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Perspectives on prediction: Does third-person imagery improve task completion estimates?

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ABSTRACT

People typically underestimate the time necessary to complete their tasks. According to the planning fallacy model of optimistic time predictions, this underestimation occurs because people focus on developing a specific plan for the current task and neglect the implications of past failures to meet similar deadlines. We extend the classic planning fallacy model by proposing that a phenomenal quality of mental imagery – the visual perspective that is adopted – may moderate the optimistic prediction bias. Consistent with this proposal, participants in four studies predicted longer completion times, and thus were less prone to bias, when they imagined an upcoming task from the third-person rather than first-person perspective. Third-person imagery reduced people's focus on optimistic plans, increased their focus on potential obstacles, and decreased the impact of task-relevant motives on prediction. The findings suggest that third-person imagery helps individuals generate more realistic predictions by reducing cognitive and motivational processes that typically contribute to bias.

Introduction

Anecdotes, intuition, and empirical research all suggest that people typically underestimate how long it will take to finish upcoming tasks or projects. Much of the empirical research examining task completion predictions has documented a phenomenon known as the "planning fallacy" (Kahneman & Tversky, 1979), a form of optimistic bias wherein people underestimate the time it will take to complete an upcoming task even though they realize that similar tasks have typically taken longer than expected (for a review see Buehler, Griffin, & Ross, 2002). The basic tendency to underestimate completion times has been observed for a wide range of personal, academic, and work-related tasks by individuals and by groups (e.g., Buehler & Griffin, 2003; Buehler, Griffin, & Ross, 1994; Byram, 1997; Connolly & Dean, 1997; Kruger & Evans, 2004; Roy, Christenfeld, & McKenzie, 2005; Taylor, Pham, Rivkin, & Armor, 1998).

The tendency to underestimate task completion times has important implications for organizations and individuals as such unrealistic forecasts and optimistic plans can have serious economic, personal, and social consequences. The present research explores a perceptual factor – the visual perspective or point of view that people adopt as they envision an upcoming task – that may moderate the optimistic bias in prediction and provide a promising approach to debiasing. The third-person perspective should, according to relevant theory, serve to counteract cognitive and motivational processes that typically contribute to optimistic bias in task predictions. Thus we propose that people will generate longer, and hence more realistic, task completion predictions when they imagine a future task from a third-person rather than a first-person perspective.

Cognitive and motivational sources of bias

There are a number of well-documented processes that explain why people underestimate task completion times. According to cognitive processing accounts, the bias stems largely from the kinds of information that people focus on when generating predictions. In particular, when generating a task completion prediction, people's natural inclination is to focus exclusively on the specific steps that they need to take to complete a project at the desired time (Buehler et al., 1994, 2002; Kahneman & Tversky, 1979). However, given the vast number of potential impediments, there is a great likelihood that any given project will encounter some unexpected problems, delays, and interruptions. When people focus narrowly on a plan for successful task completion, they neglect other sources of information – such as past completion times, competing priorities, and factors that may delay their progress – that could help them to generate more realistic predictions. Evidence of these myopic planning processes comes from studies in which people describe their thoughts while predicting when they will finish an upcoming project. Most descriptions focus on specific future plans whereas very few descriptions mention potential

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obstacles and delays (Buehler, Griffin, & MacDonald, 1997; Buehler, Messervey, & Griffin, 2005; Buehler et al., 1994). In addition, experiments have shown that people who are instructed explicitly to focus on developing a concrete, step-by-step plan for a task make more optimistic predictions than those who are not (Buehler & Griffin, 2003). These findings imply that unrealistic predictions are caused, at least in part, by a tendency to focus narrowly on a plan for successful task completion.

Motivational factors also contribute to prediction bias. Theories of motivated reasoning (Kunda, 1990) and desirability bias (Krizan & Windschitl, 2007) suggest that predictions in many domains are biased by people's hopes, wishes, and desires. When considering an upcoming task, one pervasive motivation that could potentially bias people's predictions is the desire to finish as soon as possible. For example, even when tasks have a clear external deadline, people often hope to finish well in advance of the due date. Consistent with the motivational accounts, research on task completion predictions has shown that a motivation to finish tasks early, such as that produced by monetary incentives (Buehler et al., 1997; Byram, 1997) or the desire to please others (Pezzo, Pezzo, & Stone, 2006), increases the optimistic prediction bias. Furthermore, mediational analyses suggest that the desire to finish an upcoming task elicits optimistic predictions because it heightens people's tendency to focus narrowly and myopically on a plan for task completion (Buehler et al., 1997).

