People Focus on Optimistic Scenarios and Disregard Pessimistic Scenarios While Predicting Task Completion Times

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Task completion plans normally resemble best-case scenarios and yield overly optimistic predictions of completion times. The authors induced participants to generate more pessimistic scenarios and examined completion predictions. Participants described a pessimistic scenario of task completion either alone or with an optimistic scenario. Pessimistic scenarios did not affect predictions or accuracy and were consistently rated less plausible than optimistic scenarios (Experiments 1–3). Experiment 4 independently manipulated scenario plausibility and optimism. Plausibility moderated the impact of optimistic, but not pessimistic, scenarios. Experiment 5 supported a motivational explanation of the tendency to disregard pessimistic scenarios regardless of their plausibility. People took pessimistic scenarios into account when predicting someone else's completion times. The authors conclude that pessimistic-scenario generation may not be an effective debiasing technique for personal predictions.

At one time or another, many of us have smirked while passing a vacant lot with a weather-beaten sign announcing that a new supermarket will be "Opening Soon!" Such unwarranted optimism also pervades people's predictions of their task completion times. People tend to underestimate how long they will take to finish academic, household, and laboratory tasks (Buehler, Griffin, & MacDonald, 1997; Buehler, Griffin, & Ross, 1994; Byram, 1997). The goal of the present research was to examine the bases of people's overly optimistic forecasts, with a view to encouraging less optimistic and possibly more accurate predictions.

People often base their predictions on scenarios that depict the progression of the present to the future (Buehler et al., 1994; Buehler, Griffin, & Ross, 1995; Griffin, Dunning, & Ross, 1990; Kahneman & Tversky, 1982; Klayman & Schoemaker, 1993). Several lines of research suggest that such scenario thinking may contribute to overly confident and optimistic predictions. First,

although the future is almost always uncertain, people typically generate only a single or very limited number of scenarios (Griffin et al., 1990). Second, people generate scenarios that reflect their hopes and preferences. For example, when reporting scenarios about task completion, people focus on how they will successfully accomplish their objectives; they generally fail to consider the possibility of setbacks or delays (Buehler et al., 1994). Third, there is evidence that the content of scenarios affects people's beliefs about the future. When individuals are instructed to imagine or explain the occurrence of a particular event, they become more convinced that it will occur (Koehler, 1991).

If people are unrealistically confident and optimistic because they generate a single, hopeful portrayal of the future, the cure seems obvious: Encourage individuals to think about possible futures that differ from the ones that they most prefer. People may then conclude that the future is more uncertain than they had imagined and form less optimistic, and possibly more accurate, forecasts. Such a strategy could prove ineffective, however, if predictors are motivated to perceive their futures in a positive light and consequently view negative futures as implausible and unworthy of serious consideration. Thus, it is not self-evident that asking individuals to consider alternative futures would be an effective debiasing technique.

Past research on the impact of contemplating alternative outcomes is equivocal. Byram (1997) varied whether participants first reported a pessimistic or optimistic prediction before estimating when they would actually complete a task. This manipulation had no effect on people's forecasts or accuracy. Research investigating the influence of prompted generation of reasons for or against a favored hypothesis has also produced mixed results. In their first experiment, Koriat, Lichtenstein, and Fischhoff (1980) found that individuals who generated reasons both for and against their hypothesis exhibited less overconfidence than participants in a no-

reasons control condition. However, in their second experiment, this effect was not obtained. The second experiment also included conditions in which participants generated reasons either for or against their hypothesis. In this study and in subsequent research (e.g., Hoch, 1985), generation of reasons against rather than for the favored hypothesis had a greater impact on confidence. These findings suggest that in the absence of prompting, people may be disinclined to consider evidence that undermines a favored hypothesis.

A more popular approach involves asking people to consider alternative scenarios for the future, not simply different predictions or reasons. Asking people to contemplate more than one possible future scenario can lower (Dougherty, Gettys, & Thomas, 1997; Griffin et al., 1990; Schoemaker, 1993) or increase (Kuhn & Sniezek, 1996; Schnaars & Topol, 1987) their confidence in the predictions they subsequently generate. Researchers who found that alternative scenarios increased people's confidence in their forecasts presented scenarios to participants. In contrast, those who demonstrated a reduction of confidence required participants to generate their own scenarios. Conceivably, people find alternative self-generated scenarios to be more plausible and relevant to their individual concerns than those provided by a researcher. There is even less research assessing the impact of multiple scenarios on accuracy than there is on confidence, and again the evidence is mixed. The generation of alternative scenarios may increase prediction accuracy (Buehler et al., 1994, Study 4), decrease prediction accuracy (Wilson & LaFleur, 1995), or have no impact (Schnaars & Topol, 1987; Schoemaker, 1993).

Researchers have tended to examine the effect of alternative scenarios on people's confidence in their original optimistic forecasts. Rather than investigate confidence judgments, we studied the effects of alternative scenarios on the optimism and accuracy of predictions of task completion time. Although confidence is important, it is perhaps even more critical to know whether participants alter their predictions after generating alternative scenarios and, if so, whether their new predictions are more accurate. We targeted predictions of task completion for several reasons: (a) People's completion time estimates tend to be based on a single overly optimistic scenario (Buehler et al., 1994); (b) previous researchers have found it difficult to eliminate optimistic biases in completion time estimates (Buehler et al., 1994; Byram, 1997), but there are no published studies in this domain in which scenario generation, per se, is used as a debiasing procedure;[1] (c) underestimating task completion times can have important practical implications; and (d) the effectiveness of debiasing procedures can be readily determined by comparing people's predictions with their completion times.

Like many but not all real-world projects, the tasks we studied had externally imposed deadlines. A cynic might propose that deadlines predict completion times better than people's own forecasts. Although people's forecasts are correlated with deadlines, the relation is less than perfect (Buehler et al., 1994). We investigated whether individuals' predictions or deadlines are more strongly associated with completion times.

Overview of the Experiments

We asked participants to generate various kinds of scenarios for task completion. Subsequent to scenario generation, we elicited two kinds of predictions. Participants reported scenario predictions based on the premise that a specific scenario was completely accurate. They also reported final predictions that reflected their actual beliefs. Experiment 1 compared people's realistic scenarios for task completion with best- and worst-case scenarios. Experiments 2 and 3 examined the impact of multiple scenario generation on the optimism and accuracy of participants' final predictions. In Experiment 2, we asked participants to generate three different scenarios before they reported a final prediction. We anticipated that these scenarios would differ in optimism and assessed the degree to which final predictions appear to be influenced by self-generated favorable and unfavorable scenarios. Experiment 3 examined whether scenario optimism or scenario primacy more strongly influenced individuals' final predictions. Experiment 4 examined whether scenario plausibility moderated the impact of pessimistic and optimistic scenarios on people's final predictions. Experiment 5 investigated whether the predictions of neutral observers were influenced by the same factors that affected the predictions of involved participants.

