy was manipulated by the number of boxes produced by the deadline (95.5 boxes for small discrepancy and 75 boxes for large discrepancy). The manipulation graphs for all the conditions are shown in Figure 4.

Dependent variable. As with Study 1, self-reported number of boxes that were produced was measured to infer overstatement.

Results

Hypothesis 1. Each group's mean overstatement score is presented in Figure 7. Hypothesis 1 predicted that individuals with a small discrepancy would overstate to a greater extent than individuals with a large discrepancy. To test Hypothesis 1, we conducted a two-way ANOVA with discrepancy and trajectory predicting overstatement. The results did not reveal a main effect of discrepancy ($F_{(1, 275)} = .01$, $MS_{error} = 62.90$, $p = .93$, $\eta^2_{partial} < .001$). Thus, Hypothesis 1 was not supported. Moreover, the results did not reveal a main effect of trajectory ($F_{(2, 275)} = .82$, $MS_{error} = 62.90$, $p = .44$, $\eta^2_{partial} = .006$). The analysis also did not reveal an interaction between discrepancy and trajectory ($F_{(2, 275)} = 1.76$, $MS_{error} = 62.90$, $p = .17$, $\eta^2_{partial} = .01$). However, as with Study 1, Hypotheses 2 and 3 predicted ordinal interactions, which could have been obscured in this analysis.

Hypothesis 2. Hypothesis 2 predicted that individuals in the small discrepancy/accelerating trajectory and individuals in the small discrepancy/constant trajectory conditions would overstate to the greatest extent. We first conducted a one-way ANOVA with

the four groups that were not expected to differ from one another (i.e., the two decelerating conditions and the two large discrepancy conditions). As expected, a one-way ANOVA did not reveal a significant difference among the four groups ($F_{(3, 185)} = .33$, $MS_{error} = 72.64$, $p = .81$, $\eta^2_{partial} = .005$).

Next, we conducted a linear contrast to compare the average of small discrepancy/constant trajectory group and small discrepancy/accelerating trajectory group against the average of the four other groups. The result of this contrast did not reveal a significant difference between these two sets of experimental groups ($t_{(275)} = .14$, $MS_{error} = 62.90$, $p = .88$, $d = .02$). It is evident from examining the mean overstatement scores (Figure 7) that the results did not replicate Study 1 for the small discrepancy/constant trajectory group. In Study 1, this group overstated to the greatest extent, but in Study 2, the mean overstatement score was the lowest ($M = .18$) in this group compared to all other groups.

However, the mean overstatement scores (Figure 7) suggest that the small discrepancy/accelerating trajectory group overstated to the largest extent. Thus, we also tested whether the small discrepancy/accelerating trajectory group was significantly different from the average of the other five groups. This contrast, however, did not reveal that the small discrepancy/accelerating trajectory group was significantly different from the rest ($t_{(275)} = 1.57$, $MS_{error} = 62.90$, $p = .12$, $d = .02$). In sum, this set of analyses did not provide support for Hypothesis 2.

Supplemental analyses. Although the above results suggested that the small discrepancy/accelerating trajectory group was not different from the other five groups, we explored whether the average overstatement in this group was significantly greater than zero. We conducted one-sample t-tests to compare the mean overstatement score in each of the six groups

against zero. To caution against Type I error, the results were interpreted with a Bonferroni adjusted alpha level ($.05/6 = .008$) per test. Results are shown in Table 2. Partially consistent with Hypothesis 2, this analysis demonstrated that the average overstatement among individuals in the small discrepancy/accelerating trajectory was significantly different from zero. On the other hand, the mean overstatement scores for individuals in all other conditions were not significantly different from zero.

Summary of results. Overall, the results from Study 2 provided mixed support for our hypotheses. First, we did not find support for Hypothesis 1, which predicted that individuals with a small discrepancy would overstate to a greater extent than individuals with a large discrepancy. Second, we did not replicate Study 1 for the effect of constant trajectory on discrepancy; unlike Study 1, the results did not show that individuals in the small discrepancy/constant trajectory group overstated to the greatest extent. Finally, Hypothesis 2 was partially supported for the effect of accelerating trajectory on discrepancy. The average overstatement among individuals in the small discrepancy/accelerating trajectory group was significantly different from zero, whereas overstatement among individuals in other groups were not different from zero. That is, only individuals whose discrepancy was small and whose trajectory was accelerating overstated their performance.

General Discussion

Recent studies on goal-setting and unethical behavior have raised concerns regarding the possible side effects of assigning difficult and specific goals in organizations. However, even though employees usually pursue their work goals over time, this literature has ignored the role of individuals' experiences during goal pursuit. Across two studies we found some evidence that individuals' trajectory affects the relationship between their discrepancy and the extent to which they overstate their performance level. Specifically, we found in one study that individuals whose discrepancy was small and whose trajectory was constant overstated their performance to the greatest extent. Moreover, we found some evidence that individuals whose discrepancy was small and whose trajectory was accelerating were most likely to overstate their performance.

