Examining Affective Forecasting and its Practical and Ethical Implications

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BSc Psychology
2009

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# Contents

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Introduction</td>
<td>1</td>
</tr>
<tr>
<td>1. Affective Forecasting – What do we know?</td>
<td>1</td>
</tr>
<tr>
<td>2. Biases – Why people cannot predict their emotions accurately</td>
<td>3</td>
</tr>
<tr>
<td>2.1 Impact Bias</td>
<td>3</td>
</tr>
<tr>
<td>2.2 ‘Focalism’</td>
<td>4</td>
</tr>
<tr>
<td>2.3 Immune Neglect</td>
<td>4</td>
</tr>
<tr>
<td>2.4 Dissimilar Context</td>
<td>4</td>
</tr>
<tr>
<td>3. The Self-Regulating Emotional System</td>
<td>5</td>
</tr>
<tr>
<td>4. Affective Forecasting Applied</td>
<td>6</td>
</tr>
<tr>
<td>4.1 Healthcare</td>
<td>6</td>
</tr>
<tr>
<td>4.2 Law</td>
<td>7</td>
</tr>
<tr>
<td>5. Can AFing be improved?</td>
<td>8</td>
</tr>
<tr>
<td>6. Ethics: Should people be taught to forecast more accurately?</td>
<td>10</td>
</tr>
<tr>
<td>Conclusions</td>
<td>12</td>
</tr>
<tr>
<td>References</td>
<td>13</td>
</tr>
</tbody>
</table>
Examining Affective Forecasting and its Practical and Ethical Implications

Introduction

Emotions are important in guiding thoughts and behaviour to the extent that they are used as heuristics (Slovic, Finucane, Peters & MacGregor, 2007), and are crucial in decision-making (Anderson, 2003). Affective forecasting (AFing) concerns an individual’s judgemental prediction of their or another’s future emotional reactions to events. It is suggested that “affective forecasts are among the guiding stars by which people chart their life courses and steer themselves into the future” (Gilbert, Pinel, Wilson, Blumberg & Wheatley, 1998; p.617), as our expected reactions to emotional events can assist in avoiding or approaching certain possibilities. We can say with certainty that we will prefer good experiences over bad (ibid); however AFing research demonstrates that humans are poor predictors of their emotional states, regularly overestimating their reactions. Further investigation of these findings shows that they may have critical implications outside of psychology.

If emotions are so influential on behaviour, why are people poor at AFing? Furthermore, can and should individuals be assisted in forecasting their emotions? These issues, along with the function of AFing in practical applications, are to be considered and evaluated.

1. Affective Forecasting – What do we know?

“’Tis nothing either good or bad, but thinking makes it so.”

– Shakespeare; Hamlet (in Gilbert, 2004)

Humans are particularly poor at predicting the intensity and duration of future emotions, an error which is sustained across a variety of contexts. As identified by Shakespeare, emotions are expected to be much more intense than is true. Gilbert et al (1998) demonstrate this with predicted reactions to a wide range of hypothetical emotional events, including the death of a child, relationship break-up and negative personality feedback. In a recent study of AFing, Smith et al (2008) found that prospective kidney transplant patients overestimated the emotional consequences to Quality of Life (QOL) that the operation would bring, and those
interviewed afterwards underestimated their pre-operation QOL. This demonstrates the transfer of the Affective Forecasting Error (AFE) to positive events and retrospective emotions; however Smith et al (2008) only completed a full longitudinal study on a small subset of participants.

One might conclude that AFEs are likely when considering rare or traumatic experiences, when it would be understandable that people are inaccurate in assessing the impact such an event will have on their life. However, Ayton, Pott and Elwakili (2007) show that AFEs persist for more common events, even when individuals have had previous experience of the event. Driving test failers consistently overestimated the duration of their negative affect, regardless of previous experience of the event. Furthermore, women are unable to accurately predict distress caused by such a common event as menstruation (Ross, 1989). The emotional consequences of these more common events are subject to the same AFE as a major operation. Nevertheless, Nielson, Knutson and Cartensen (2008) imply that AF-ing might improve with long-term practice, as elderly participants appear able to make more accurate predictions than younger people.

AFEs also exist in real-time estimations of emotional reactions to current events. Dunn and Ashton-James (2008) found that, in the wake of Hurricane Katrina in August 2005, people asked to report their sadness over different death tolls as the catastrophe developed gave similar ratings regardless of the death toll. Conversely, participants who were asked to predict their sadness over varying death tolls of an approaching hurricane gave significantly worse ratings for higher death tolls. This was attributed to a false ‘rational mindset’, which assumes we would feel sadder if more people died. However, one could deduce that the forecasts of emotional responses were inaccurate, and that we have an ‘emotional baseline’ which correctly served to give similar responses to the tragedy regardless of overall scale. This may, as some researchers have suggested, be part of our Psychological Immune System (PIS, Gilbert et al, 1998). This ameliorates the individual’s emotional reactions to events by “milking their glories and rationalizing their failures” (p.619), allowing the person to remain content.