Experiment 1

Participants were asked to generate one of three descriptions of how they would complete a school assignment: a best-case, worst-case, or realistic scenario. They supplied a scenario prediction followed by a final prediction. We expected the content of the scenarios, the scenario predictions, and the final predictions of participants in the realistic-scenario condition to resemble those of participants in the best-case scenario condition. This finding would indicate both that people are highly optimistic and that they typically believe their optimism is warranted. We also expected scenario and final predictions to be virtually identical in the best-case and realistic conditions because both are derived from the scenario. We expected participants in the worst-case scenario condition to generate a more pessimistic scenario and a more pessimistic-scenario prediction than participants in the other two conditions. A worst-case scenario should serve to remind participants that there are, in principle, obstacles standing in the way of task completion. As a result, participants in the worst-case scenario condition may report less hopeful final predictions than participants in the remaining conditions. Finally, we asked participants to evaluate the plausibility of their scenarios. To assess the objectivity of these plausibility ratings, we also had outside raters judge the plausibility of the scenarios.

Method

Participants. Eighty-one undergraduate students (31 men and 50 women) received course credit for their participation. The data from 3

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[1] Buehler et al. (1994, Study 4) met with some success in debiasing predictions of task completion through the generation of pessimistic scenarios. Participants were instructed to indicate when they would finish their task if it was completed when they typically completed similar tasks. Also, they were instructed to construct a scenario, on the basis of previous experience, in which they completed their task at the typical time. It is not clear whether debiasing was achieved because participants were enjoined to pay attention to their past behavior and/or because they constructed an alternative scenario. Thus, the effects of scenario generation, per se, on subsequent prediction of task completion remains at issue.

Table 1

Scenario Content, Predictions, Actual Completion Times, and Plausibility Ratings as a Function of Scenario Condition (Experiment 1)

| | Scenario condition | | | | | |
| | Realistic | | Best case | | Worst case | |
Measure	M	SD	M	SD	M	SD
Optimism ratings	7.36[a]	1.15	8.47[b]	0.58	2.65[c]	1.40
No. of future problems	0.48[a]	0.75	0.13[a]	0.34	5.85[b]	2.74
Scenario predictions	1.43[a]	1.66	2.37[a]	1.88	−0.74[b]	1.42
Final predictions	1.06[a]	1.73	1.51[a]	1.66	1.37[a]	1.54
Actual completion times	0.32[a]	1.99	−0.50[a]	3.91	0.11[a]	3.75
Plausibility evaluations						
Participants	8.63[a]	1.50	7.38[a]	2.12	4.22[b]	2.89
Raters	7.34[a]	0.62	6.92[a]	0.73	5.22[b]	2.13

Note. Predictions and completion times are expressed as days before deadline. Means in the same row that do not share a common superscript differ at the .05 level according to Fisher's least significant difference.

participants were excluded because they did not follow experimental instructions. For analyses not involving completion times, data from the remaining 78 participants were used. Completion time data could not be obtained for 3 participants. Analyses involving completion time data were conducted on the remaining 75 participants.

Procedure. Participants identified an assignment due within the subsequent 3 weeks and then wrote a scenario about its completion. They described, in detail, how they would complete the assignment. They were told to include some explanation of the steps that they would take to complete the assignment, as well as any factors that may be relevant to their completion time. Participants were randomly assigned to write either a best-case scenario, a worst-case scenario, or a realistic scenario. In writing the best-case scenario (worst-case scenario), participants were to assume that "things will go as well as they possibly can (things will go as poorly as they possibly can)." For the realistic scenario condition, participants were to describe "a future scenario of how the assignment will be completed." After writing the scenario, participants indicated when they would complete the assignment (date and time) if the events unfolded as in the scenario (scenario prediction). They then predicted when they would actually complete their assignment (final prediction) and rated the plausibility of the scenario on an 11-point scale (0 = *not at all plausible* and 10 = *extremely plausible*). Participants also indicated when their assignment was due. After they completed all experimental materials, participants were informed that we would request completion time information at a later date. A few days after the due date, participants were contacted by telephone and asked when they had completed their assignment.

Four raters assessed the optimism and plausibility of all of the scenarios on 10-point scales (1 = *not at all* and 10 = *extremely*). Agreement among the raters was high for both scales (α = .93 for optimism and α = .88 for plausibility); their ratings were averaged for the purpose of analysis.

Using a coding scheme devised by Buehler et al. (1994), we categorized statements in each of the three scenarios according to whether participants mentioned future plans or problems. *Future plans* refer to behaviors or events that promote goal attainment (e.g., "go to the computer lab and run an analysis"), and *future problems* refer to actions or events that hinder completion of a task (e.g., "computer crashes, resulting in loss of all data"). A second coder agreed with the first on 88% of the statements. In this and subsequent experiments, raters and coders were kept naive to the experimental design and condition, the instructions to participants, and the scenario predictions.

Results and Discussion

In all of the experiments, time-related data (scenario predictions, final predictions, and actual completion times) were submitted to a square-root transformation prior to analysis because the data were skewed. Also, participant gender was included in all of the analyses reported and did not qualify any of the findings. Multiple comparisons reported in all experiments are based on Fisher's least significant difference (LSD), with alpha set at .05.

Scenario content.[2] An analysis of the raters' optimism assessments indicated a significant effect for scenario condition, $F(2, 72) = 204.30$, $MSE = 1.19$, $p < .001$. Although all means were significantly different from each other, realistic scenarios were rated as much more similar to best-case scenarios than worst-case scenarios (see Table 1). We analyzed the number of statements coded as future problems while controlling for scenario length (i.e., number of words). A significant effect for scenario condition, $F(2, 71) = 67.72$, $MSE = 2.50$, $p < .001$, revealed more mentions of future problems in the worst-case scenario condition than in the realistic and best-case conditions, which did not differ significantly (see Table 1). The results for future plans were the exact reverse of future problems.

Predictions. Each participant's scenario prediction was scored in terms of the number of days, or portion of days, that it preceded the due date. An analysis of variance (ANOVA) revealed a significant effect for scenario condition, $F(2, 72) = 41.96$, $MSE = 0.53$, $p < .001$. Predictions based on best-case and realistic scenarios were not significantly different and were more optimistic than predictions based on worst-case scenarios (see Table 1). Final predictions were not affected by scenario condition, $F(2, 72) = 1.13$, $MSE = 0.41$, $p = .33$.

Relation of scenario predictions to final predictions. As expected, we obtained a greater correspondence between scenario and final predictions in the best-case, $r(19) = .89$, $p < .001$, and

[2] In all experiments, scenario length was analyzed. Participants wrote more words for the first scenario they generated, and they wrote more words for negative scenarios.

realistic, $r(25) = .79$, $p < .001$, conditions than in the worst-case condition, $r(25) = .44$, $p = .02$ (both zs > 2.00, both ps $< .025$). At the mean level, scenario predictions for both best-case and realistic scenarios were significantly earlier than final predictions (both ts > 3.10, both ps $< .01$).[3] For worst-case scenarios, scenario predictions were significantly later than final predictions, $t(26) = 8.28$, $p < .001$. An ANOVA revealed a significant effect for the magnitude of these mean differences (ignoring direction), $F(2, 72) = 46.42$, $MSE = 0.29$, $p < .001$. Fisher's LSD (at .05) revealed that the absolute mean difference between participants' worst-case scenario predictions and final predictions was larger than the differences for the other two conditions.

