

Forsaking Optimism

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Although subjective optimism is generally regarded as adaptive, people show a sharp decline in optimism when they anticipate self-relevant feedback in the near future. The authors discuss moderators of the shift in future outlooks as well as reasons for the shift. The authors propose that the shift can reflect a response to new information or an attempt to brace for undesired outcomes. Both explanations represent a response to an adaptive need to prepare for uncertain states of the world. Finally, the authors discuss unanswered questions and directions for future research.

We are going to a different world," said Candide, "and I expect it is the one where all goes well. . . Everything will turn out right. It is undoubtedly the new world that is the best of all possible universes —Voltaire, 1947/1759, p. 48

The colorful protagonist of Voltaire's novel displays a persistent, almost childlike optimism about the future. Regardless of the adversity or disaster that confronts him, Candide continues to believe that the future will be well. The relentless optimism of Candide was intended to be a satirical attack on a popular philosophy of Voltaire's day. Yet while Candide's persistent optimism was intended to be absurd and comical 350 years ago, it appears amazingly commonplace today. Three decades of theory and research on human judgment suggest that, rather than predicting that the future holds an equal mix of good and bad, people are overwhelming biased toward optimism.

The bias in predictions toward optimism appears in many forms including *comparative optimism* (also known as the *optimistic bias*), whereby people believe that they are more

likely to experience positive events and less likely to experience negative events than are their peers (Weinstein, 1980, 1983), *dispositional optimism* (Carver & Scheier, 1981), whereby people show an enduring tendency to expect the best, and *unrealistic optimism*, whereby personal predictions exceed the predictions made by objective indicators (Buehler, Griffin, & MacDonald, 1997). Like the fictional Candide, people seem to view the future through rose-colored glasses, believing that all will be well, or at least better for them than for others.

The pervasive optimism in personal predictions is more than an interesting judgment bias. Overwhelming evidence shows that an optimistic outlook in its various incarnations provides a variety of emotional, social and health benefits (e.g., Aspinwall & Taylor, 1992; Carver & Scheier, 1981; Scheier & Carver, 1985; Taylor, Kemeny, Reed, Bower, & Gruenewald, 2000). Some have even argued that an optimistic outlook characterizes normal rather than abnormal human functioning (Taylor & Brown, 1988). Accordingly, normal social perception enlists a series of social and cognitive filters that screen and spin incoming experience into the most desirable future outlook within reasonable limits (Greenwald, 1980; Taylor & Brown, 1988).

Although most people in Western cultures show optimism most of the time, a growing number of studies reveal that people show marked declines in optimism when self-relevant feedback becomes available and draws near. For example, students in one study estimated on four occasions the score they would receive on an in-class exam: one month prior to the exam, the day of the exam, 50 min before the grades

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were returned, and moments before the exams were returned. Students were quite optimistic when the exam was a month away (Time 1), predicting an exam score that exceeded their actual scores. However, students revised their initial outlooks to become more realistic after the exam (Time 2) and when the professor arrived with the grades (Time 3). More importantly, as the professor called students by name and returned the exams (Time 4), students lowered their outlooks even further to become pessimistic, predicting a score that fell significantly below the predictions they made at earlier time points and significantly below their actual scores (Shepperd, Oulette, & Fernandez, 1996, Experiments 2 & 3; see also Sanna, 1999; Sackett, 2002).

The shift in predictions in anticipation of self-relevant feedback is not limited to estimates of exam performance. Other research shows the shift in predictions of starting salaries (Shepperd et al., 1996), corporate earnings (Calderon, 1993), smoking risks (Grace & Pennington, 2000), interpersonal feedback from others (Terry & Shepperd, 2004), performance on laboratory tasks (Gilovich et al., 1993; Savitsky, Medvec, Charlton & Gilovich, 1998), performance on a driving test (McKenna & Myers, 1997), and the results of a scavenger hunt (Armor, 2002). The shift even appears in risk estimates. For example, participants in one study believed they would or would not be tested for a fictitious medical condition (TAA deficiency) with severe consequences. All participants learned that 20% of students test positive for TAA deficiency then estimated the probability that they would test positive. Only participants anticipating testing supplied an estimate significantly greater than 20%. Moreover, as time passed, the estimates of the *test* participants climbed even higher whereas the estimates of no test participants remained the same (Taylor & Shepperd, 1998). Taken together, these investigations demonstrate that people engage in a downward revision of personal predictions as self-relevant feedback draws near.

Our review has five sections. First, we examine conditions that influence when people shift their predictions downward. Second, we review explanations for why the shift occurs. We present two broad categories of explanations: people shift in response to new information, and people shift to brace for undesired outcomes.

Third, we propose that both categories of explanations serve the common need of preparing people to respond to uncertainty. Fourth, we discuss the form (does the shift occur gradually or rapidly) and authenticity (do people truly believe their lower estimates) of the shift. Finally, we provide directions for future research.

The present review does not focus on whether predictions about the future are objectively optimistic, realistic, or pessimistic relative to some external criterion (e.g., the population base rates). In the absence of objective indicators, and because participants themselves often have little sense what objectively represents an optimistic versus pessimistic prediction, it may be meaningless to define one point as objectively optimistic, realistic, or pessimistic. Thus when examining predictions across time, the starting and end points are less important than the transition between points, and our review focuses squarely on the process whereby predictions become progressively lower relative to an initial judgment. For convenience sake, we employ the term optimism to refer to the initial expectation. However, our usage of optimism implies nothing regarding the relationship of that initial judgment to some objective index.

When Do People Lower Their Predictions?

Several factors influence whether people adjust their outlook and the degree to which they adjust their outlook. These factors include the proximity of behavior and feedback, the ease with which people can imagine negative outcomes, outcome importance, outcome controllability, and level of self-esteem.

The Proximity of Behavior and Feedback

The temporal proximity of behavior and information that could culminate in potential bad news ranks among the most prominent moderators of shifts in predictions. Specifically, three conditions determine the extent to which people shift their personal predictions: (a) whether people anticipate feedback or information bearing on their outcome predictions, (b) the temporal proximity of behavior that will culminate in this outcome feedback or information, and (c) the temporal proximity of outcome feedback or in-

formation (Shepperd et al., 1996). All three conditions serve to constrain predictions and thereby prompt a decline in optimism.