Strengths, Limitations, and Future Directions

A key strength of our studies is that trajectory and discrepancy were experimentally manipulated, which allowed us to make causal inference about the effects of trajectory and discrepancy on unethical behavior. Moreover, we examined individuals' self-reported performance in a laboratory setting in which much of the contextual factors which could affect their behavior were held constant across all experimental conditions. With little confounding factors, we can be confident in our interpretation of the results from these studies.

However, across two studies, we found mixed support for our hypotheses. Firstly, we did not replicate Schweitzer et al.'s (2004) finding that a small discrepancy leads to greater overstatement than a large discrepancy. It is possible that this divergence in results occurred because participants in Schweitzer and colleagues' (2004) study did not see their progress over time, which may have made their momentary experience of discrepancy from the goal highly

salient. In contrast, in our paradigm, participants saw a record of their progress over time, which may have dampened the impact of “being in the moment” of failing to attain the goal.

Secondly, we did not consistently find support for the effect of constant trajectory on the relationship between discrepancy and overstatement. In Study 1, individuals with a constant trajectory and a small discrepancy were *most* likely to overstate, whereas in Study 2, individuals with a constant trajectory and a small discrepancy were *least* likely to overstate. This inconsistent finding is difficult to explain from a methodological viewpoint, since the sample characteristics, study stimuli, and instructions did not change between these two studies, except for the incentive structure. These findings might be demonstrating that the influence of trajectory is highly variable. As such, it is important for future studies to identify the conditions under which the effects of trajectory may be reversed.

Whereas the above discussion focused on possible reasons for the mixed findings, our studies also have several methodological limitations that must be discussed independent of the findings. Firstly, we cannot rule out the possibility that the effects observed were partly due to participants making errors when reading the graphs, instead of purposely inflating their performance. For example, it is possible that certain conditions during goal pursuit nudge individuals to view their performance in a self-serving way, without consciously changing their self-report of their performance. Although we define overstatement as an unethical behavior in which individuals report a level of performance that they know to be wrong or inaccurate, we acknowledge the difficulty of confirming whether participants in our study knew their true level of performance. Future studies might better address this issue by testing the study materials on an independent sample to demonstrate that, without context or incentives to lie, individuals can accurately report the level of performance that is presented to them.

Secondly, the trajectories we chose to examine may have been too simplistic. For example, trajectory over time may involve interruptions (no progress) and setbacks (negative progress), which we did not model in our manipulation stimuli. However, our studies provide initial evidence that a simple manipulation of trajectory produce differences in overstatement. The set of trajectories we examined in this paper provide a starting point that future studies can build upon. For example, Reb and colleagues (Barnes, Reb, & Ang, 2012; Reb & Cropanzano, 2007; Reb & Gerguras, 2010) have already explored the effects of various trajectories (e.g., curvilinear trajectory, declining trajectory, improving trajectory) on performance evaluation. Thus, there is some evidence that individuals distinguish among these trajectories and as such these various trajectories can be applied to studies that examine unethical behaviors.

Theoretical Implications

Although several studies have demonstrated that difficult and specific goals lead to an increase in unethical behavior, research on this topic is still at its early stage. Thus, a coherent theory on the side-effects of difficult and specific goals has not been developed at this point. For example, the specific conditions under which difficult and specific goals lead to unethical behavior are still unknown. To build toward a comprehensive understanding of the influence of goal-setting on unethical behavior, we integrated findings and theories on the ways in which individuals experience events over time with research on goal-setting and behavioral ethics. Specifically, research on diverse topics in psychology, such as sense of speed (Carver & Scheier, 1998), performance evaluation (Reb & Cropanzano, 2007), job satisfaction (Chen et al., 2011), and pain (Redelmeier & Kahneman, 1996), suggest that individuals' trajectory over time may be important. However, to our knowledge, research on goal-setting and unethical behavior has thus far ignored individuals' trajectory during goal pursuit. We contribute to the literature by

introducing the concept of trajectory and by demonstrating its importance to unethical behavior in the workplace.

In addition to highlighting the importance of trajectory, our research opens up the possibility of other characteristics of individuals' experiences over time. For example, studies have shown that individuals' retrospective evaluation of a series of events is influenced by the most extreme moment during that episode (e.g., Ariely, 1998; Redelmeier & Kahneman, 1996). Thus, it is possible that in addition to trajectory, a memorable moment that occurred during goal-pursuit affects individuals' decision to engage in unethical behavior. For example, feeling stuck at one point during a goal-pursuit episode might be a frustrating and memorable moment that later influences individuals' ethical decisions. In short, a broader theoretical implication of our research is that the ways in which individuals' experiences over time affect their unethical behavior may be a fruitful area of research.