Plausibility. Both participants' and outside raters' plausibility ratings revealed that worst-case scenarios were judged to be less plausible than best-case or realistic scenarios, $F(2, 72) = 23.31$, $MSE = 5.26$, $p < .001$, and $F(2, 72) = 13.21$, $MSE = 1.89$, $p < .001$, respectively (see Table 1).

Accuracy of final predictions. Participants completed their tasks at approximately the same time, regardless of which scenario they wrote ($F < 1$). To assess the accuracy of participants' final predictions, we conducted a Bias (final prediction vs. actual completion time) × Scenario Condition (best case, worst case, or realistic) mixed ANOVA. This analysis revealed only a main effect for bias, $F(2, 69) = 18.73$, $MSE = 0.78$, $p < .001$. Participants' mean prediction was 1.35 days before deadline, and their mean completion time was 0.01 days before deadline. Sixty-seven percent of participants completed their assignments later than they predicted. No participants anticipated finishing past the deadline and 15 (20%) actually did. These two proportions were significantly different ($p < .001$).

Accuracy of scenario predictions. Scenario predictions were optimistically biased in the best-case condition, $t(20) = 3.49$, $p = .002$, and realistic condition, $t(26) = 3.16$, $p = .004$ (see Table 1). Scenario predictions were pessimistically biased in the worst-case condition, $t(26) = 3.38$, $p = .002$ (see Table 1). We reversed the direction of the differences in the worst-case condition and performed an ANOVA on the magnitude of the biases. There was no significant effect of scenario condition, $F(2, 69) = 1.31$, $MSE = 1.72$, $p = .28$. Worst-case scenario predictions were as (in)accurate as best-case and realistic case scenario predictions.

Deadlines. Finally, we examined whether deadlines provided a more accurate indication of completion times than participants' own forecasts. At the mean level, the results were equivocal. Although participants' deadlines were slightly closer to their actual completion times than were their final predictions, the difference was not significant, $t(74) = 1.08$, $p = .29$. A regression analysis was conducted with actual completion times as the criterion and final predictions and deadlines entered simultaneously as independent variables. Only participants' final predictions accounted for a significant amount of variance in actual completion times, $\beta = .76$, $t(71) = 3.73$, $p < .001$; for deadlines, $\beta = .24$, $t(71) = 1.21$, $p = .23$.

Summary. The results of Experiment 1 yield five major conclusions. First, people's realistic scenarios resembled best-case scenarios and both were quite different from worst-case scenarios. Second, people's final predictions were unaffected by the type of scenario they wrote. When they reported their final predictions, participants tended to disregard worst-case scenarios. Third, participants' actual completion times were unaffected by scenario

condition. Fourth, participants' final predictions were optimistically biased in all conditions, and the degree of bias was unaltered by scenario condition. Finally, the plausibility ratings provide a possible explanation for the lack of impact of scenario condition. Participants wrote worst-case scenarios that they and others judged to be implausible. Participants may have felt justified in disregarding implausible worst-case scenarios.

Experiment 2

Perhaps negative scenarios would be judged to be more plausible (and therefore influence task completion time estimates) if individuals generated the scenarios spontaneously rather than in response to an experimental requirement to write a worst-case description. In Experiment 2, participants described three different scenarios for how they would complete a school assignment. The only experimental requirement was that the second scenario be different from the first and the third be different from the other two. In principle, participants were free to write second and third scenarios that were even more optimistic than their initial scenarios. We expected their initial scenarios to be the most hopeful, however, on the basis of the evidence from Experiment 1 that people's idea of a realistic scenario is most similar to a best-case scenario. We expected the subsequent alternative scenarios to include more potential obstacles to early completion of a project. The predictions associated with each scenario should reflect the differing content of the scenarios. Our primary interest is a comparison of the scenario predictions and the final predictions. Will the final predictions be most similar to the optimistic predictions associated with the initial scenarios? Or, will they be most similar to the more pessimistic predictions associated with the second and third scenarios? Because they generate the more pessimistic scenarios on their own without any explicit requirement to do so and because these scenarios are not necessarily as extreme as a worst-case scenario, participants may view them to be relatively plausible and use them when formulating predictions. However, if participants can spontaneously imagine only one credible version of the future (Griffin et al., 1990), then subsequent negative scenarios should have little influence on final predictions.

Method

Participants. In exchange for course credit, 109 undergraduates (38 men and 71 women) filled out a questionnaire about an upcoming assignment. Two participants failed to follow experimental instructions, and their data were excluded. We were unable to obtain assignment completion time information for an additional 15 participants. All analyses not involving actual completion times were conducted using the data of 107 participants; analyses involving completion times were conducted using the data of the 92 participants for whom we had completion time information.

Procedure. Participants identified a school assignment due in the subsequent 3 weeks. They were then instructed to "describe, in your own words when, where, and how you will complete the assignment." After writing the scenario, participants were asked to indicate, on the basis of the

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[3] The scenario and final predictions of the majority of participants (81%) in the realistic scenario condition did not differ by more than 1 day. The prediction type effect was significant for the 5 participants with more than 1 day's difference, $t(4) = 2.89$, $p = .04$, but not for the other 22 participants, $t(21) = 1.50$, $p = .15$.

Table 2

Scenario Content, Predictions, and Plausibility Ratings as a Function of Scenario Number (Experiment 2)

| | Scenario number | | | | | |
| | One | | Two | | Three | |
Measure	M	SD	M	SD	M	SD
Optimism ratings	7.41[a]	1.58	5.38[b]	2.14	5.39[b]	2.37
No. of future problems	0.97[a]	1.30	1.88[b]	1.75	1.75[b]	2.13
Scenario predictions	1.87[a]	2.68	1.66[a]	3.14	0.88[b]	5.63
Plausibility evaluations						
Participants	7.97[a]	2.24	4.94[b]	2.62	3.03[c]	2.74
Raters	7.52[a]	0.67	6.23[b]	1.08	5.58[c]	1.39

Note. Scenario predictions are expressed as days before deadline. Means in the same row that do not share a common superscript differ at the .05 level according to Fisher's least significant difference.

contents of the scenario, when they would complete their assignment (scenario predictions). Next, they were asked to "imagine that the scenario you have just written out *did not* occur in the way that you described. Please take a few minutes and think about ways in which the scenario might turn out differently." Following this, participants were instructed to "describe these new circumstances and when, where, and how you would complete the assignment." They indicated when they would complete the assignment if the future occurred as described in their second scenario. Participants were then instructed to "imagine that *neither one* of the scenarios you have just written out occurred in the way you described." They then wrote the third scenario and supplied a prediction on the basis of that scenario. When writing a first or second scenario, participants did not know they would be asked for additional scenarios.

After generating three scenarios and associated predictions, participants predicted when they would actually complete the assignment. Next, participants rated the plausibility of each scenario on an 11-point scale (see Experiment 1). A few days after the due date of their assignment, participants were contacted by telephone and were asked when they had completed their assignment.

Four raters evaluated the optimism and plausibility of all the scenarios on 10-point scales (see Experiment 1). The scenarios were presented to them in a random order. Interrater agreement was high for ratings of optimism ($\alpha = .89$) but relatively low for ratings of plausibility ($\alpha = .57$). Raters' responses were averaged for purposes of analysis. We again categorized statements in each of the three scenarios according to whether participants mentioned future plans or future problems. A second rater coded 50% of the scenarios, and an agreement rate of 88% was obtained.