For example, researchers are often confident that a top scientific journal will accept their work for publication when they do not anticipate writing up their ideas until the distant future (if at all). However, people are likely to entertain a more conservative forecast as they confront behavior that will culminate in feedback or information bearing on their predictions. Researchers, for example, likely display caution in their predictions when in the throes of writing their manuscript. They may discover that the writing muses are absent, that their findings are not as clear as they thought, or that they failed to collect some crucial data that would rule out an alternative explanation for the findings. Additional information of this sort can serve to douse one's optimism. Moreover, once the behavior is complete (i.e., the manuscript is in the mail) people may show further declines in optimism as the focus shifts from *if* to *when* they will receive feedback. Finally, people often abandon any remaining sliver of optimism at the moment of truth. The day that fat envelope from the journal arrives in the mail with the editorial decision, researchers often begin thinking ahead to where they will send the manuscript next in anticipation of an unfavorable decision.

Ease of Imagining Negative Alternatives

People will adjust their predictions only in so far as they can simulate, or imagine, alternative outcomes. While mental simulation may become automatic, it is probably not innate. Rather, mental simulation requires cognitive abilities, such as imagination and contemplation of the future, that do not develop fully until adulthood (Nurmi, 1991). Moreover, mental simulation and prediction adjustment require several abilities that young children lack such as the ability to conceptualize causal relationships, reverse a situation and understand which action caused which outcome (Wadsworth, 1996), engage in hypothetical thinking (Piaget, 1972), and recognize that what they want *not* to happen can also happen (Harter & Pike, 1984).

Ultimately, the ability to imagine future consequences or think hypothetically may be grounded in the development of the prefrontal cortex. Research in neurobiology suggests that

the prefrontal cortex is responsible for rationale decision-making and future planning (Damasio, 1994). People with lesions in the prefrontal cortex, compared with healthy controls and people with lesions in other brain regions, are generally insensitive to the positive and negative future consequences of their actions and are guided more by immediate concerns (Bechara, Damasio, Damasio, & Anderson, 1994). The prefrontal cortex does not show full development until early adulthood (Spear, 2000) and may explain why children are less able than adults to imagine future consequences and thus to draw the link between their actions and outcomes.

Importance of the Outcome

Evidence suggests that people are more likely to alter predictions for outcomes that potentially have severe negative consequences. For example, in the study in which participants predicted their likelihood of testing positive for a medical condition, participants shifted from optimism only when the consequences were severe and not when they were benign (Taylor & Shepperd, 1998).

While importance can be a characteristic of the outcome, it also can be a characteristic of the person. For example, a low grade in a course may be devastating to one student, yet a minor annoyance to another. Presumably, the student who needs or values a high grade in the class is more likely to adjust predictions in anticipation of feedback than the student who regards the grade as relatively inconsequential. Consistent with this idea are the findings of a study examining expectations regarding a pending financial event. Students learned (falsely) that a registrar error meant that 25% of students at their university were accidentally under billed by the registrar's office and would soon receive a \$78 bill in the mail. Financially needy students were more likely than financially secure students to predict that they would receive a bill in the mail even after controlling for prior experience with financial loss and billing errors (Shepperd, Findley-Klein, Kwavnick, Walker, & Perez, 2000, Studies 1 and 2).

The billing error study included another condition that also demonstrates how outcome importance influences future outlooks. Some students learned that 25% of students were over-

billed and would soon receive a refund in the mail. The logic of the added condition draws on research on loss aversion. Numerous researchers have noted that people are loss averse; they find losses more aversive than they find gains of equal magnitude attractive (Kahneman & Tversky, 1984; Taylor, 1991). According to cardinal utility theory (Bernoulli, 1738/1954z), the loss aversion stems from the implications losses can have for comfort. Financial resources are extremely important until basic needs are met. Once basic needs are met, the need for additional resources drops significantly. A loss of resources, however, could translate to a decrease in comfort and a failure to meet basic needs. The prospect of a loss of resources, compared with the prospect of a gain, is thus more threatening (i.e., more important or consequential), and thus more likely to prompt decreased optimism.

The findings from the refund conditions were consistent with this reasoning. Whereas needy and non-needy students differed in their bill estimates, they did not differ in their refund estimates. Rather, the estimates of both needy and non-needy students hovered around 25%. In addition, whereas need and estimates were correlated in the loss condition, with higher need corresponding to higher estimates; they were uncorrelated in the gain condition. In short, students displayed negative expectations only in anticipation of a possible bill (a loss) and not in anticipation of a possible refund (a gain).

While people are more likely to shift their predictions downward in anticipation of outcomes with serious consequences, we suspect that the shift may diminish to the extent that people alter the importance they place on the outcome. For example, a female student who fears that she performed poorly on an exam can diminish feelings of anxiety by minimizing the importance of the exam or the consequences of a poor exam. The student could conclude that academic performance is less important than success in other areas of life, or that she will rectify the poor exam performance with a stellar performance on the final exam. Several researchers have noted that people will alter the importance they attach to performance domains and outcomes based on how they fair in those domains (e.g., Tesser, 1988). We suspect that merely the anticipation of a poor outcome can

induce a shift in outcome importance and thereby reduce the shift from optimism.

Perception of Control

People are less likely to forsake optimism when they perceive that they can control either the outcome or its consequences. Regarding control over the outcome, when people believe they can control their outcomes, they believe they can take actions to increase the occurrence of a desired outcome and avoid the occurrence of an undesired outcome. Indeed, perceptions of control likely contributed to the substantial optimism found initially in the exam study (Shepperd et al., 1996). As a test or performance draws near, however, control over the outcome often declines (e.g., people have less time to prepare). Moreover, in most situations control over the outcome (and correspondingly, any trace of optimism) ends with the end of the performance (i.e., Shepperd et al., 1996; Nisan, 1972).

Regarding control over the consequences, some evidence suggests that people are also less likely to forsake optimism to the extent that they perceive the consequences as controllable. Specifically, participants in one study learned they tested positive for an enzyme deficiency and thus had a 50% chance of developing serious medical problems. However, whereas some participants believed they could control the problem (i.e., the consequences) through medication, others believed they could not. Participants predicted that they were more likely to develop the medical problem when the problem was uncontrollable than when the problem was controllable (Shepperd, Carroll, Tobin, & Findley-Klein, 2006). Importantly, participants viewed the outcome as less serious when the consequences were controllable than when they were uncontrollable, suggesting that people may revise their predictions less when the consequences are controllable because they regard such outcomes as less serious.