Practical Implications

Our results also point to several practical implications. First, we held goal difficulty and specificity constant and examined individuals' unethical behaviors when they failed to attain the goal. We found that unethical behavior occurred only under specific conditions (i.e., small discrepancy and constant or accelerating trajectory). Thus, our findings suggest that, in most situations, organizations can assign difficult and specific goals to their employees without the negative side effects of unethical behavior. Secondly, if our rationale regarding the effects of trajectory is correct, managers can target their intervention to prevent unethical behavior. For example, managers can monitor their employees' rate of progress and remind employees that there will be no negative consequences for failing to attain the goal (Latham & Locke, 2006), particularly if the employees are progressing rapidly toward the goal.

Conclusion

In conclusion, this paper highlights the importance of individuals' experiences during goal-pursuit, which has been ignored in previous research on goal-setting and unethical behavior. Specifically, we found that individuals' trajectory during goal pursuit affects the extent to which the discrepancy from their goal influences overstatement of their performance. Among individuals whose rate of goal progress was constant or accelerated over time, individuals who missed the goal by a small margin were more likely to lie about their performance than individuals who missed the goal by a large margin.

References

- Ariely, D. (1998). Combining experiences over time: The effects of duration, intensity changes and on-line measurements on retrospective pain evaluations. *Journal of Behavioral Decision Making, 11*, 19-45.
- Ariely, D., & Carmon, Z. (2003). Summary assessment of experiences: The whole is different from the sum of its parts. In G. Loewenstein, D. Read, & R. Baumeister (Eds.), *Time and decision: Economic and psychological perspectives on intertemporal choice* (pp. 323-349). New York: Russell Sage Foundation.
- Barnes, C. M., Reb, J., & Ang, D. (2012). More than just the mean: Moving to a dynamic view of performance-based compensation. *Journal of Applied Psychology, 97*, 711-718.
- Bassarak, C., Leib, M., Mischkowski, D., Strang, S., Glöckner, A., & Shalvi, S. (2017). What provides justification for cheating—producing or observing counterfactuals? *Journal of Behavioral Decision Making, 30*, 964-975.
- Carver, C. S., & Scheier, M. F. (1998). *On the self-regulation of behavior*. New York: Cambridge University Press.
- Chang, C.-H., Johnson, R. E., & Lord, R. G. (2010). Moving beyond discrepancies: The importance of velocity as a predictor of satisfaction and motivation. *Human Performance, 23*, 58-80.
- Chen, G., Ployhart, R. E., Thomas, H. C., Anderson, N., & Bliese, P. D. (2011). The power of momentum: A new model of dynamic relationships between job satisfaction change and turnover intentions. *Academy of Management Journal, 54*, 159-181.

- Covey, J., & Zhang, Q. (2014). The effect of dynamic proximity cues on counterfactual plausibility. *Judgment and Decision Making, 9*, 586-592.
- Diermeier, D. (2011). The cost of reputation: The impact of events on a company's financial performance. In A. Hiles (Ed.) *Reputation management, building and protecting your company's profile in a digital world* (pp. 153-162). London: Bloomsbury Publishing.
- Gerard, M. J., Armstrong, T. J., Martin, B. J., & Rempel, D. A. (2002). The effects of work pace on within-participant and between-participant keying force, electromyography, and fatigue. *Human factors, 44*, 51-61.
- Gevers, J., Mohammed, S., & Baytalskaya, N. (2015). The conceptualisation and measurement of pacing styles. *Applied Psychology, 64*, 499-540.
- Gevers, J.M.P., Rutte, C.G., & Van Eerde, W. (2006). Meeting deadlines in workgroups: Implicit and explicit mechanisms. *Applied Psychology: An International Review, 55*, 52-72.
- Healy, A. F., Kole, J. A., Buck-Gengler, C. J., & Bourne, L. E. (2004). Effects of prolonged work on data entry speed and accuracy. *Journal of Experimental Psychology: Applied, 10*, 188-199.
- Hotten, R. (2015, September 25). Volkswagen: The scandal explained. *BBC News*. Retrieved from <http://www.bbc.com/news/business-34324772>
- Howell, D. C. (2014). *Fundamental statistics for the behavioral sciences*. Independence, KY: Cengage Learning.
- Kahneman, D., & Varey, C. A. (1990). Propensities and counterfactuals: The loser that almost won. *Journal of Personality and Social Psychology, 59*, 1101-1110.