Results and Discussion

Scenario content and predictions. Raters judged the first scenarios to be more optimistic than the second and third, which did not differ, $F(2, 210) = 29.35$, $MSE = 4.30$, $p < .001$ (see Table 2). An analysis of future problems mentioned in each scenario, controlling for the number of words in a scenario, also revealed a significant effect for scenario number, $F(2, 209) = 14.81$, $MSE = 2.72$, $p < .001$. Fewer future problems were reported in the first scenario than in the second and third, which did not differ significantly. It is important to note that even in the second and third scenarios, the number of problems reported was considerably lower than in Experiment 1 worst-case scenarios (see Table 2; cf. Table 1).

An analysis of participants' scenario predictions revealed a significant effect for scenario number, $F(2, 210) = 8.42$,

$MSE = 1.32$, $p < .001$. Predictions based on the first and second scenarios were significantly more optimistic than those based on the third scenario (see Table 2).[4]

Relation of scenario predictions to final predictions. A regression analysis, in which final prediction was the criterion and the three scenario predictions were entered simultaneously, revealed that only the completion time associated with the first scenario accounted for a significant amount of variance, $\beta = .87$, $t(99) = 12.64$, $p < .001$. The first scenario that participants generated was most strongly related to their final predictions. A similar finding is evident at the mean level when scenario predictions are compared to final predictions ($M = 1.73$ days before deadline). There were no significant differences between the first and second scenario predictions and the final prediction (both $ts < 1.50$, both $ps > .10$). In contrast, final predictions were significantly earlier than third scenario predictions, $t(106) = 3.51$, $p < .001$.

Plausibility. Predictors and outside raters judged the first scenarios to be more plausible than the second and both, in turn, were judged to be more plausible than the third, $F(2, 210) = 92.41$, $MSE = 6.79$, $p < .001$; $F(2, 210) = 100.30$, $MSE = 1.00$, $p < .001$, respectively (see Table 2).

Accuracy. The final prediction made by participants was meant to reflect their best guess as to when they would finish the task. On average, these final predictions ($M = 1.79$ days before deadline) were too optimistic (actual completion $M = 0.98$ days before deadline), $t(91) = 3.61$, $p < .001$. Fifty percent of participants completed their assignments later than they predicted in their best guesses. Although only one participant (1%) predicted finishing past deadline, 13 (14%) actually did so, $p = .002$.

We assessed the accuracy of scenario predictions by comparing them to participants' actual completion times. First scenario predictions ($M = 1.84$ days before deadline) were significantly optimistically biased, $t(91) = 3.54$, $p < .001$, but second ($M = 1.59$)

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[4] Participants reported more problems in the second scenario than in the first scenario but did not significantly alter their scenario predictions. Perhaps predictors anticipated lowering the quality of their work in the face of increased obstacles and, thus, did not increase the length of time they expected to take. We thank an anonymous reviewer for this observation.

and third ($M = 0.94$) scenario predictions were not (both ts < 1.50, both ps $> .15$). In contrast to Experiment 1, then, participants' accuracy in prediction would have been enhanced had they attended to their more pessimistic scenarios.

Would participants have been more accurate in their forecasts if they had predicted they would finish at the deadline? As in Experiment 1, participants' final forecasts and deadlines were, on average, about equidistant from their actual completion times, $t(91) = 0.34$, $p = .74$. A regression analysis revealed that both final forecasts ($\beta = .80$) and deadlines ($\beta = .23$) accounted for unique variance in completion times (ts > 2.06, ps $< .05$). Although the magnitude of the betas was almost identical to that of Experiment 1, the beta for deadlines attained significance, perhaps because of the larger N in Experiment 2.

Experiment 3

The evidence from Experiments 1 and 2 indicates that participants disregarded pessimistic scenarios when forming predictions either alone or in combination with optimistic scenarios. Before concluding that pessimistic scenarios have no impact when combined with optimistic scenarios, however, we need to examine the order in which the scenarios are generated. There is evidence for primacy effects in the prediction literature (Koehler, 1991). Conceivably, the more pessimistic scenarios were disregarded in Experiment 2 because they followed rather than preceded the optimistic scenarios. To give multiple scenario generation a thorough test in Experiment 3, we varied the order in which participants generated optimistic and pessimistic scenarios. We also included a no-scenario control condition to compare the predictions that participants offered after they wrote multiple scenarios with those reported in the absence of an explicit requirement to generate scenarios.

In Experiment 3, we asked participants to generate best- and worst-case scenarios. We returned to the use of worst-case scenarios for three reasons. First, we obtained no evidence in Experiment 2 that participants were any more responsive to less extreme, pessimistic scenarios. Second, by specifying that participants write worst-case scenarios, we gained greater control over the type of scenario generated and were able to independently vary scenario content and order. Third, advocates of multiple scenario generation frequently argue the merits of considering worst-case scenarios (e.g., Bunn & Salo, 1993).

If the scenarios generated first have more impact on individuals' predictions, then participants in the worst-case–best-case condition should supply less optimistic predictions than those in the best-case–worst-case condition. In contrast, if individuals simply disregard worst-case scenarios in favor of best-case scenarios when forming predictions, then order should be unimportant.

Method

Participants. One hundred undergraduates (45 men and 55 women) received $5.00 for their participation. One participant was excluded because of failure to follow experimental instructions. Of the 99 remaining participants, we were unable to obtain completion time data for 14 of them. They were excluded from analyses involving completion times.

Procedure. Participants were asked to identify an assignment due within the subsequent 3 weeks. Next, they were randomly assigned to one of three conditions. Participants in the best-case–worst-case condition

wrote a best-case scenario followed by a worst-case scenario, and those in the worst-case–best-case condition generated scenarios in the opposite order. The instructions for scenario generation were the same as those in Experiment 1. While generating the first scenario, participants were not aware they would be generating a second. After writing each scenario, participants predicted when they would complete the assignment if events transpired as depicted in the scenario (scenario prediction). After writing both scenarios, participants in the experimental conditions were asked to predict, as accurately as possible, when they would actually complete the assignment (final prediction). They then assessed the plausibility of each scenario on an 11-point scale (see Experiment 1). Participants in the control condition only made the final prediction and did not write scenarios. All participants were telephoned within a day or two following the due date of their assignment and were asked when they completed it. Finally, five raters assessed the degree of optimism and plausibility of the scenarios on 10-point scales (see Experiment 1). The scenarios were presented in a random order, and raters were unaware of participants' predictions. Interrater agreement was satisfactory ($\alpha = .81$ for optimism and $\alpha = .83$ for plausibility); raters' responses were averaged for purposes of analysis.

Results and Discussion

Scenario optimism and predictions. A Scenario Type × Scenario Order analysis revealed that raters judged best-case scenarios to be more optimistic ($M = 8.54$) than worst-case scenarios ($M = 3.96$), $F(1, 62) = 402.50$, $MSE = 1.65$, $p < .001$. Reflecting the optimism ratings, an ANOVA performed on the scenario predictions revealed a main effect for scenario type, $F(1, 62) = 131.90$, $MSE = 0.32$, $p < .001$ (see Table 3). Best-case scenario predictions were earlier than worst-case scenario predictions ($M = 2.86$ vs. 0.38 days before deadline).