It is worth noting that adjusting predictions in anticipation of feedback can itself be regarded as a type of control. However, rather than attempting to control the outcome, people attempt to control the emotional impact of feedback. In a similar vein, some theorists distinguish between primary control (attempts to change external factors to benefit oneself) and secondary

control (attempts to assimilate oneself to external realities; Rothbaum, Weisz, & Snyder, 1982). When exercising primary control is difficult or involves a high risk of failure, secondary control may offer a more certain, safer alternative. Nestled within secondary control is a more specific type of control whereby people strive to predict events in a way that helps them avoid disappointment (Rothbaum et al., 1982). Accordingly, people exercise secondary predictive control through adjusting predictions when primary control over performance no longer exists.

Perceptions of control are not equally salient for all people. Some research suggests that perceptions of control are particularly salient among people who are success-oriented relative to people who are failure oriented (Atkinson & Feather, 1966; Heckhausen, 1967). Success-oriented people, unlike failure-oriented people, tend to view the availability of time as an asset that allows them to control outcomes and increase the likelihood of success. The more time available, the more success-oriented people believe they can influence their performance (Nisan, 1972). The consequence of these different orientations is that success-oriented people should be more likely than failure-oriented people to view their control as diminishing, and thus to display a decline in optimism, as available time diminishes with the approach of performance. Consistent with this reasoning, Nisan (1972) found that success-oriented people were more likely than failure-oriented people to show declines in subjective confidence as the time of performance approached.

It is important to note that perceived severity and control overlap. The perceived severity of an outcome often depends on the extent to which people perceive they can control the objective or subjective impact of the outcome. People may evaluate outcomes that they perceive under their control as less severe than outcomes they perceive as out of their control.

Self-Esteem

Several studies suggest that people with low self-esteem shelve their optimism more readily than do people with high self-esteem (Sanna & Meier, 2000; Shepperd et al., 1996; Spencer & Steele, 1994). For example, Spencer and Steele (1994) showed that people with low self-esteem

were more likely than people with high self-esteem to underestimate their score on a test they had taken, but only when they anticipated feedback. When no feedback was anticipated, the estimates of people with low versus high self-esteem were similar. Sanna and colleagues (Sanna & Meier, 2000; Sanna, 1999) have extended these findings showing that people with low self-esteem reported thinking more about things that would lead to a negative outcome whereas people with high self-esteem reported thinking more about things that would lead to a positive outcome.

The greater tendency for people with low self-esteem to lower their predictions in anticipation of feedback may stem from their chronic uncertainty regarding their self-conceptions (Campbell, 1990; Campbell & Lavalley, 1993). The low self-certainty of people with low self-esteem may make them more sensitive to external, self-relevant feedback. They thus respond more favorably to positive feedback and more negatively to unfavorable feedback than do people with high self-esteem (Campbell & Lavalley, 1993; Swann, Pelham, & Krull, 1989). This greater sensitivity to past feedback may prompt people with low self-esteem to more readily entertain the possibility of negative outcomes in anticipation of future feedback. Alternatively, their greater reactivity to feedback may encourage them to reduce their optimism in an attempt to avoid the negative feelings associated with outcomes falling short of expectations. Indeed, some researchers have proposed that people with low self-esteem regulate their affect by anticipating and preparing in advance for the possibility of negative outcomes (Blaine & Crocker, 1993). By contrast, the stronger sense of conviction that high self-esteem people have regarding their performance abilities may provide them subjective insulation against the anxiety aroused by potentially threatening feedback (Campbell & Lavalley, 1993).

Summary

A number of factors moderate the extent to which people reduce their optimism. Foremost, people must be capable of imagining alternative outcomes. For a variety of reasons, young children, compared with adults, may be less likely to imagine alternative outcomes. In addition, people are more likely to shift their predictions

when performance and feedback are proximal, when the outcome is consequential, and when they perceive no control over the outcome or its consequences. Finally, research suggests that people with low self-esteem adjust their predictions more readily than do people with high self-esteem.

Explaining the Downward Shift in Predictions

Why do people shift their personal predictions? The psychological literature offers several explanations that we organize into two categories. The first category explains the shift as a response to information. The second category explains the shift as an attempt to brace for undesired outcomes.

Responding to Information

The downward shift in predictions as the moment of truth draws near can reflect a response to new information bearing on the accuracy of personal predictions. The shift represents an attempt to recalibrate predictions in the direction of greater accuracy. The new information that initiates the shift may come from a) the acquisition of new data, b) current mood, or c) more careful consideration or scrutiny of existing data.

Acquiring new data. People often acquire new information as feedback approaches and this new information may prompt a revision in predictions. (Gilovich et al., 1993). For example, college sophomores, juniors, and seniors in one study predicted the starting salary of their first post graduation job three months prior to senior graduation (Time 1), and again a few weeks prior to senior graduation (Time 2). Whereas sophomores and juniors remained consistent in their predictions across time, seniors predicted a significantly lower (and more accurate) starting salary at Time 2 than at Time 1 (Shepperd et al., 1996). The decline in predictions among seniors likely stemmed from new information gained from their experiences seeking employment, from career counseling, or from the experiences of their classmates. As they gained new information, the seniors became more accurate in their predictions (see also Grace & Pennington, 2000).

People often gain a second type of information as feedback approaches—information regarding their ability to control outcomes. Optimism likely declines in step with declining perceptions of control. Initially, people may be optimistic in their predictions because predictions often contain plans and intentions. Students of social cognition have long known that plans are not just plans; plans are plans for success not failure. Plans include specific scripts and control operations for reaching goals. In the absence of empirical information, predictions of success are perfectly reasonable given the clear routes to success outlined in one's plans.

For example, weeks prior to an exam, students often have lofty plans for how they will do well. However, as the exam day approaches, the time needed to attend lectures and review sessions and read the textbook is past. Students can no longer base their predictions on what they plan to do but instead must focus on what they have done and can still do (e.g., read questions carefully, look on a neighbor's scantron, etc.) to control the outcome. In sum, the downward shift in predictions may occur as people acquire new outcome or control-relevant information up through the moment of performance.