- Latham, G. P., & Baldes, J. J. (1975). The “practical significance” of Locke's theory of goal setting. *Journal of Applied Psychology, 60*, 122-124.
- Latham, G. P., & Kinne, S. B. (1974). Improving job performance through training in goal setting. *Journal of Applied Psychology, 59*, 187-191.
- Latham, G. P., & Locke, E. A. (1979). Goal setting—A motivational technique that works. *Organizational dynamics, 8*, 68-80.
- Latham, G. P., & Locke, E. A. (2006). Enhancing the benefits and overcoming the pitfalls of goal setting. *Organizational Dynamics, 35*, 332-340.
- Latham, G. P., & Locke, E. A. (2007). New developments in and directions for goal-setting research. *European Psychologist, 12*, 290-300.
- Latham, G. P., & Yukl, G. A. (1976). Effects of assigned and participative goal setting on performance and job satisfaction. *Journal of Applied Psychology, 61*, 166-171.
- Lipton, E. S., & Barboza, D. (2007, June 19). As more toys are recalled, trail ends in China. *The New York Times*. Retrieved from <http://www.nytimes.com/2007/06/19/business/worldbusiness/19toys.html>
- Locke, E. A. (1975). Personnel attitudes and motivation. *Annual review of psychology, 26*, 457-480.
- Locke, E. A., & Latham, G. P. (1990). *A theory of goal setting & task performance*. Englewood Cliffs, NJ: Prentice-Hall, Inc.
- Locke, E. A., & Latham, G. P. (2002). Building a practically useful theory of goal setting and task motivation: A 35-year odyssey. *American psychologist, 57*, 705-717.
- Locke, E. A., & Latham, G. P. (2009). Has goal setting gone wild, or have its attackers abandoned good scholarship? *The Academy of Management Perspectives, 23*, 17-23.

- Locke, E. A., Chah, D. O., Harrison, S., & Lustgarten, N. (1989). Separating the effects of goal specificity from goal level. *Organizational Behavior and Human Decision Processes*, *43*, 270-287.
- Mazar, N., Amir, O., & Ariely, D. (2008). The dishonesty of honest people: A theory of self-concept maintenance. *Journal of marketing research*, *45*, 633-644.
- Medvec, V. H., & Savitsky, K. (1997). When doing better means feeling worse: The effects of categorical cut off points on counterfactual thinking and satisfaction. *Journal of Personality and Social Psychology*, *72*, 1284-1296.
- Mento, A. J., Steel, R. P., & Karren, R. J. (1987). A meta-analytic study of the effects of goal setting on task performance: 1966–1984. *Organizational Behavior and Human Decision Processes*, *39*, 52-83.
- Norris, F. (1997, November 18). Bausch & Lomb and S.E.C. settle dispute on '93 profits. *The New York Times*. Retrieved from <http://www.nytimes.com/1997/11/18/business/bausch-lomb-and-sec-settle-dispute-on-93-profits.html>
- Ordóñez, L. D., Schweitzer, M. E., Galinsky, A. D., & Bazerman, M. H. (2009). Goals gone wild: The systematic side effects of overprescribing goal setting. *The Academy of Management Perspectives*, *23*, 6-16.
- Reb, J., & Cropanzano, R. (2007). Evaluating dynamic performance: The influence of salient Gestalt characteristics on performance ratings. *Journal of Applied Psychology*, *92*, 490-499.
- Reb, J., & Greguras, G. J. (2010). Understanding performance ratings: Dynamic performance, attributions, and rating purpose. *Journal of Applied Psychology*, *95*, 213-220.

- Redelmeier, D. A., & Kahneman, D. (1996). Patients' memories of painful medical treatments: Real-time and retrospective evaluations of two minimally invasive procedures. *Pain, 66*, 3-8.
- Roese, N. J. (1994). The functional basis of counterfactual thinking. *Journal of Personality and Social Psychology, 66*, 805-818.
- Roese, N. J. (1997). Counterfactual thinking. *Psychological bulletin, 121*, 133-148.
- Roese, N. J., & Olson, J. M. (2007). Better, stronger, faster: Self-serving judgment, affect regulation, and the optimal vigilance hypothesis. *Perspectives on Psychological Science, 2*, 124-141.
- Russell, T. L., Sparks, T. E., Campbell, J. P., Handy, K., Ramsberger, P., & Grand, J. A. (2017). Situating ethical behavior in the nomological network of job performance. *Journal of Business and Psychology, 32*, 253-271.
- Schweitzer, M. E., & Hsee, C. K. (2002). Stretching the truth: Elastic justification and motivated communication of uncertain information. *Journal of Risk and Uncertainty, 25*, 185-201.
- Schweitzer, M. E., Ordóñez, L., & Douma, B. (2004). Goal setting as a motivator of unethical behavior. *Academy of Management Journal, 47*, 422-432.
- Shalvi, S., Dana, J., Handgraaf, M. J., & De Dreu, C. K. (2011). Justified ethicality: Observing desired counterfactuals modifies ethical perceptions and behavior. *Organizational Behavior and Human Decision Processes, 115*, 181-190.
- Shalvi, S., Gino, F., Barkan, R., & Ayal, S. (2015). Self-serving justifications: Doing wrong and feeling moral. *Current Directions in Psychological Science, 24*, 125-130.