Final predictions. Participants' final predictions did not differ significantly across conditions ($F < 1$). We conducted a regression analysis to assess the relative impact of scenario optimism and scenario order on final predictions. We created a contrast coded variable to represent the scenario order variable (best-case–worst-case = 1, worst-case–best-case = −1) and put best-case scenario predictions and worst-case scenario predictions into deviation score form (i.e., we "centered" the variables; Aiken & West, 1991). With participants' final predictions as the criterion, we simultaneously entered (a) both scenario predictions, (b) the scenario order variable, (c) the interaction between the scenario order variable and best-case scenario prediction, and (d) the interaction between the scenario order variable and worst-case scenario prediction. Best-case scenario predictions accounted for a significant amount of variance in final predictions, $\beta = .75$, $t(54) = 7.78$, $p < .001$, and there was a significant nonqualifying interaction between scenario condition and best-case scenario completion time, $\beta = .31$, $t(54) = 3.23$, $p = .002$. There was a comparatively stronger relation between best-case scenario predictions and final predictions in the best-case–worst-case condition, $\beta = .70$, $t(31) = 6.39$, $p < .001$, than in the worst-case–best-case condition, $\beta = .63$, $t(29) = 3.91$, $p < .001$. Worst-case scenario predictions, and their interaction with order, did not account for a significant amount of unique variance in final predictions (ts < 1.60, ps $> .10$).

Plausibility. Predictors and outside raters judged best-case scenarios to be more plausible ($M = 6.17$ for predictors and $M = 7.07$ for raters) than worst-case scenarios ($M = 4.99$ for predictors and $M = 5.89$ for raters), $F(1, 62) = 4.77$, $MSE = 8.76$, $p = .03$; $F(1, 62) = 42.45$, $MSE = 0.79$, $p < .001$, respectively. In addition, predictors and raters judged scenarios from the best-

Table 3

Predictions and Actual Completion Times as a Function of Scenario Condition (Experiment 3)

| | Scenario condition | | | | | |
| | Best case–worst case | | Worst case–best case | | No-scenario control | |
Measure	M	SD	M	SD	M	SD
Scenario prediction						
Best case	2.33	2.45	3.42	3.73		
Worst case	0.66	1.63	0.07	1.06		
Final prediction	1.95[a]	3.44	1.17[a]	1.57	2.01[a]	3.72
Actual completion time	1.03[a]	2.56	0.32[a]	2.32	0.77[a]	3.91

Note. Predictions and actual completion times are expressed as days before deadline. For the last two rows, means in the same row that do not share a common superscript differ at the .05 level according to Fisher's least significant difference.

case–worst-case condition to be more plausible (M = 5.90 for predictors and M = 7.17 for raters) than scenarios from the worst-case–best-case condition (M = 5.23 for predictors and M = 5.85 for raters), $F(1, 62) = 4.28, MSE = 3.00, p = .04; F(1, 62) = 25.29, MSE = 1.58, p < .001$, respectively.

Accuracy. Participants' completion times failed to show any effects of experimental condition ($F < 1$). A Bias (predicted vs. actual completion time) × Scenario Condition (control, best-case–worst-case, worst-case–best-case) mixed ANOVA revealed only a significant effect for bias, $F(1, 80) = 21.16, MSE = 0.59, p < .001$. On average, participants predicted that they would complete their assignments 1.83 days before deadline and actually finished their assignments less than a day before deadline (M = 0.70). A majority of participants (56%) completed their assignments later than they predicted. One participant predicted finishing past deadline and 15 people (17%) did so ($p < .001$).

In comparison with actual completion times, participants' best-case scenario predictions (M = 3.04) were significantly optimistic, $t(57) = 6.27, p < .001$, whereas their worst-case scenario predictions (M = 0.38) were marginally pessimistic, $t(57) = 1.84, p = .07$. A Scenario Type × Scenario Order ANOVA on the magnitudes of the biases (ignoring direction) revealed a significant effect for scenario order, $F(1, 54) = 7.71, MSE = 0.33, p = 008$, indicating that the magnitude of both scenario prediction biases was larger in the worst-case–best-case condition (M = 1.74) than the best-case–worst-case condition (M = 0.89). There was also a significant effect for scenario type, $F(1, 54) = 5.74, MSE = 2.29, p = .02$. As in Experiment 2, pessimistic scenarios produced more accurate predictions than optimistic scenarios.

Finally, participants would not have been more accurate if they had simply predicted that they would finish their assignment at the deadline. Participants' actual completion times were equidistant from their final predictions and deadlines, $t(85) = 0.12, p = .91$. In this study, final predictions (β = .55) and deadlines (β = .41) accounted for similar amounts of unique variance in actual completion times ($ts > 4.73, ps < .001$).

Summary. Participants appeared to disregard pessimistic scenarios when forming their final predictions, regardless of whether worst-case scenarios followed or preceded best-case scenarios. There was also no effect of scenario order on prediction accuracy, and neither combination of best-case–worst-case scenarios yielded

predictions that differed in accuracy from the no scenario control condition. As in previous studies, people's final forecasts, albeit too optimistic, were quite predictive of their completion times. Participants would not have been more accurate had they abandoned their optimistic scenarios in favor of predicting they would finish at the deadline. Also, as in Experiment 2, the tendency to disregard pessimistic scenarios in favor of optimistic scenarios had little merit: On average, worst-case scenario predictions were more accurate than best-case scenario predictions.

Experiment 4

To this point in our research, the plausibility and optimism of scenarios have been naturally confounded. Predictors and objective raters judged optimistic scenarios to be more plausible, on average, than pessimistic scenarios. In Experiment 4, we experimentally manipulated scenario optimism and plausibility to assess the independent impact of these two scenario characteristics on prediction.

We expected that scenario plausibility would affect prediction when scenarios are optimistic. A person can reject an implausibly optimistic scenario without adopting a gloomy outlook on the future. Things could still turn out well, although perhaps not as marvelously as the implausibly optimistic scenario implies. Thus, participants should report somewhat more rosy predictions when an optimistic scenario is credible rather than implausible.

Our expectation is less clear for unequivocally pessimistic scenarios. To this point, we have assumed that people disregard pessimistic scenarios, in part, because they see those scenarios as implausible. Perhaps, then, if predictors are faced with admittedly reasonable, negative scenarios, they will report less optimistic predictions. It is also possible, however, that predictors will tend not to alter their predictions, regardless of the plausibility of the negative scenarios. Individuals are highly motivated to believe that they will successfully achieve their goals (Armor & Taylor, 1998). People may prefer to complete their tasks well before a deadline because they want to avoid a last minute rush in which frustration reigns and product quality suffers. Even if the negative circumstances detailed in a pessimistic scenario were to arise, predictors may suppose that they would be able to negotiate the obstacles and stay roughly on schedule. For example, they might react to a

computer failure by borrowing a friend's machine. In summary, plausibility may affect predictions following both positive and negative scenarios or primarily when a scenario is positive.