Mood as information. Several studies find that people continue to shift their predictions downward even though they gain no new information (Shepperd et al., 1996, Studies 2 and 3; Taylor & Shepperd, 1998). The acquisition of additional information can explain this additional shift in predictions by stretching the definition of information beyond its intuitive confines. Schwartz and Clore (1988) have argued that people may treat their current mood states as a source of information on which to base predictions. People may ask, "How do I feel about it?" and incorporate their mood states into predictions. As feedback approaches, people note their increasing anxiety and infer that if they feel this anxious, it must be because they did poorly. An important point is that this perspective does not treat mood as a third variable independent of information. Rather, mood is the information that people use to adjust their predictions. In short, people adjust their predictions because they interpret their anxiety as important information about the status of their outcome (Gilovich et al., 1993).

More careful consideration or scrutiny of existing data. The shift in predictions may occur in response to more careful consideration or scrutiny of existing data in response to accountability pressures or changes how people construe events as those events draw near.

Regarding accountability, research suggests that accountability pressures increase as feedback draws near and people face the possibility that their optimistic predictions might be disconfirmed (Lerner & Tetlock, 1999). Such disconfirmation would make the initial predictions seem boastful, or may make the person look foolish either for being overly optimistic or for being unable to predict. Increasing accountability pressures spark more complex and thorough information processing, leading people to think about issues more carefully, to consider both sides of arguments, to entertain alternative outcomes, and to engage in more self-critical thinking. A consequence of high accountability pressures is a reduction in biases in perception and decision processes (Tetlock & Kim, 1987). Merely the awareness that one's predictions might be challenged can lead to less optimism (Armor, 2002; McKenna & Myers, 1997; Sackett, 2002). People may even display a pessimistic bias in their predictions under accountability pressures should they fixate on a negative subset of judgment-relevant cues (Lerner & Tetlock, 1999). For instance, predecisional accountability to an unknown audience can lead to overly negative predictions by increasing preemptive self-criticism of the initially optimistic outlook (Lerner & Tetlock, 1999).

Regarding event construal, temporal construal theory proposes that people construe distant events at a high level and construe near events at a low level (Liberman & Trope, 1998). High-level construals are more abstract and generalized, whereas low level construals are more concrete and specific. The desirability of an end-state represents a high-level construal and thus assumes greater weight in thinking about distant events. The feasibility of attaining the end-state represents a low-level construal and assumes greater weight in thinking about near events. The increased weight given to feasibility over desirability as events draw near can prompt the downward shift in predictions.

Summary. The downward shift in predictions in part reflects a response to information. The information-based explanations come in

three forms. The first information-based explanation posits that the downward shift reflects the fact that, as events draw near, people acquire new data that adds greater precision to predictions. The second information-based explanation posits that the downward shift reflects the use of current mood as a piece of information that people utilize to form and adjust their predictions. The third information-based account posits that the downward shift in predictions reflects more careful consideration or scrutiny of existing data in response to accountability pressures or temporal changes in event construal.

Bracing for Undesired Outcomes

Although declining predictions can reflect a response to new information, sometimes the shift reflects an attempt to brace for the possibility that things may not turn out as hoped. With bracing, people adjust their predictions to influence the occurrence of an undesired outcome or to manage how they feel about that undesired outcome. Bracing thus protects people against the psychological impact of an undesired outcome. Bracing has three manifestations: a) bracing reflects an attempt to avoid disappointment, b) bracing reflects a tool of magical thinking intended to influence the outcome, and c) bracing reflects the cognitive strategy of defensive pessimism.

Avoiding disappointment. Researchers have long known that people's feelings about outcomes are influenced by their expectations about the outcome. Over a century ago, William James proposed that self-esteem could be expressed as the ratio of one's successes to one's pretensions in important domains (James, 1890). Self-esteem is high when personal successes exceed pretensions, yet low when personal successes fall short of pretensions. Other theorists have made similar observations (e.g., Diener, Colvin, Pavot, & Allman, 1991; Mellers & McGraw, 2001; Thibaut & Kelley, 1959).

For many events, information or feedback bearing on the accuracy of predictions is non-existent or unavailable until the distant future. This absence of information permits considerable flexibility in predictions, allowing people to be optimistic without fear of being shown incorrect. However, when individual outcome data are available and anticipated in the near

future, people no longer have the freedom to believe whatever they wish. Instead, they face the unpleasant possibility that their positive outlook might be disconfirmed; that their expectations may exceed their outcomes. Bad news feels bad, but bad news that is unexpected feels even worse (Shepperd & McNulty, 2002).

The negative feelings that people experience when outcomes exceed expectations are perhaps best characterized as disappointment (Mellers & McGraw, 2001). As several studies suggest, people will lower their expectations as the moment of truth draws near to avoid feelings of disappointment arising from receiving unexpected bad news (Shepperd et al., 1996; Taylor & Shepperd, 1998). It is noteworthy that the durability bias—the tendency for people to overestimate the duration of the emotions they are experiencing—may magnify anticipated disappointment and thereby increase the tendency to adjust personal predictions (Gilbert, Pinel, Wilson, Blumberg, & Wheatly, 1998). As the moment of truth draws near, people's predictions of how long they will suffer in response to bad news may escalate, intensifying the need to avoid disappointment.

Bracing to avoid disappointment likely reflects the operation of two intertwined processes that occur when people anticipate a challenge to their predictions and the challenge approaches. The two processes are intertwined in that both can be a cause or consequence of the other, providing at least two possible routes to bracing for disappointment. First, as performance draws near, people may have more mental simulations of undesirable relative to desirable scenarios (Sanna, 1999), prompting increases in anxiety over the prospect of disappointment. Second, anxiety over the impending outcome may prompt mental simulations of undesirable scenarios (Sanna, 1999). In this second route, anxiety does not serve as information about the outcome. Rather, the anxiety spontaneously prompts mood congruent cognitions (Sanna, 1998), priming people to think of the ways in which the outcome may turn out poorly. Both routes lead people to modify their predictions—to brace for disappointment. Finally, it is noteworthy that shifting predictions downward may itself prompt increases in negative affect and negative mental simulations (Sanna & Meier, 2000).