- Treviño, L. K., Weaver, G. R., & Reynolds, S. J. (2006). Behavioral ethics in organizations: A review. *Journal of management*, 32, 951-990.
- Turban, D. B., & Cable, D. M. (2003). Firm reputation and applicant pool characteristics. *Journal of Organizational Behavior*, 24, 733-751.
- Welsh, D. T., & Ordóñez, L. D. (2014a). Conscience without cognition: The effects of subconscious priming on ethical behavior. *Academy of Management Journal*, 57, 723–742.
- Welsh, D. T., & Ordóñez, L. D. (2014b). The dark side of consecutive high performance goals: Linking goal setting, depletion, and unethical behavior. *Organizational Behavior and Human Decision Processes*, 123, 79-89.
- West, L. J. (1969). Fatigue and performance variability among typists. *Journal of Applied Psychology*, 53, 80-86.
- Wood, R., & Bandura, A. (1989). Impact of conceptions of ability on self-regulatory mechanisms and complex decision making. *Journal of Personality and Social Psychology*, 56, 407-415.

Appendix A: Tables and Figures

Table 1

One-Sample t-tests Comparing Mean Difference Against Zero (Study 1)

	<i>n</i>	<i>Mean</i>	<i>t</i>	<i>d</i>
Small discrepancy / Decelerating trajectory	30	1.73	1.28	.23
Small discrepancy / Constant trajectory	30	4.44	3.28 **	.60
Large discrepancy / Decelerating trajectory	31	-.73	-.55	-.10
Large discrepancy / Constant trajectory	30	2.11	1.56	.28

Note . Mean = mean difference between self-reported number of boxes produced and the true value. Referent value = 0. $MS_{error} = 55.02$, $df = 117$. ** $p < .01$.

Table 2

One-Sample t-tests Comparing Mean Difference Against Zero (Study 2)

	<i>n</i>	<i>Mean</i>	<i>t</i>	<i>d</i>
Small discrepancy / Decelerating trajectory	47	1.64	1.41	.21
Small discrepancy / Constant trajectory	50	.18	.16	.02
Small discrepancy / Accelerating trajectory	42	3.46	2.83 **	.44
Large discrepancy / Decelerating trajectory	47	.80	.69	.10
Large discrepancy / Constant trajectory	46	2.55	2.18	.32
Large discrepancy / Accelerating trajectory	49	1.70	1.50	.21

Note . *Mean* = mean difference between self-reported number of boxes produced and the true value. Referent value = 0. $MS_{error} = 62.90$, $df = 275$. ** $p < .008$.

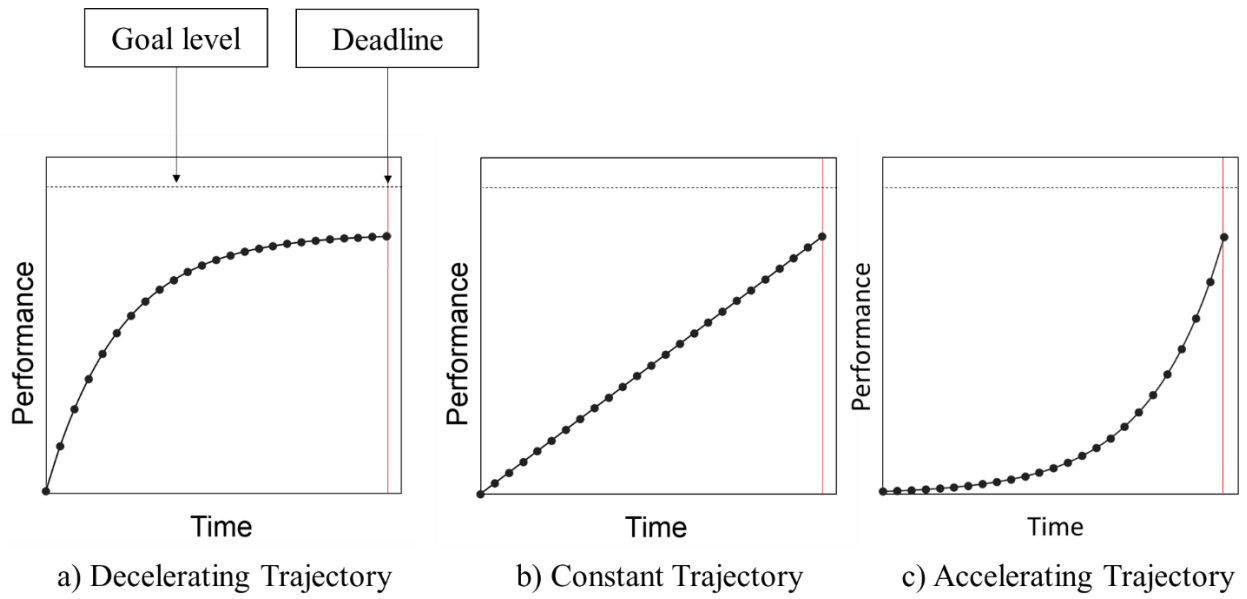


Figure 1. Decelerating, constant, and accelerating trajectory with the same discrepancy. The dotted line represents the goal level (e.g., number of tables that must be wiped) and the vertical line represents a deadline (e.g., complete the task by 12 p.m.).

