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Improving Predictions of Future Emotions

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Imagine the following situation: You are sitting in front of the television, lottery ticket in hand. As the woman on screen announces the lucky numbers of the day, you realize you have a perfect match. You won the multimillion-dollar jackpot. How happy would you be? How long would you feel this way? According to research on affective forecasting, most people will incorrectly predict these feelings. Specifically, people tend to overestimate the intensity and duration of their emotional reactions, a phenomenon known as the impact bias (Wilson & Gilbert, 2005).   The impact bias also occurs for predictions about events people routinely experience, such predicting the emotions after their favorite football team loses, or deciding how much they would enjoy a particular snack (Blumenthal, 2005).

In a recent Decision Consortium seminar, Andrea Angott presented research on the role of affective forecasting in decision making. Incorrectly assessing future emotions could have important consequences for decisions based on that assessment. For example, if someone predicts a needed medical treatment will severely impair their quality of life more than it actually would, they might not get a treatment that would be in their best interest. However, it is currently unknown whether people routinely base decisions on this faulty affective forecasting. The goal of Angott's research was to determine if asking participants to forecast their emotions would change their decisions.

In one study, participants were told they would be given $5 if they picked a red marble out of a jar of mostly white marbles. They were asked which jar they would like to pick out of, one containing 9 red marbles out of a 100, or another jar containing 1 red marble out of 10. While the rational decision would be to pick from the 1 out of 10 jar because the probability of picking a red marble is higher, people who were asked to forecast their emotions had an

increased tendency to pick from the 9 out of 100 jar. These results indicate that affective

forecasting can influence decisions in an undesirable way.

If we are faulty predictors of our own future emotions, and these predications can lead us

to make bad decisions, it seems important to ask whether there is a way to improve our affective

forecasting abilities. Can we learn to become more accurate at predicting our emotions? This

paper will present several biases that contribute to erroneous forecasting, as well as research on

effective techniques to increase forecasting accuracy. Individual differences in the ability to

accurately predict emotions will also be discussed.

<div align="center">Biases in Affective Forecasting</div>

The Impact Bias

When people are asked to predict their emotional reactions to an event, they can predict

both the valence of their emotions and the specific emotions they would feel with a high level of

accuracy.   However, people they tend overestimate how intense their emotions will be and how

long they will last. The impact bias occurs for predictions about both positive and negative

emotions, as well as for many different types of events (Blumenthal, 2005). One intuitive cause

of inaccurate predictions is a lack of familiarity with the target event, such as in the lottery

example mentioned in the introduction. The future tends to transpire in ways people do not

expect, especially for events they have not experienced before. If people imagine the event far

differently from how it actually turns out, it seems likely that their predicted emotions might also

be different from their actual reactions.

It is surprising that the impact bias also occurs for affective predictions about events

people have experienced. When college football fans were asked to make predictions about their

emotions following a game, the students overestimated how long their reactions would last

(Wilson, Wheatley, Meyers, Gilbert, & Axsom, 2000). Even for routine or familiar events, forecasting errors can arise when the imagined situation does not match the actual situation. The way people frame the event when imagining it could cause them to misconstrue their emotions. For example, when imagining the target event, people will picture it occurring in isolation, while the actual events do not take place this way (Dunn & Laham, in press). This occurrence is known as focalism (Wilson et al., 2000).   Imagining the event out of its context leads to an underestimation of the extent to which outside events will influence one's mood and cause the impact bias in predictions.

Several studies have looked at ways to reduce focalism in forecasting. Before football fans predicted how they would feel if their team won a game, Wilson et al. (2000) asked them to write about activities they would be doing on a specific day in the future. Participants who were given this writing task made more accurate affective forecasts than those who just made predictions. Additional techniques that reduce focalism include asking people to list other things that influence their feelings (Hsee & Hastie, 2006; Wilson & Gilbert, 2003) and asking participants to think about past responses to a wide range of similar events (Dunn & Laham, in press). Even priming participants with the concept of change by presenting them with a negatively sloped line graph was enough to increase predictions that their emotional reactions will dissipate quickly (Dunn & Laham, in press).

Another contributor to the impact bias is a limited understanding of our sense-making ability.   Humans possess powerful "psychological immune systems" that serve to rationalize negative events, allowing us to cope by reducing our emotional reactions to them (Dunn & Laham, in press). We are largely unaware of this ability, a phenomenon referred to as "ordinization neglect" (Wilson & Gilbert, 2003). Failing to realize how quickly emotions return

to baseline leads to overestimations of how long and intense emotional reactions will be. Ordinization neglect is reminiscent of a common bias in judgment called misconceiving regression towards the mean (Tversky & Kahneman, 1974). People's behaviors, and in this case their emotions, tend to regress towards a mean value or baseline. Despite being ubiquitous in life, people do not develop a concrete sense of nature of this phenomenon. Just as the concept of regression to the mean remains elusive for most people, so does the occurrence of ordinization neglect; it seems that we are unable to learn of our apt ability for recovery from our past emotional reactions.