We have argued that people sometimes brace

to avoid disappointment that would result should things not turn out as hoped. People may also brace to avoid regret in case their action (or inaction) fails to produce a desired consequence (Gilovich & Medvec, 1995). However, we suspect that bracing to avoid regret is less common than bracing to avoid disappointment. Disappointment is something people can feel about their outcomes, whereas regret is something people can feel only about the outcomes of their actions or inactions (Mellers & McGraw, 2001; Van Dijk, Zeelenberg, & van der Pligt, 1999). Some downward shifts in predictions occur in anticipation of outcomes that are, from the outset, completely out of personal control—events for which people have no actions or inactions to regret. For example, people likely form negative expectations prior to learning the results of medical tests that screen for genetic markers for heart disease, cancer and Alzheimer's disease, even though people have no control over their family history and thus no behavior to regret.

Magical thinking. Sometimes people believe that merely making a prediction can affect the outcome, and that predicting optimistically decreases the likelihood that the optimistic prediction will come true. People thus predict the worst to avoid “jinxing” (putting an unfavorable curse) the outcome or tempting fate (Gilovich, 2005). The belief that one's predictions can affect one's outcomes perhaps illustrates a type of magical thinking—a belief in the existence of intangible causal forces operating outside the realm of normal physical laws (Rozin & Nemeroff, 1990). Tools of magical thinking provide means of secondary control (Rothbaum et al., 1982) that people employ in an attempt to affect outcomes that they can no longer control through conventional means. Specifically, forsaking optimism in anticipation of feedback may reflect a superstitious control tactic designed to avoid provoking the metaphysical force that punishes irresponsible optimism with undesired outcomes. Like other illusory beliefs, the naïve belief that optimistic predictions can jinx an outcome may arise from overuse of the availability heuristic, or may be acquired through socialization.

It is worth noting that people need not privately believe their public pessimistic predictions. Instead, they may believe that by publicly making pessimistic predictions, they reduce or eliminate the possibility that the pessimistic

predictions will come true. As performance and feedback draw near, the relative salience of secondary control opportunities grounded in magical thinking may increase with the waning salience of primary control opportunities. The value of a superstitious control tactic would increase in step with the loss of primary control. Thus, the need to deploy this tool of magical thinking may be greatest following performance completion and prior to feedback (when primary control opportunities vanish).

Defensive pessimism. Bracing may represent the cognitive strategy of defensive pessimism (Norem & Cantor, 1986). Defensive pessimism refers to an individual difference variable akin to fear of failure (Atkinson & Raynor, 1974). Defensive pessimists are highly capable individuals who adopt a pessimistic outlook when confronting evaluation in an important performance domain. The pessimistic outlook impels defensive pessimists to achieve by redoubling their efforts to avoid failure. In short, defensive pessimists harness the anxiety arising from their pessimistic predictions into efforts to avoid the very negative outcome that they predict. Theorizing and research on defensive pessimism typically explores responses prior to an outcome. Nevertheless, defensive pessimism may play a role after the outcome. The pessimistic predictions may initiate actions that minimize the consequences of an undesired outcome.

Summary. The downward shift in predictions as the moment of truth draws near can represent an attempt to brace for undesired outcomes. Bracing can produce a shift in predictions for several reasons. First, people may brace to avoid feelings of disappointment (or perhaps regret) that occur when outcomes fall short of expectations. Second, bracing is a tool of magical thinking undertaken to avoid “jinxing” personal outcomes. Third, bracing may represent the cognitive strategy of defensive pessimism whereby people predict disaster and then channel the anxiety they experience into efforts designed to reduce the likelihood of the undesired outcome or addressing its consequences.

Preparedness and Outcome Predictions

Our discussion of why people forsake optimism as self-relevant feedback draws near focused on two broad categories of explanations:

a response to new information and an attempt to brace for undesired outcomes. Although we present these categories as distinct, we propose that they serve a single purpose—the need to be prepared. Preparedness is an adaptive goal state of readiness to respond to uncertainty. Preparedness can involve being equipped for setbacks should they occur, but also a readiness to capitalize on opportunity should it knock. In some instances it involves preparing for outcomes with very low probabilities (e.g., dying in a plane crash), whereas in other instances it involves preparing for virtually certain outcomes (e.g., becoming hungry tomorrow). However, even for outcomes that are virtually certain, uncertainty remains concerning the specific conditions that will ultimately surround the outcome (e.g., when the hunger sets in) and the ultimate consequences that the outcome will have on personal welfare (e.g., painful stomach cramps, headache, fainting). The world is filled with rapid and unexpected changes that inject some measure of uncertainty into human experience. Although the future is inherently uncertain, intuitive predictions allow people to anticipate, plan, and prepare for events before they happen.

The Priorities of Preparedness

Optimal preparation requires distinguishing “far” from “too far” by assigning priority to proximal events. Stated otherwise, the need to prepare for imminent states of the world is much greater than the need to prepare for distant future states. Students need to prepare for the college entrance exams before they prepare for the first day of class. Preparing too far in advance may compromise preparation for more immediate states of the world. This preparedness rule is exemplified in the three-shot rule of pool. Savvy pool players know that the key to controlling or “running” the pool table is to play the game 3 shots in advance. They do not just try to make a single shot, but rather the single shot that sets up the second and third shots. However, although running the table requires looking beyond the single shot, looking beyond the third shot requires predicting too far in the future. Such hyper-extended outlooks overtax cognitive resources and introduce constraints that undermine the ability to make that first shot. Playing within the three-shot bandwidth

permits the fluid adjustment required to run the table. As in the game of pool, premature preparations for the distant future before the immediate future compromises the flexibility needed to run the table of life.

Being prepared demands readiness for different things at different times. Sometimes being prepared involves maintaining optimism to maximize potential opportunities. When self-relevant feedback is unavailable or distant, optimism advances self-enhancement goals that organize activity around the pursuit and acquisition of environmental opportunities. Other times being prepared involves modifying one's outlook in response to new information, calibrating predictions toward greater accuracy. As people anticipate a forthcoming performance, realistic outlooks advance accuracy goals organize thought and action around the effective assessment and response to potential sources of change in the local environment. And at still other times, being prepared involves readying oneself for undesired outcomes. As feedback becomes imminent, pessimism advances self-protection goals that organize activity around minimizing the impact of undesired outcomes.