Assigning the jobs

Assign one job per employee, and do not give the same job to more than one employee.

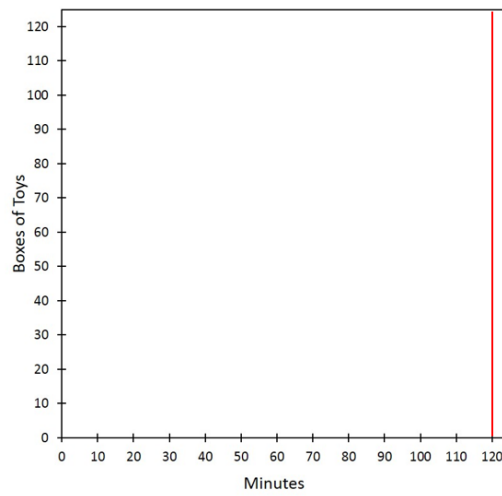
Click on the small circles to select a job for each of your employees.

	Adam	Ben	Charlie	Dan
Machine operation	High skill	Low skill	High skill	Moderate skill
Attention to detail	Good	Poor	Excellent	Poor
Working speed	Slow	Fast	Fast	Slow
Energy	Low	High	Low	High
Which job should he do? Click on the circle.	<input type="radio"/> Cutting the fabric <input type="radio"/> Machine-sewing parts <input checked="" type="radio"/> Stuffing the toys <input type="radio"/> Packaging for shipping	<input type="radio"/> Cutting the fabric <input checked="" type="radio"/> Machine-sewing parts <input type="radio"/> Stuffing the toys <input type="radio"/> Packaging for shipping	<input type="radio"/> Cutting the fabric <input type="radio"/> Machine-sewing parts <input type="radio"/> Stuffing the toys <input checked="" type="radio"/> Packaging for shipping	<input checked="" type="radio"/> Cutting the fabric <input type="radio"/> Machine-sewing parts <input type="radio"/> Stuffing the toys <input type="radio"/> Packaging for shipping

Figure 2. A screenshot of the job assignment page.

When you click start, the computer simulation will begin. Watch the simulation on the graph below.

Click Start when you are ready.



START

Figure 3. Screenshot of the first screen of the simulation output.