The Projection Bias

A second cause of errors in affective forecasting is the projection bias. When predicting future emotions, people will project their current state on to what they think they will feel at a later time (Hsee & Hastie, 2006). If the emotional, visceral, or motivational state of a person while forecasting does not match the state they are in while experiencing the event, there will be an "empathy gap" between their forecasting and experiencing selves. The empathy gap results from a misunderstanding of how they will feel in different states; people fail to recognize the differences in their emotions and desires when in different visceral or emotional states (Dunn & Laham, in press). While this is especially salient for high arousal emotional states compared to low arousal states, differences in other bodily conditions can affect forecasting as well. For example, when people grocery shop after a big meal, they will mispredict what they will want to eat when hungry, and vice versa (Hsee & Hastie, 2006).

Affective forecasting errors due to empathy gaps are harder to reduce than those caused by focalism. One strategy is to try to place oneself in a similar state when trying to predict emotional reactions as when the event will be experienced (Dunn & Laham, in press).   Wilson

and Gilbert (2003) also suggest that evaluating and cognitively ruling out biases due to one's

current state may also make predictions more accurate. For example, if someone is sick, and

trying to decide whether or not to accept an invitation to an event in the following month, their

predictions about how they would feel at the event might be tainted by currently having a cold,

and be construed as more negative than they actually would be.   Recognizing the fact they most

likely will not be sick when the event occurs, and thus have a more positive outlook, might

increase the accuracy of their predictions.

The Memory Bias

It seems logical that recalling how we have felt after certain events could help inform

predictions about our emotional reactions to a similar future event.   However, memories are also

subject to systematic biases that can lead to forecasting errors. For example, certain experiences,

such as pain, are not stored in memory and are therefore not remembered in the same way they

were experienced (Wilson & Gilbert, 2003). Affective experiences are also recalled with bias;

they are influenced by the peak intensity of the emotion we experienced, as well as the amount of

emotion experienced at the end of the event. This is referred to as the peak-intensity hypothesis

(Hsee & Hastie, 2006; Wilson & Gilbert, 2003). Because these instances are more easily

recalled when people are thinking about past events, they tend to influence predictions about

future reactions, even through they might not be representative of the entire experience. The

types of events people recollect when thinking about similar experiences are also not

representative of actual experience. In particular, people tend to remember atypical events more

than typical ones (Morewedge, Gilbert, & Wilson, 2005). For example, when asked to predict

how they will feel on Christmas, people tend to recall memories of the Best Christmas Ever, or

the opposite, rather than a typical Christmas experience. This tendency influences predictions about the upcoming holiday and contributes to forecasting inaccuracies.

Recalling several examples of similar past events, rather than one particular instance, can reduce the impact of the memory bias. In a study by Morewedge et al. (2005), train passengers who recalled several instances of missing a train produced more moderate affective forecasts about how they would feel if they missed their train in the future compared to those who were asked to recall one instance. When people were specifically asked to recall the best or worst instance of missing the train, they also produced more moderate affective forecasts than those who were just asked to recall any instance (Morewedge et al., 2005). This suggests that cognitively labeling a recalled instance as atypical can reduce extreme affective forecasts, and increase the accuracy of their predictions.

While there have been considerable amounts of research on techniques to decrease various biases associated with forecasting, it is unclear whether improved accuracy in predictions extends beyond that particular instance. Are there ways to increase the *ability* to forecast, rather than improving accuracy of a specific affective forecast? Evidence of individual differences in forecasting ability may shed light on this question.

<div align="center">Individual Differences in Affective Forecasting</div>

Cultural Differences

Although most affective forecasting studies have used predominantly Western samples, it has been hypothesized that cultural differences may exist in the prevalence of the impact bias. Particularly, East Asians might be less susceptible to focalism during affective forecasting because of their tendency to think holistically, rather than analytically (Lam, Buehler, McFarland, Ross, & Cheung, 2005). This may facilitate increased attention to other events and

circumstances outside the target event when predicting emotional reactions, enabling them to recognize that other things will influence their emotions. Lam et al. (2005) investigated this hypothesis using samples of East Asians and Euro-Canadians. When asked to predict their level of happiness when the weather became warmer, East Asians, compared the Euro-Canadians, had more moderate affective forecasts; they were less prone to the impact bias. The researchers also found that when making affective forecasts, the Euro-Canadians focused more exclusively on the target event than the East Asians did (Lam et al., 2005).