Unifying the Different Explanations for the Shift Under Preparedness

Preparedness provides the common thread that ties together the different reasons we have reviewed for the shift. For example, preparedness can accommodate each of the information-based explanations for the shift in predictions. For example, preparedness can entail altering expectations in light of new information with the aim of achieving greater predictive accuracy so that one is ready to respond to what lies ahead. Being prepared can also entail using current mood as an important indicator of what is likely to happen. Rising anxiety stimulates and guides a response to a potential source of change in the local environment (e.g., receiving a failing test grade). In the absence of more detailed informational guideposts, moods provide people with at least some sense of the current and unfolding states of the world around them.

Preparedness can also accommodate the information-based models based on more careful consideration or scrutiny of existing data. For example, the accountability model assumes that

people must be able to defend their position relative to alternative positions when accountability pressures build. At times, these accountability pressures may even prompt preemptive self-criticism in which people focus on the weaknesses in their position to the relative neglect of strengths. Although unpleasant, preemptive self-criticism makes perfect adaptive sense when one considers that challenges typically target weaknesses rather than strengths in a given position. The more careful and complex processing induced by accountability pressures prepares people to respond to challenges even to the weakest points in their position. Finally, preparedness can accommodate the transition between desirability and feasibility in the temporal construal of events. As noted earlier, premature preparedness would not only channel people's mental resources away from more pressing situations, but excessively restrict their behaviors to one distant future. In so doing, people would invest all resources in one future possibility while at the same time prematurely ruling out viable alternative prospects as they arise. The distant future is so uncertain that to try to impose reality concerns on it may be an inefficient strategy at best and a dangerous one at worst. Thus, people simply aim their future course in the general direction of desirable horizons initially with little consideration for ultimate feasibility.

As with the information-based accounts, preparedness can also accommodate each of the bracing-based explanations. With avoiding disappointment or regret, people prepare for the anticipated emotional consequences of an undesired outcome. For example, bracing to avoid disappointment prepares people for the impact of bad news by taking away the element of surprise. Magical thinking and defensive pessimism represent attempts to prepare for undesired outcomes proactively rather than dealing with the aftermath. With magical thinking, the preparatory actions entail making pessimistic predictions so as to avoid tempting fate (Gilovich, 2005). Although unorthodox, these tools of superstitious control pick up where conventional control tactics leave off as a response to subjective uncertainty. With defensive pessimism, people prepare for undesired outcomes by channeling their negative emotional energy toward avoiding the undesired outcome or dealing with the consequences.

Thus far, we have explored how downward shifts to prepare for potential threat or setback. Preparing for threat no doubt takes priority over preparing for opportunity. If one is unprepared to respond to imminent threat, being prepared for opportunity may not matter because the organism may not survive long enough to enjoy it (Taylor, 1991; Bradley, 2000). Nevertheless, on occasion people will display upward shifts in preparation for potential opportunity. For instance, the value of negative outlooks diminishes as imminent threat passes and priority shifts to positive outlooks that promote resource acquisition and personal growth.

As with downward shifts, upward shifts may occur for different reasons. First, the upward shift may reflect a response to new information. People may gain information that their initial prediction was too conservative, or they may regard their positive mood as information that a more optimistic prediction is in order. Second, the upward shift can represent proactive coping processes designed to avoid or mute the impact of the impending stressor. Proactive coping differs from defensive pessimism in that it involves an optimistic future outlook and entails the mobilization of positive emotional energy arising from viewing a potential stressor as a challenge (rather than threat) that one can master and overcome. The positive emotional energy fuels action to avoid or mute the impact of the stressor (Aspinwall & Taylor, 1998).

Third, the upward shift may occur in response to available opportunity. For example, people may display an upward shift toward optimism following commitment to a course of goal-directed action (Gollwitzer & Kinney, 1989). In the predecisional phase of action, people assume a deliberative mindset characterized by a realistic outlook in which they carefully evaluate alternative options and plans for goal-pursuit. Following commitment, however, people shift to an implemental mindset that prepares them for effective goal-pursuit by gearing information processing away from alternative courses action toward issues bearing on goal-attainment (Gollwitzer & Kinney, 1989).

Over the life span, opportunities for personal growth may become especially abundant as people approach developmental transitions (e.g., college). Seizing opportunity, whether in romance or career, involves the projection of a desired self actually realizing that opportunity

in the future. Desired selves serve to organize, direct, and energize activity around their pursuit and acquisition (Markus & Ruvolo, 1989). Indeed, the initial construction of a desired self will increase optimism for the image by increasing the availability of goal-consistent cognitions (Gregory, Cialdini, & Carpenter, 1982; Markus & Ruvolo, 1989). Thus, the aspiring undergraduate who dreams of becoming a psychology professor will experience an initial rise in optimism as she constructs the image of herself holding office hours, giving lectures, and writing grants. With further elaboration of the desired self, this initial wave of optimism will continue to rise as the global image begins to generate task-specific images complete with intentions, plans, and scripts (applying to graduate school, taking GRE) that mentally bridge the gap between the present self (student) and the desired self (college professor). Thus, the construction and elaboration of desired selves increase feelings of competence and optimism to prepare to capitalize on emerging opportunity.

An upward shift to optimism can also serve preparedness via the construction of new opportunity as well as the acquisition of available opportunity. According to the Broaden and Build Theory (Fredrickson, 2001), positive emotions give rise to optimism and optimism can cycle back to enhance positive emotions. More importantly, the positive emotions enhanced by optimism not only feel good in the moment, they also carry long-term benefits by initiating the construction and acquisition of new resources and opportunities (Fredrickson, 2001). For example, positive, optimistic outlooks broaden the mental field of response possibilities to enable people to generate new solutions to old problems as well as simulate new opportunities that lie ahead. Positive, optimistic outlooks can also inspire feelings of pride and the imagination of even larger future opportunities ("Why settle with this future if an even better future?").

As with the downward shift, features in the person or situation can moderate when and to what extent people will show the upward shift in response to information, impending stressors, or emerging opportunity. For example, momentary approach goals or dispositional approach motives may enhance the upward shift in response to new information indicating a more optimistic outlook is in order (Elliot & Church,

1997). Similarly, a momentary or chronic promotion focus may accelerate the upward shift to ensure successful acquisition of opportunity whereas a momentary or chronic prevention focus may impair the upward shift to avoid unsuccessful acquisition of opportunity (Higgins, 1990).