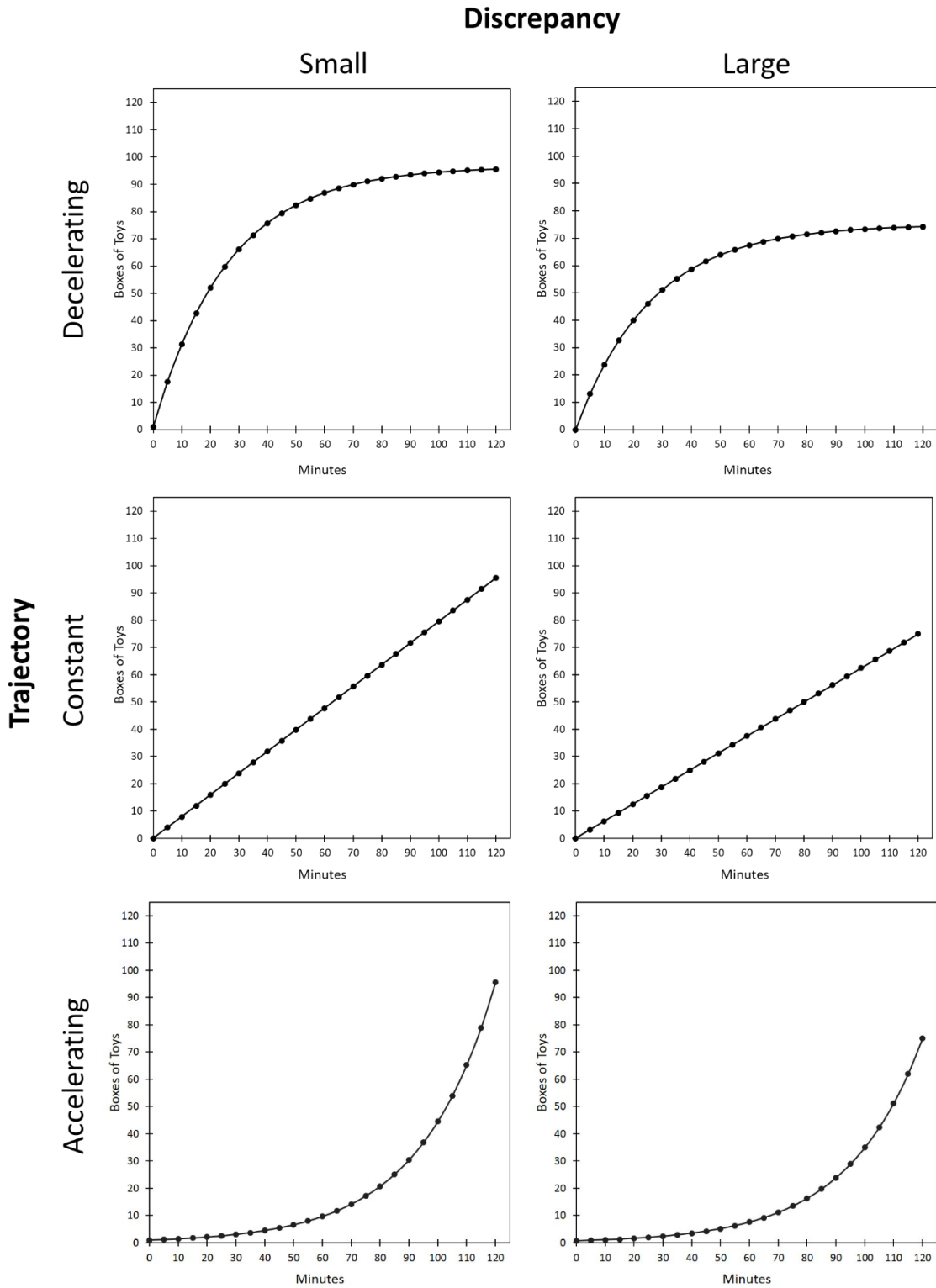


Figure 4. Manipulation graphs used for each condition. Study 1 used the constant and decelerating trajectory conditions. Study 2 included the accelerating trajectory conditions.

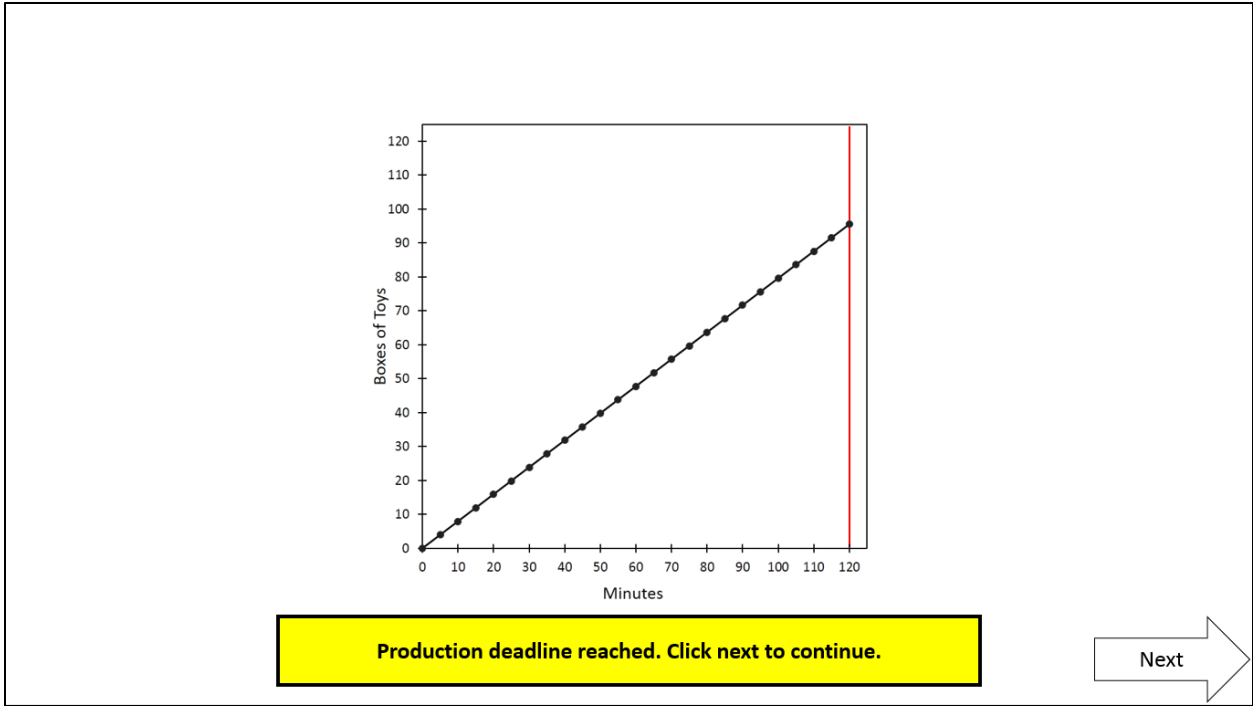


Figure 5. Sample final frame of the simulation for manipulating trajectory and discrepancy.