While there are undoubtedly more differences between East Asians and Euro-Canadian than their tendencies to think holistically, this finding is important because it suggests there are differences in the ability to forecast accurately. It would be interesting to see whether a reduction in focalism is prevalent in other groups that stress interconnectedness, such as Buddhists and other holistic religious sects, or if training in holistic thinking would increase forecasting ability. It might also be plausible that differences in social relations can reduce the impact bias as well. Perhaps the emphasis on community in East Asian cultures causes them to recognize social relationships as an influencer of mood rather than events, facilitating more moderate and accurate affective forecasts.

Trait Differences

An important component in determining whether forecasting ability can be improved is to look for a meaningful way to predict individual differences in accuracy. Because erroneous affective forecasts are associated with a failure to understand the vast cognitive and emotional differences between forecasting and experiencing states, it has been suggested that individuals high in emotional intelligence (EI) may be more accurate forecasters (Dunn, Brackett, Ashton-James, Schneiderman, & Salovey, 2007). Using the ability based Mayer-Salovey-Caruso

Emotional Intelligence Test (MSCEIT), Dunn et al. (2007) found that EI scores significantly predicted forecasting accuracy across a range of events, from the 2004 presidential election to receiving the results of an exam. In particular, the Emotion Management (EM) component of the test was the best predictor of forecasting ability. Individuals who score high in the EM component may be more able to recognize how they will adjust their reactions after emotional events, enabling them to realistically predict their emotions (Dunn et al., 2007).

This finding brings up the question of whether EI can be improved, and if so, would enhancement of EI translate to increased affective forecasting abilities. While research in the domain of affective forecasting has yet to move in this direction, the importance of EI for effective business leadership and classroom learning has encouraged the development of programs to increase abilities closely related to EI. A study by Boyatzis, Stubbs, and Taylor (2002) found that a required MBA graduate course aimed at improving managerial and leadership competencies in students increased both emotional intelligence and cognitive abilities crucial to these skills. However, this study did not use the MSCEIT to assess changes in EI, so it is unknown whether the MBA program increased skills that would transfer to affective forecasting abilities. Positive results have also been found for educational programs developed to increase emotional intelligence in school-aged children; however, similar caveats apply to these programs as the MBA versions. In most of these programs, skills are taught that are related to EI, such as problem solving and good citizenship, but are not EI itself (Humphrey, Curran, Morris, Farrell, & Woods, 2007).   Inconsistencies in measurements of EI also make it hard to generalize these findings to affective forecasting.

Age Differences

It seems intuitive that life experience might play a role in the ability to predict emotional reactions; however, there have been very few studies investigating changes in forecasting ability at different ages. Unpublished research by Wilson, Gilbert, and Salthouse (2001) suggest older adults might be better at affective forecasting than their younger counterparts (as cited in Wilson & Gilbert, 2003). When asked to predict reactions to a wide range of events, adults over age 60 predicted shorter durations of emotional reactions than younger adults, with a negative relationship between age and duration. The older the participants were, the shorter they predicted their reactions would last (Wilson & Gilbert, 2003).   Although this study was limited because data about their actual reactions to the events were not collected, the results suggest that older adults might be less susceptible to the impact bias and forecasting errors. More studies are needed to address age-related changes in forecasting ability and the mechanisms behind it.

<div align="center">Conclusion</div>

This paper reviewed the major biases associated with affective forecasting errors, as well as techniques that have been used to increase prediction accuracy. However, it is unclear whether these techniques can improve overall forecasting ability. Future studies are needed to address the long term potential of techniques to reduce biases related to focalism, memory recall, and empathy gaps in subsequent affective forecasts. Studies investigating individual differences in forecasting accuracy may illuminate ways to improve this ability by increasing holistic thinking or emotional intelligence. Whether cultural, trait, and age related differences in forecasting abilities are related to a common underlying factor also remains to be seen. It is possible that East Asians and older adults are higher in emotional intelligence components related to affective forecasting. While there is some evidence that emotional intelligence increases with age (Mayer, Salovey, & Caruso, 2004), the connection between cultural, trait, and

age related differences in affective forecasting ability has yet to be elucidated. Can we learn to become better affective forecasters? Further research is needed for a definitive answer, and hopefully it will be as satisfying as I predict.

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