A prime example of the results of the decision-making that may result from poor AF-ing is given by Morewedge, Gilbert and Wilson (2005) and Gigerenzer (2004; 2006) with regard to the ‘9/11’ disaster. Air travel fell by 18% in the immediate aftermath of the attack
(Morewedge et al., 2005; p.629), suggesting that people were frightened by this incredibly rare occasion, attempted to avoid it, and ignored the likelihood of it recurring. Moreover, they neglected that alternative forms of travel offered a significantly higher risk. It is estimated that 1,595 road accident deaths were accounted for by the avoidance of air travel in late 2001 (Gigerenzer, 2006; p.350), a direct result of people’s inability to rationalise their decision-making, and allowing unaccountable fear to govern their actions. Whilst one might think of this event as such an exceptional risk that it was sensible to avoid air travel at all costs, no event of such magnitude has occurred since, and still road accidents claim more lives. This is akin to the sorts of errors that people can make by accepting inaccurate affective forecasts (AFs) in deciding their behaviour, which can have equally irrational effects on day-to-day activities.

These studies demonstrate the widespread phenomenon of humans’ poor AFing. Nevertheless, research in this domain would benefit from longitudinal study of participants’ real experiences to gain a full picture of the AFing process.

2. Biases – Why people cannot predict their emotions accurately

AFEs can be interpreted as feeling hopeful or expecting the worst to avoid disappointment. Individuals may hold their own lay-theories of the span of emotion (Igou, 2004), yet there are also a number of systematic biases that have been consistently found to influence AFing.

2.1 Impact Bias

The impact bias is the term used for the mis-prediction of the duration or intensity of a future emotional experience (Gilbert et al., 1998; Igou, 2008; Menzel, Dolan, Richardson & Olsen, 2002; Smith et al., 2008). Eastwick, Finkel, Krishnamurti & Loewenstein (2008) demonstrate that the impact bias results from an overestimation of the intensity of an emotion with regards to relationship break-up. More specifically, this intensity bias lasts for at least ten weeks after the dissolution. The time course of the bias with regards to other emotional events is not documented, however it appears that AFEs can be considerably generalised across different domains. Furthermore, the impact bias might result from alternative sources, such as the duration of emotion alone, for other experiences.
2.2 ‘Focalism’

This bias concerns the over-focusing on the effect one event alone will have on a person’s emotions, and the disregard of other factors which influence how they will feel (Smith et al., 2008), for instance day-to-day activities and other pleasant or unpleasant events that may occur. Morewedge et al (2005) propose that this can result from focusing on unrepresentative past experiences. These are used as heuristics when individuals are unaware of their focusing error. This can be amended simply by drawing the individual’s attention to the fact that their experience is atypical, and that there are multiple ordinary effects on emotional outcomes (Gilbert, Gill & Wilson, 2002; Wilson, Wheatley, Meyers, Gilbert & Axsom, 2000). Otherwise, when people do not consider the error of their ways, they will anchor their predictions to inaccurate representations of emotion.

2.3 Immune Neglect

Not only are forecasts subject to these biases, but Gilbert et al (1998) and Hoerger, Quirk, Lucas and Carr (2009) propose that AFEs stem from the neglect or lack of awareness of their PIS (see Section 1 above and Figure 1 below), particularly with regards to negative feelings (Kermer, Driver-Linn, Wilson & Gilbert, 2006). Additionally, people are unaware of the sorts of events when their PIS will assist and when it will not, implying that they are unaware of its function and existence (Gilbert et al., 1998). It appears that, if people do not realise that they will be able to recover, they will expect the worst outcome of an event. This is reinforced by Igou (2008) who finds that people make greater overestimates of the duration of negative affect for other people than for themselves, as they have even less knowledge of the assistance the PIS provides in recovering from events.

2.4 Dissimilar Context

Gilbert and Wilson (2009) suggest that accurate predictions not only require for the ‘previewed’ emotion to have similar content to the actual experienced emotion, but that it must also occur in a similar context. For example, people asked to imagine whether they would prefer water more or food more when lost in a wood will say they want water just after exercising but food just before exercising (Loewenstein O’Donoghue & Rabin, 2003). Similarly, Gilbert et al (2002) found that predictions of enjoyment of food differ depending upon a person’s current level of hunger. Therefore predictions might only be accurate when the two contexts are sufficiently similar.
These biases help to explain why people make AFEs. Moreover, they have been found to be instrumental in our judgements and decisions in various areas of real life, not only in experimental situations (Morewedge et al, 2005).

3. The Self-Regulating Emotional System

In order to illustrate the role of the AFE and PIS, Figure 1 shows a theoretical self-regulating system of emotion. Predictions are overestimated in duration and intensity – the AFE – as denoted by the shaded area. The PIS mediates between actual and predicted emotional reactions, helping to rationalise feelings (Gilbert et al, 1998). Furthermore, it aids recovery from an emotional experience, correcting back to the stable emotional baseline (Dunn and Ashton-James, 2008), which remains relatively constant over time. Of course this gives a simplified view; nevertheless the diagram conceptualises the integration of these components.