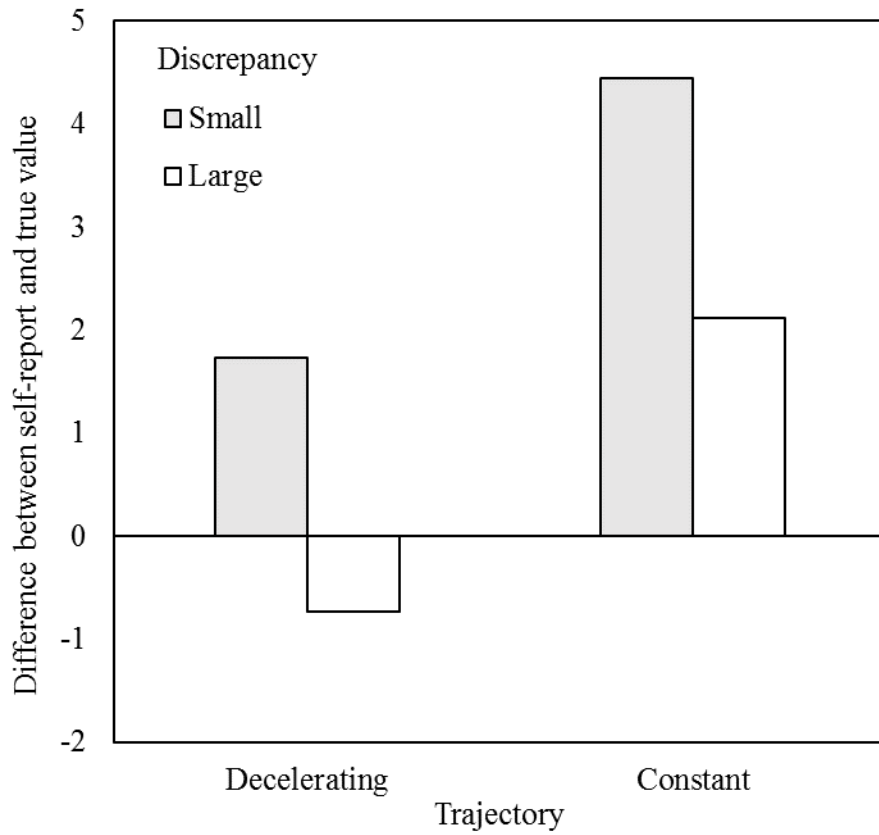


Figure 6. Mean difference between self-reported number of boxes produced and the true value by group (Study 1).

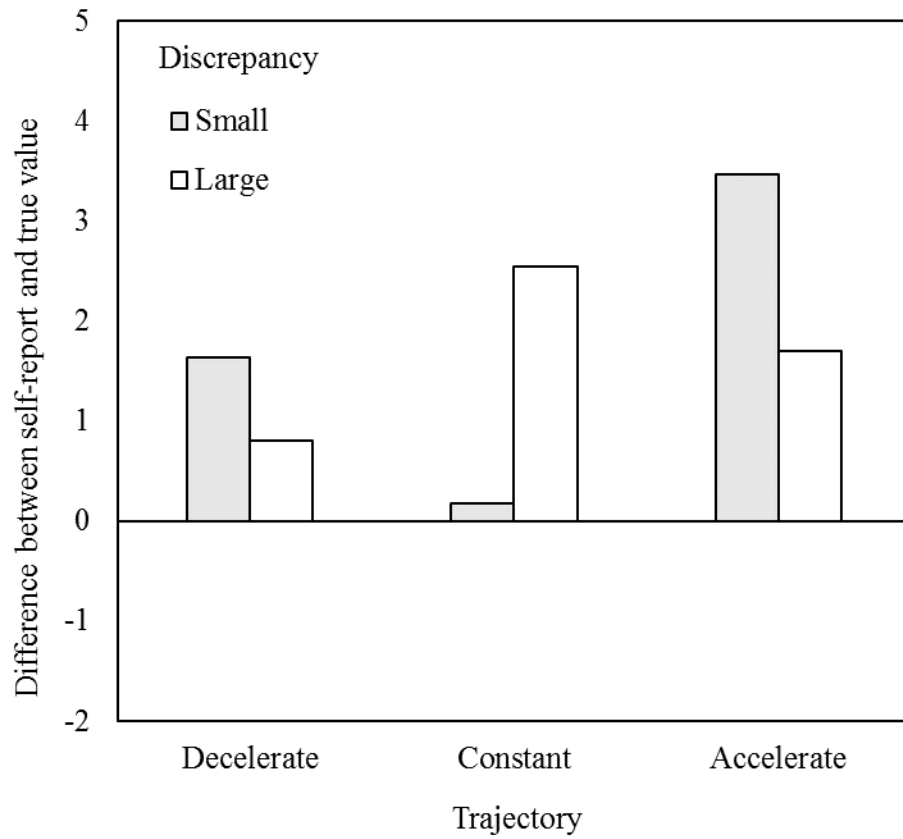


Figure 7. Mean difference between self-reported number of boxes produced and the true value by group (Study 2).