In Experiments 1–3, participants identified academic tasks and wrote various scenarios about their completion. To increase the generalizability of our findings, we asked participants in the present experiment to write about another common task—their income tax returns. Also, to reduce the possibility that participants would perceive experimental demands as requiring that they report predictions in line with their scenarios, we instituted a new procedure for obtaining scenarios. We portrayed participants' scenarios and predictions as incidental to the purpose of the experiment.

Method

Participants.   Participants were 98 students (45 men, 53 women) at the University of Waterloo who indicated they would be completing their own tax forms that year (1997). They received $5.00 for their participation. We were only able to contact 54 of the original 98 participants for actual completion time data (the semester had ended and students had dispersed). Accordingly, the analyses of accuracy included only these 54 participants. The remaining analyses include all of the participants.

Procedure.   Participants were recruited from around the campus of the University of Waterloo and from classrooms approximately 5 weeks before the Canadian tax deadline of April 30th. They were told that researchers were conducting a study of the detection of exaggeration. To test people's abilities to detect exaggeration, it was necessary to first gather scenarios of different kinds. They were informed that their job would be to write a scenario about completing their income tax returns that met certain requirements. They were told that research participants would subsequently read their scenarios and judge their authenticity.

They were randomly assigned to write either an optimistic or pessimistic scenario that was either plausible or implausible. The instructions for the scenarios were as follows:

> We are asking you to write an *optimistic scenario* (*pessimistic scenario*) in which you mail in your completed income tax return on *April 2nd* (*April 30th*). This is an optimistic (a pessimistic) scenario because the deadline for mailing in completed tax returns is April 30th. In the scenario that you write, *everything should go as well (poorly) as it possibly can.* Furthermore, the scenario that you write should be *plausible* (*implausible*). That is to say, the events that occur in the scenario should be, in your opinion, *highly likely* (*highly unlikely*).

The order in which instructions about scenario positivity and plausibility were provided was counterbalanced. After participants generated a scenario, they estimated when they would actually complete their tax returns. Participants were told that we needed these estimates to assess the accuracy of people's predictions in the exaggeration-detection phase of the experiment. Finally, participants used 10-point scales to rate the scenarios that they wrote on four dimensions: optimism, pessimism, plausibility, and reasonableness.

Results and Discussion

Manipulation checks.   The optimism and pessimism (reversed) ratings were combined, $r(96) = -.87$, into an index, as were the plausibility and reasonableness ratings, $r(96) = .72$. A Scenario Positivity (optimistic vs. pessimistic) × Scenario Plausibility (plausible vs. implausible) ANOVA conducted on the optimism index revealed only a main effect for scenario positivity, $F(1, 82) = 208.50$, $MSE = 3.38$, $p < .001$ ($M = 8.33$ for optimistic

scenarios vs. $M = 2.90$ for pessimistic scenarios). An ANOVA on the plausibility index revealed only a main effect for plausibility, $F(1, 82) = 69.15$, $MSE = 4.02$, $p < .001$ ($M = 7.24$ plausible vs. $M = 3.90$ for implausible). These analyses indicate that we succeeded in independently manipulating scenario positivity and plausibility.

Predicted completion times.   A Scenario Positivity (optimistic vs. pessimistic) × Scenario Plausibility (plausible vs. implausible) ANOVA conducted on participants' predictions of their actual completion time yielded only a significant interaction effect, $F(1, 82) = 3.99$, $MSE = 6.07$, $p = .05$ (see Table 4). Further analyses revealed that plausibility mattered but only when scenarios were optimistic. Participants expected to finish their returns earlier when they wrote a plausible, as opposed to an implausible, optimistic scenario, $t(82) = 2.08$, $p < .05$. Plausibility had no impact on predictions when the scenarios were pessimistic ($t < 1$).

Accuracy.   The accuracy analyses were conducted only on data from participants for whom we obtained completion times. There were no effects of experimental condition on actual completion times ($F < 1$). As in previous experiments, participants displayed a significant optimistic bias, $t(53) = 1.99$, $p = .05$, in their predictions of task completion. On average, they estimated that they would complete their tax returns 15.53 days before the deadline but completed them 12.14 days before the deadline. Fifty-nine percent of participants from whom we obtained completion time information failed to complete their tax returns by their predicted date. Unlike previous experiments, the proportion of people who predicted they would finish after deadline (11%) was not significantly different from those who actually did (22%), $p = .27$, though the trend was in the same direction.

Finally, we examined whether participants would have been more accurate had they simply predicted they would complete their income tax returns by the April 30th deadline. In this experiment, the findings were clear: Participants' predictions were much closer to their actual completion times than was the deadline, $t(53) = 2.60$, $p = .01$. We were unable to conduct a regression analysis pitting deadlines against predictors because all predictors had the same deadline.

Experiment 5

The results of the previous experiment indicated that participants were unaffected by negative scenarios, regardless of their plausibility. We suggested that such a finding stems from a motivated preference to believe that the future will unfold as one

Table 4

Predictions as a Function of Scenario Positivity and Plausibility (Experiment 4)

| | Scenario plausibility | | | |
| | Plausible | | Implausible | |
Scenario positivity	M	SD	M	SD
Optimistic	19.46	13.19	11.86	14.92
Pessimistic	13.99	14.11	15.78	13.56

Note.   Predictions expressed as days before deadline.

wishes and therefore that obstacles can be overcome. To gain additional support for a motivational interpretation, we showed impartial observers the scenarios from Experiment 4 and obtained their predictions of task completion. If a motivational interpretation of the data from Experiment 4 is valid, then neutral observers should respond quite differently from the original participants. Neutral observers should attend to both positive and negative scenarios. While forming predictions, they should not be motivated to disregard someone else's negative scenario simply because it is pessimistic. However, if people are generally disposed to dismiss the content of pessimistic scenarios (e.g., they assume that forewarned is forearmed and anticipate that people will act so as to prevent a negative scenario from occurring), then neutral observers may discount them as well. In Experiment 5, each observer read a single scenario provided by a participant in Experiment 4 as well as the participant's experimental instructions. Observers then predicted when their participant would actually complete the income tax forms.

We expected that observers' predictions would be heavily influenced by scenario positivity and only somewhat by scenario plausibility. Such a pattern of findings would be consistent with the correspondence bias reported by social psychologists (Gilbert, 1995). Observers tend to focus on the direction and extremity of behavior and are relatively inattentive to mitigating circumstances when making judgments about another person. On this account, when making predictions in the current experiment, observers should be affected by scenarios that they know to be somewhat implausible and completely dictated by experimental demands.

In Experiments 1–4, the different scenario manipulations have failed to influence the accuracy of predictions. Nonetheless, we anticipated that the scenario variations would affect the accuracy of observers' predictions in the current experiment. Observers who read optimistic scenarios may be too optimistic, especially if the scenario is plausible. In contrast, observers who read pessimistic scenarios may be too pessimistic, particularly if the scenario is plausible. The intuition that observers reading optimistic scenarios should be overly optimistic and those reading pessimistic scenarios too pessimistic stems from a comparison of the scenario content with the actual completion times in Experiment 4. Participants reported completing their income tax forms about 12 days before the deadline. The optimistic scenarios had them completing the forms 28 days early and the pessimistic scenarios exactly on the deadline. Thus, if observers take the content of the scenarios seriously, they should err in a direction congruent with the relevant scenario completion date.