Actor–observer differences

Research has also identified factors that moderate or limit the tendency to underestimate task completion times (for reviews see Buehler et al., 2002; Roy et al., 2005), including one that is highly pertinent to the present study of perspective. When people make predictions concerning others' tasks, rather than their own, they are less prone to underestimate completion times (Buehler et al., 1994; Newby-Clark, Ross, Buehler, Koehler, & Griffin, 2000). For example, Buehler et al. (1994) asked participants to predict when an upcoming computer assignment would be finished and to list their thoughts while generating the predictions. Observer participants reviewed the responses, tried to predict when the actors would actually finish the assignment, and listed their own thoughts as they arrived at their predictions. Whereas the actors predicted to finish earlier than they actually did, the observers did not exhibit this bias.

The actor–observer difference in predictions appears to reflect differences in the underlying cognitive and motivational processes that give rise to optimistic bias. As noted previously, actors fall prey to bias in part because they focus narrowly on a plan for successful task completion. Observers typically do not have access to the wealth of information that actors possess about their future plans and life circumstances, making it difficult for observers to focus narrowly on a plan for completing the task by a desired time. Thus observers may be more likely to "step back" and contemplate a broader spectrum of information, including potential obstacles to speedy task completion. In addition, neutral observers do not generally share the same motivations as actors (e.g., the motivation to complete an upcoming task promptly), and thus observers' predictions are less likely to be influenced by these motives.

Consistent with this account, Buehler et al. (1994) found that observers were less likely than actors to base predictions on a specific plan for task completion, and were more likely to consider problems the actor might encounter. Along similar lines, studies have shown that prompting individuals to contemplate worst-case scenarios of task completion (which included myriad obstacles, interruptions, and delays) led them to predict later completion times for another individual, but had no impact on predictions concerning their own tasks (Newby-Clark et al., 2000). Again this suggests that observers are guided less by their desires, and thus are more receptive to the possibility of obstacles than are actors. Similar actor–observer differences have been found in predictions concerning various desirable outcomes, such as donating to charity and enjoying a long and happy romantic relationship (e.g., Epley & Dunning, 2000; MacDonald & Ross, 1999; Vietri, Chapman, & Schwartz, 2009). In each case the actors focused narrowly on the desirable outcomes, whereas observers considered factors that could work against these outcomes. Together these findings suggest that neutral observers are less inclined than actors to base predictions on an optimistic, plan-based scenario, and are more inclined to consider potential obstacles.

Notably, not all studies find this actor–observer difference in prediction. Byram (1997) asked participants to build a computer stand in the lab and found that participants underestimated the time it would take, to an equal degree, whether their predictions concerned themselves or the average person. Hinds (1999) examined predictions of the time it would take new users of a cell phone to perform voicemail tasks. Estimates were obtained from a group of observers highly experienced with the tasks (experts) and a group with limited experience (intermediate users) as well as from the novice users themselves. Although participants generally underestimated the time novice users would require, this bias was greater in expert observers and lower in intermediate observers than in the actor participants themselves. These findings indicate that observers do not always generate more realistic predictions than actors.

A noteworthy feature of the latter two studies is that they examined predictions of task duration (i.e., the time spent working on a task) whereas those finding reduced bias among observer participants examined predictions of task completion time (i.e., the date by which a task will be finished). These are very different predictions, and their accuracy depends on different factors. Task completion times depend not only on the duration of the task itself, but are also subject to a host of external factors such as interruptions, distractions, and competing demands from other tasks. Thus it seems plausible that the reduction in bias found in observer predictions of completion time but not task duration reflects the additional considerations that apply uniquely to predictions of task completion. Given that the present studies targeted predictions of task completion time (rather than task duration), the theorizing we develop below is guided primarily by the actor–observer studies that examined task completion predictions.

The role of imagery perspective

The preceding literature review suggests that optimistic predictions of task completion time stem from a tendency to focus narrowly on a scenario, or mental image, of the path leading to a successful task completion, a tendency that is enhanced when predictors have a strong desire to complete the task early (e.g., Buehler et al., 1997), and is attenuated in predictions generated by neutral observers (e.g., Buehler et al., 1994). The main purpose of the present research was to explore the influence of imagery perspective on people's predictions concerning their own upcoming tasks. Given the central role of imagery in these predictions, we reasoned that it may be possible to alter people's predictions by altering the visual perspective or point of view that they adopt as they imagine the future task unfolding. Thus a novel contribution of the present research is that it tests whether people can be induced to take on an observer-like perspective even when making predictions concerning their own future tasks, and whether the adoption of this perspective is an effective strategy for debiasing predictions of task completion time.

Our work is motivated by previous research and theory which indicates that when people imagine their future actions they often generate visual imagery (Atance & O'Neill, 2001; Marks, 1999), and