The value of preparedness lies in its potential as an organizing framework that unifies the various explanations of predictive shifts. Although unity should not override other criteria (e.g., internal consistency) in theory evaluation, there is no viable reason to forego the logical force afforded by a single unifying principle so long as it can still capture the subtle nuances in each isolated theory. Although people may occasionally shift their predictions for reasons that have little to do with preparing for what lies ahead, we suspect that the lion's share of reasons for fluctuations in future outlooks can be accommodated under the need to be prepared. The individual explanations we have reviewed focus on specific motives, cognitive mechanisms, or a combination of motives or mechanisms. Preparedness as an adaptive goal rather than specific motive or cognitive process has a pragmatic flavor that situates the various explanations in their appropriate adaptive context while at the same time, proposing a single, unifying principle. The issue is not whether the shift represents a response to new information, accountability pressures, construal shifts, or even bracing for undesired outcomes. These apparently disconnected explanations are connected under preparedness.

The Nature and Integrity of the Shift

Gradual and Punctuated Shifts in Outlooks

The downward shift is a response to a challenge to their predictions presented by additional information or recognition that things may not turn out as hoped. The challenge to predictions can come gradually or all at once. It is gradual when the information comes in dribbles, or when accountability pressures, anxiety, and the recognition of the possibility of an undesired outcome gradually build. Because the challenge to predictions can range from gradual to abrupt; consequently, so too can the shift. People may shift their outlook gradually across

moments (gradual shifts), or more abruptly in a single moment (punctuated shifts). Punctuated shifts are illustrated in a brief newspaper article distributed by the associated press on August 17, 1995 reporting the disappearance of a group of climbers in an avalanche in Pakistan. The husband of one of the missing climbers reported that, "He hadn't given up hope for his 33-year-old wife's survival, but he was steeling for the worst" ("Mountain Climbers," 1995). The husband's shift in outlooks did not occur gradually across moments, but rather occurred at the instant in which he learned of the avalanche. Preparedness imposes adaptive logic on fluctuations in future outlooks both across moments and in the moment.

The Integrity of the Shift

Does the shift in predictions represent a transient response to the immediate situation or an enduring response that perseveres after the press is removed? Given the prominent role played by anxiety, the shift most likely represents a transient response that does not persist but decays over time. This position has intuitive appeal given the prominent role of mood in many of the explanations we reviewed. For instance, the finding that rising anxiety precipitates lowered expectations implies that reductions in anxiety, perhaps in response to changes in the mood-inducing stimuli and the passage of time, would produce a drift in expectancies back to the ambient state of optimism. One might imagine that information-based explanations would assume greater permanence to the shift. However, cognitive factors such as salience and construal ensure that the available information, as well as emotion, may shift dramatically across time (Liberman & Trope, 1998). Thus, even information-based explanations suggest that the predictive shift is transient and decays as soon as the phenomenal field of information changes.

Predictions about the future are transient because they represent a probabilistic estimate of what is most likely to happen rather than a clear vision of what will transpire. People acknowledge that the future is uncertain and that a range of outcomes can occur. A parallel idea appears in the notion of latitude of acceptance advanced by social judgment theorists (Sherif & Hovland, 1961). People most likely simulate a subjective range of outcomes that they accept as plausible,

and then select a point from this range to express their best estimate. Although the range of plausible outcomes may be relatively stable, the specific point within that range may shift across time and situation. For example, although a person may predict receiving a 78 on an exam, 78 most likely represents a point estimate selected as the best guess from a wider range of plausible values at a given time point. The person in fact may think, "My best guess is a 78, but in reality, my grade could be as low as a 70 and as high as an 83, depending on how I did on the items where I guessed." As the moment of truth draws near, people shift their predictions downward in response to new information or in response to increasing salience of the possibility of an undesired outcome. As proximity to the event decreases, people construe events more abstractly, focusing on desirable rather than feasible outcomes, and the salience of worst-case scenarios give way to better prospects. Shifts in predictions across time represent a natural response to changes in the prevailing informational and emotional context that maximize preparedness for possible outcomes and consequences.

Fluctuations in predictions across time should not be taken as evidence of self-deception at one of the time points. Such a claim would be akin to saying that fluctuations in how people think about themselves across time and in different situations constitute evidence of inauthentic selves. As with any self-representation, self-relevant predictions made across time should not be evaluated against each other in terms of validity. The negative expectation expressed at the moment of truth is likely no less (or more) valid than the positive expectation one month earlier. Rather, the various predictions represent best guesses out of a range of plausible guesses at their respective time points. Shifts in predictions most likely reflect people's appreciation of the fallibility of their own predictions rather than an inauthentic or self-deceptive response. People are not engaging in self-deception provided they remain within the boundaries of plausible outcomes. An exception to this position emerges in superstitious control explanation with the magical thinking explanation, where pessimistic predictions may not be genuine reflections of internal expectations but merely symbolic verbalizations made to avoid upsetting the

metaphysical agents that detest and punish irresponsible optimism.

Conclusions and Future Directions

In everyday life, optimism seems pervasive and the benefits of an optimistic outlook are well documented. Nevertheless, people show instability in their future outlooks (Shepperd, Helweg-Larsen, & Ortega, 2003), and a growing number of studies reveal that people will display less optimism as the moment of truth draws near. A variety of factors moderate the shift in outlook. First, people must be capable of perceiving the link between expectations and feelings. Second, the shift in outlooks is more likely when the situational press is strong (i.e., when performance and feedback are proximal, when the outcome is consequential, and when they perceive no control over the outcome or its consequences). Third, people with low levels of self-esteem are more likely to change their outlook, possibly due to lower self-certainty. The downward shift in outlook may reflect a response to new information or may be an attempt to brace for undesired outcomes. Similar to downward shifts, upward shifts may also represent a response to new information, but may also represent a desire to capitalize on or create new opportunity. Shifts in future outlooks serve the larger goal of preparing people for uncertainty.

Our review reveals gaps in research and directions for future investigations particularly with regards to bracing. One topic that awaits further research is the development of bracing. Specifically, when during development do people learn to brace? Similarly, what change during development prompts the acquisitions of bracing in one's behavioral repertoire? That is, do children learn the value of bracing from experience or does the acquisition of bracing depend more on the capacity of mental simulation and the realization that expectations influence feelings about outcomes. Both of these cognitive capacities may rely on cortical developments that do not reach fruition until adulthood.