Method

Participants. Ninety-eight undergraduates (45 men, 53 women) were each yoked with a same-gender participant from Experiment 4. They were compensated with either course credit or $5.00 for their participation.

Procedure. Participants were told that they would read a scenario about an individual completing his or her tax return. In addition, they were informed that the individual had been asked to write a particular kind of scenario. They were further told that their job was to read the scenario and answer some questions. Participants then read the instructions provided to a specific same-gender participant in a particular condition. Thus, they knew, for example, that the person to whom they were yoked had been required to write a plausible pessimistic scenario in which he or she mailed the return on April 30. Next, they read the participant's scenario. They

were asked to predict when the participant had actually completed the form. In addition, they rated the scenarios on the same scales (optimism, plausibility, etc.) that the original participants had used.

Results and Discussion

Manipulation checks. One participant neglected to answer the questions, which comprised the manipulation check; the manipulation check analyses exclude this participant. The optimism and pessimism (reversed) ratings were combined into an index, $r(95) = -.89$, as were the plausibility and reasonableness ratings, $r(95) = .69$. A Scenario Positivity (optimistic vs. pessimistic) × Scenario Plausibility (plausible vs. implausible) ANOVA conducted on the optimism index revealed only a main effect for scenario positivity, $F(1, 81) = 203.00$, $MSE = 3.44$, $p < .001$ ($M = 7.98$ for optimistic scenarios vs. $M = 2.64$ for pessimistic scenarios). An ANOVA on the plausibility index revealed only a main effect for scenario plausibility, $F(1, 81) = 26.02$, $MSE = 4.76$, $p < .001$ ($M = 7.21$ for plausible scenarios vs. $M = 4.98$ for implausible scenarios).

Predicted completion times. As expected, neutral observers' predictions were strongly affected by the positivity of the scenarios. Participants estimated an earlier completion time if they read an optimistic ($M = 21.55$ days before deadline) as opposed to a pessimistic scenario ($M = 6.41$ days before deadline), $F(1, 82) = 42.05$, $MSE = 5.27$, $p < .001$. The analysis also revealed a Scenario Positivity × Scenario Plausibility interaction, $F(1, 82) = 3.83$, $MSE = 5.27$, $p = .05$ (see Table 5). Participants tended to generate more optimistic predictions when optimistic scenarios were plausible, and more pessimistic predictions when pessimistic scenarios were plausible. Neither of these simple effects attained significance, however, $t(82) = 1.49$, $p = .15$, and $t(82) = 1.31$, $p = .20$, respectively.

Accuracy. The analysis of accuracy included only those observers who were yoked to individuals for whom we had completion time data. On average, observers did not exhibit an optimistic bias in prediction ($t < 1$). On average, they predicted that their yoked participants would finish their tax returns 13.21 days before the deadline. A Bias × Scenario Positivity × Scenario Plausibility ANOVA revealed a significant Bias × Scenario Positivity interaction, $F(1, 46) = 11.69$, $MSE = 6.16$, $p < .001$. Observers reading an optimistic scenario were optimistically biased, $t(26) = 3.51$, $p < .001$. They predicted a completion time of 20.37 days before deadline; the participants to whom they were yoked actually finished their tax returns 10.89 days before deadline. In

Table 5

Predictions as a Function of Scenario Positivity and Plausibility (Experiment 5)

| | Scenario plausibility | | | |
| | Plausible | | Implausible | |
Scenario positivity	M	SD	M	SD
Optimistic	24.30	10.57	18.80	14.10
Pessimistic	3.48	13.00	9.34	14.91

Note. Predictions expressed as days before deadline.

contrast, observers displayed a pessimistic bias when they read a pessimistic scenario, $t(26) = 2.36$, $p = .04$. They predicted that the returns would be completed 6.06 days before the deadline; their yoked participants actually finished 13.39 days before their deadline.

Summary. Neutral observers took pessimistic scenarios into account while predicting when participants in Experiment 4 would complete their income tax returns. As anticipated, the positivity of the scenarios had a greater impact on observers' predictions than did the plausibility of the scenarios. Also, as expected, observers were too optimistic when they read optimistic scenarios and too pessimistic when they read pessimistic scenarios.

General Discussion

People's views of how they will go about completing tasks are very similar to best-case scenarios. Such scenarios are associated with overly optimistic predictions of task completion (Experiment 1). By enjoining predictors to generate alternate, less rosy scenarios of task completion, we moved beyond other recent attempts to debias individuals' optimistic predictions of task completion times. Participants' final task completion time estimates were not affected when they generated pessimistic scenarios alone (Experiments 1 and 4) or in combination with more optimistic scenarios (Experiments 2 and 3). Of importance, Experiment 4 demonstrated that regardless of plausibility, predictors did not attend to pessimistic scenarios. In the case of optimistic scenarios, however, plausibility did influence prediction. This pattern of results suggested that participants were motivated to disregard pessimistic constructions of task completion. The results of Experiment 5, in which impartial observers were influenced by pessimistic scenarios, are further evidence for this motivational claim. We note also that the absence of scenario condition effects on final predictions (Experiments 1 and 3) cannot easily be attributed to lack of statistical power. In Experiments 4 and 5, effects of scenario condition were obtained with comparable sample sizes.

The results of the current experiments present an intriguing conundrum. Why do debiasing procedures involving the generation of multiple scenarios meet with at least some success in other paradigms (e.g., Griffin et al., 1990) when they fail so miserably in our context? We noted that our measures differ from those used in other debiasing paradigms. Most studies focus on (over)confidence. Some (but by no means all) researchers have demonstrated that people's confidence intervals widen when they are required to generate alternative scenarios. It is not self-evident that a change in confidence intervals would be accompanied by a change in prediction. In the current experiments, we had no difficulty leading people to consider alternatives to their preferred scenarios, but they failed to use the information in these more pessimistic scenarios when forming final completion time estimates.

There is a second important way in which our experiments differ from most previous research. Our participants made predictions for outcomes in which they had a vested interest. There are good reasons not to want to complete a task at the very last moment, if one hopes to do one's best. In most of the earlier debiasing studies, researchers used judgment tasks that were rather impersonal, such as general knowledge questions (Koriat et al., 1980), simulated jury decisions (Brenner, Koehler, & Tversky, 1996), and hypothetical future events (Griffin et al., 1990). In those studies, pre-

dictors had little stake in a particular set of outcomes and were perhaps more willing to consider the implications of alternative scenarios.

There are a couple of studies where researchers did investigate individuals' predictions for outcomes with high personal relevance. In a study by Carroll (1978), participants were asked to imagine that either Ford or Carter would win the 1976 presidential election. In a study by Hoch (1985), graduating students were asked to explain why their job search was likely to yield favorable outcomes, unfavorable outcomes, or both. In contrast to our findings, Carroll and Hoch found that imagining or explaining outcomes affected participants' forecasts, even when the outcomes were nonpreferred. Our research differs from those studies in that individuals presumably perceive that they have greater control over how they carry out their personal projects than they have over the results of a presidential election or a job search. Participants in the current experiments may have felt justified in paying short shrift to pessimistic scenarios because they believed they could overcome anticipated obstacles. As their delayed completion times suggest, perceptions of control are sometimes more illusory than real (Langer, 1975).

Are participants in the present experiments in any sense justified in adhering to their preferred optimistic scenarios? We examined this question in two ways. First, we investigated whether participants would have been more accurate if they had simply predicted that they would finish at their deadlines. Although the results of Experiments 1–4 varied somewhat, participants never would have been better off predicting that they would finish at their deadlines. Second, we compared scenario predictions with actual completion times. These analyses provide some evidence that abandoning optimistic scenarios and replacing them with pessimistic scenarios would have improved prediction accuracy. In none of the experiments were optimistic-scenario predictions more accurate than pessimistic-scenario predictions. On the whole, pessimistic-scenario predictions tended to be more accurate—significantly so in Experiments 2 and 3.

Limitations of the Current Experiments

Participants in Experiments 4 and 5 differed in more ways than simply their personal stake in the completion of the task under evaluation. They also differed with respect to the amount of information they possessed about the task and the person attempting it. Presumably, participants in Experiment 4 did not exhaustively mention circumstances relevant to a speedy completion of their tax return in their scenarios and, thus, in this sense, had more information than the observers with whom they were paired. It is important to note, however, that steps for completion of tax returns are concrete and generally well known. Although we cannot argue that the observers in Experiment 5 had complete access to the original participants' thoughts and plans concerning the task, we can be relatively assured that much relevant information was available to them.

Another difference is that participants in Experiment 4 generated their scenarios, whereas observers in Experiment 5 read theirs. We are inclined to conclude that this difference between groups, if anything, worked against the different patterns of results in the two experiments. In our review of past literature, we suggested that people find self-generated scenarios to be more rele-

vant to their judgments than ones they read. If we are correct in this supposition, then the effect of scenario positivity in Experiment 5 may well have been even more pronounced if observers had generated the scenarios.

We assumed that our participants would generally wish to finish their tasks as soon as they could, and, consistent with this assumption, participants' best-case scenarios typically described how they would finish well before deadlines. However, the exact nature of predictors' motivation cannot be known with certainty. We suggested that participants prefer to complete their tasks well before a deadline to ensure the quality of their work. From this perspective, people are consistently inaccurate in prediction because they encounter unanticipated obstacles that prevent them from doing an excellent job in their anticipated time frame. Alternatively, participants may be relatively unconcerned with quality when they offer their predictions. Instead they may want to finish quickly and anticipate sacrificing quality in favor of efficiency. As they become more engrossed in a project, however, their standards may rise. Consequently, they may work harder and longer than they originally intended. It seems likely that both of these interpretations have merit, and that motivations will differ across tasks and individuals. Under either interpretation, people's initial assessments of eventual task completion times are systematically inaccurate in a manner that is quite likely to carry some cost.

In the current experiments, predictors concerned themselves with tasks that many people face in their day to day lives. However, academic assignments and tax returns share some characteristics that prevent us from drawing a general conclusion that people focus on optimistic, and disregard pessimistic, scenarios of task completion in all tasks. First, we only studied tasks with deadlines. Deadlines influence predictions: Almost everyone predicts that they will complete tasks by the deadline. Conceivably, the pattern of prediction is different when deadlines are not present. Most of us have ongoing tasks for which there is no concrete due date (e.g., painting the house). In those circumstances, individuals may be willing to entertain the possibility that things will not go according to plan. It is important to note, however, that people do make overly optimistic predictions even in the absence of hard deadlines (Buehler et al., 1994). It remains to be seen whether prompted generation of a pessimistic scenario could change predictors' optimism in the absence of explicit deadlines.

Second, our findings may not generalize to group tasks. Characteristics of groups such as composition (e.g., who is leader), the motives of group members, and a host of other considerations could influence scenario construction and prediction of task completion. Third, participants in our studies generated scenarios of task completion on their own rather than according to strict formulae. In contrast, some organizations use detailed scenario analysis techniques. Royal Dutch/Shell engages in a complex process where many contingencies are formally evaluated. Reportedly, this process has met with success in inhospitable market conditions (Wack, 1985).

Finally, accountability may be another important contextual variable. In all of the current experiments, we did not inform participants that we would contact them regarding their actual completion time until after they made their prediction. Although Buehler et al. (1994) found preliminary evidence that participants' predictions, actual completion times, and (hence) accuracy did not

systematically vary according to whether predictors were held accountable for their forecasts, this variable warrants further investigation.

Conclusion

We began by asking whether the generation of alternative, more pessimistic scenarios affects actual task completion time predictions. Our evidence is unequivocal: Writing pessimistic scenarios did not reduce predictors' optimism about when their tasks would be completed. We asked, as well, whether the generation of pessimistic scenarios increases the accuracy of predictions. An increase in accuracy could occur in two ways. First, people might temper their optimism and bring their predictions more in line with their likely outcomes. Because the generation of alternative scenarios failed to affect final predictions in the current experiments, this could not be a route to improved accuracy. Pessimistic scenarios could also alert participants to potential obstacles to task completion and thereby enable them to complete their tasks more efficaciously. We obtained no evidence that pessimistic scenarios lead to faster task completion than optimistic scenarios. Instead, we found that people remained too optimistic regardless of experimental condition. An additional implication of our findings involves scenario plausibility. In the first three studies, both predictors and outside raters judged overly optimistic scenarios of task completion to be highly plausible. In accord with Kahneman and Tversky's (1982) analysis, we advise predictors and observers to be cautious in basing their predictions on the apparent reasonableness of a scenario. Thus, while it might seem entirely plausible that a much-needed grocery store will appear in place of a nearby vacant lot within the next few months, one could be shopping across town for some time to come.

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New Editors Appointed, 2002–2007

The Publications and Communications Board of the American Psychological Association announces the appointment of five new editors for 6-year terms beginning in 2002.

As of January 1, 2001, manuscripts should be directed as follows:

- For **Behavioral Neuroscience**, submit manuscripts to John F. Disterhoft, PhD, Department of Cell and Molecular Biology, Northwestern University Medical School, 303 E. Chicago Avenue, Chicago, IL 60611-3008.

- For the **Journal of Experimental Psychology: Applied**, submit manuscripts to Phillip L. Ackerman, PhD, Georgia Institute of Technology, School of Psychology, MC 0170, 274 5th Street, Atlanta, GA 30332-0170.

- For the **Journal of Experimental Psychology: General**, submit manuscripts to D. Stephen Lindsay, PhD, Department of Psychology, University of Victoria, P.O. Box 3050, Victoria, British Columbia, Canada V8W 3P5.

- For **Neuropsychology**, submit manuscripts to James T. Becker, PhD, Neuropsychology Research Program, 3501 Forbes Avenue, Suite 830, Pittsburgh, PA 15213.

- For **Psychological Methods**, submit manuscripts to Stephen G. West, PhD, Department of Psychology, Arizona State University, Tempe, AZ 85287-1104.

Manuscript submission patterns make the precise date of completion of the 2001 volumes uncertain. Current editors, Michela Gallagher, PhD; Raymond S. Nickerson, PhD; Nora S. Newcombe, PhD; Patricia B. Sutker, PhD; and Mark I. Appelbaum, PhD, respectively, will receive and consider manuscripts through December 31, 2000. Should 2001 volumes be completed before that date, manuscripts will be redirected to the new editors for consideration in 2002 volumes.