A second direction involves how we conceptualize the resulting shift. Although we have focused exclusively on the change in expectations that occurs when people anticipate a challenge to an optimistic outlook, the net can be

cast more broadly to include other cognitive changes such as a change in what people define as good and bad, or acceptable and unacceptable. This shift in standards, or lowering of the bar, represents an alternative way to cope with challenges to outlooks and may occur in a variety of settings. For example, students may change their definition of what represents a good versus bad grade through the course of a semester. Likewise, a woman recently diagnosed with breast cancer may adjust over time her goal from “beating cancer” to “living with cancer.” Challenges to future outlooks may even prompt people to adjust how they think about themselves from a broad, flattering self-view grounded in optimistic expectations, to a narrower, more circumspect self-view grounded in a realistic appraisal of current achievements. Although departures from optimism likely represent a temporary expectancy change, a change in standards or self-views may be more permanent.

Third, it is unknown whether shifts in outlook represent a universal phenomenon, occurring in other cultures. Thus far, all studies of shifts in outlook have occurred in North America and Europe, and may in fact be limited to individualistic Western societies. People in other cultures may not share the tendency to anticipate positive outcomes found in Western countries and, hence, have less room for a downward shift in expectations at the moment of truth. Japanese, for example, are more self-critical (Heine & Renshaw, 2002) and show less need for positive self-regard (Heine, Lehman, Markus, & Kitayama, 1999). Perhaps these characteristics translate into less optimistic expectations about the future. If people in non-Western cultures are generally less optimistic about the future, they may have less need (or less room) to shift their predictions in anticipation of feedback.

Alternatively, disappointment is undoubtedly a universal emotion, and outcomes that fall short of expectations likely feel bad regardless of culture. Even should Japanese be less optimistic in general, they still face the possibility that even their modest initial predictions might be disconfirmed. Moreover, Japanese aspire to *gambaru*, a need to do one’s best, and are highly sensitive to negative self-relevant feedback (Heine et al., 1999). For example, cross-cultural studies suggest that Japanese participants perceive tasks as more important and diagnostic

when they lead to failure compared to success (Heine et al., 2002). The premium they place on doing well coupled with their sensitivity to negative self-relevant feedback suggest that Japanese would be no less likely than people from Western cultures to lower their predictions in anticipation of feedback. Finally, although the definition of a negative outcome varies across cultures (e.g., outperforming others may be desirable in individualistic but not in collectivistic cultures), shifts to avoid disappointment should occur as long as disappointment is possible. In addition, some outcomes (e.g., cancer diagnosis) are negative regardless of culture.

Fourth, are shifts in outlook strictly a personal phenomenon, or will people shift their predictions for others? Empathic experience may permit people to share in the anxiety that others feel in anticipation of feedback, and this empathic anxiety may prompt less optimism for another’s impending outcomes. Alternatively, if another’s outcome has no personal repercussions, people may have little need to shelve their optimism because the other’s outcome will have no implications for personal well-being. Even among friends, where often there is some modicum of mutual investment in outcomes, people maintain their optimism. After all, friends often seem to share an obligation to show a positive face and promote a positive outlook.

Preliminary evidence from our lab suggests that people do not reduce their optimism in anticipation of a close friend’s outcome, but rather maintain a rosy outlook, even when feedback is imminent. Moreover, although people report considerably more disappointment when personal bad news comes as a surprise than when it is expected, they report little disappointment in response to a close friend’s bad news regardless of whether that news was expected or a surprise (Carroll, Dockery, & Shepperd, 2005). Of course, it is possible that culture affects the tendency to become less optimistic for the outcomes of close others. Research suggests that people in collectivistic cultures experience the self as part of a group, emphasizing relatedness over autonomy (Markus & Kitayama, 1991). As such, the outcomes of other in-group members have greater personal implications. Accordingly, people from collectivistic cultures compared to people from individualistic cultures might be more inclined to

adjust their predictions when others from their group are receiving important feedback.

Fifth, we noted earlier that whether people reduce their optimism depends on the ease with which people can imagine undesirable alternative outcomes. Presumably, common negative events, because of their greater frequency and thus greater availability in memory, will prompt less optimism than rare events. Alternatively, the opposite may be true. By their very nature rare events are less frequent and thus less expected. Because they are less expected, rare events have a greater capacity to create disappointment should they occur. The consequence is that people might display less optimism for rare compared to common events.

Sixth, more research is needed to explore the role that perceptions of control play in the shift in predictions. Although perceived outcome control presumably declines as feedback approaches, how the decline affects people's expectations remains unclear. We suspect that people may lower expectations because declines in control mean they have a diminished ability to affect the outcome. Indeed, the downward shift in expectations reflects a type of secondary control, that is, an attempt to control one's feelings rather than the outcome. Even when primary control is removed, as when a performance is complete, people may nevertheless hold a superstitious belief that they can still exercise some control over the outcome. As we noted earlier, people may alter predictions to avoid "jinxing themselves" with optimistic predictions.

Finally, and perhaps most importantly, we recognize the need to expand the research agenda beyond its currently exclusive antecedent focus to explore the consequences of prediction shifts. We have suggested that shifts in predictions allow people to better prepare for uncertain outcomes. Little empirical evidence, however, examines this claim. Future research could examine whether people who shift their predictions at the moment of truth are better prepared for what lies ahead that people who do not shift. That is, do people who shift their predictions downward from optimism respond better emotionally and cognitively in the wake of bad news? Likewise, future research could examine whether people who shift upward to greater optimism respond to and capitalize on emerging opportunity with greater efficiency

and efficacy. Finally, future research could examine whether blocking mood-based inferences in predictive adjustments impairs the speed and quality of response to feedback.

Conclusion

We now revisit Voltaire's eternally optimistic character. Although, like *Candide*, people often believe the best about themselves, the present review suggests that, under certain circumstances, people revise their positive outlooks downward. The tendency to believe that "all will be well" is overpowered in the face of imminent feedback and prospect of disconfirmation. In the final analysis, fluctuations in future outlooks serve the adaptive need of preparedness.

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