With considerable relevance to this model, the Dalai Lama teaches that we should be content in life with what we have, as little will significantly change our baseline level of happiness, which is “determined more by one’s state of mind than external events” (p.10). These events,
as demonstrated previously, include ‘favourable’ experiences such as large financial gains and ‘devastating’ experiences such as being diagnosed HIV positive. Accordingly, the Dalai Lama suggests we should not want for unnecessary gains in life, for instance in money, which will not make us any happier (cf. Diener & Biswas-Diener, 2002). Perhaps we should all take heed of this advice when using AFs in decision-making.

4. Affective Forecasting Applied

The variety of research documenting AFing effects has been touched upon, but the real substance of this evidence is to consider its wider implications and how these can be utilised.

4.1 Healthcare

The collective health of a society must depend on the good decision-making of individuals in improving their personal health. Poor AFing of the consequences of healthcare interventions can lead to poor decision-making. As Halpern and Arnold (2008) highlight, major health decisions are often dependent upon judgements of improvements or deteriorations in QOL, including emotional wellbeing. If someone believes a health intervention will dramatically improve their QOL, they will accept it, the opposite being true for detriments to QOL. They give an example of a man who refuses to have his gangrenous leg amputated for fear of becoming dependent upon a wheelchair. To the outsider, it appears that this decision is irrational. Surely the benefits of living healthily outweigh the costs of permanent use of a wheelchair? This is an example of ‘focalism’: he has concentrated only on the barriers that may result from wheelchair use, whilst ignoring the pleasurable aspects of life that will remain constant, let alone the health improvements to be made. There is also evidence of immune neglect, and failing to predict that one can adapt to illness or disability using other outlets, in healthcare decision-making. Rhodes and Strain (2008) reiterate these assertions. In addition, they highlight how relatives’ inaccurate forecasting of a patients reactions to a diagnosis can lead to people being ‘kept in the dark’ about their health, when in reality they might cope with adverse news fairly well. Interestingly, AFs of health prospects differ for very ill people. Here, sicker people see poor health outcomes as desirable in comparison to death, whereas healthier people show little differentiation between the two (Winter, Moss & Hoffman, 2009). It thus appears that AFing values in health decisions depend upon the forecaster’s current situation.
This evidence emphasises how AFing can have more serious implications than temporary inconveniences to the individual: patients should be informed of the real impact of their decisions, yet healthcare budgets cannot be wasted on outcomes which do not benefit the long-term health of the patient.

4.2 Law

Legal considerations must also be made under optimal judgement conditions. Blumenthal (2005) discusses that court rulings - in particular concerns of compensatory awards to crime victims - assume that judges, victims and juries can make accurate decisions about the real impact of an event, in this case a crime, on an individual’s life. Yet in light of AFing evidence, this principle cannot be completely true. This may mean, as Blumenthal (2005) suggests, that compensatory awards are too high, because it is assumed that crimes have more severe emotional consequences for the victim than they actually do, as can be gathered from AFing research. Bronsteen, Buccafusco and Masur (2008) add that in the time between the crime and the court hearing, a person will adapt to the event and are likely to accept a decreasing amount as ‘fair’ compensation with time, and after two years their happiness will be near baseline. The above proposals are controversial. Firstly, Blumenthal (2005) implies that compensatory awards may be over-generous. However, Bronsteen et al (2008) evoke alternative views: is it ethical that an individual may have to accept a lower amount of compensation due to the delay, or should hearings be delayed to allow for emotional adaptation to the event, resulting in a realistic compensatory sum? Given that exaggerated or fraudulent claims should be avoided, the latter option appears more attractive in this instance; yet the opposite view is likely to be favoured by the claimant in question.

The assertions of Blumenthal (2005) and Bronsteen et al (2008) may also be used to question the basis of conviction of suspected criminals. For example, someone might commit a crime in anticipation of an (inaccurately forecasted) emotional experience, such as relationship break-up or redundancy. Can that individual be forgiven in part for their actions in the same way that a hospital patient or crime victim might be assisted or excused for flawed decision-making resulting from poor AFing? Given that considerations of mental state are increasingly taken in sentencing (Bursztajn, Scherr & Brodsky, 1994), it is questionable how far the reason for some crimes is one of insanity rather than an extreme reaction to a typically exaggerated prediction. This is applicable to theft, homicide and substance abuse, where in all cases the
forecast might result in an opportunist crime given adequate circumstances, which may be preventable, particularly with regards to substance abuse.

These are arguably two of the most interesting and relevant areas that can be related to the subject of AFing. However, the research should be extended to other areas. One such example is education, whereby examination periods evoke stress and anxiety for candidates, and it is likely that AFing would be beneficial to revision training strategies.

5. Can AFing be improved?

When the information we know about AFing is applied to the wider topics of public concern, it seems logical to help individuals by improving AFing abilities. Given that the AFE is so widespread and has several implications as detailed above, there is little research into the ways in which it can be improved. Nevertheless, it is suggested that, when people are informed of the human tendency to mis-predict hedonic reactions to future events, they can correct their errors to some extent. For example, ‘defocusing’ is a method that has been employed to encourage consideration of the constant unchangeable effects on affective states beyond the event in question, and is found to be successful in reducing the AFE (Gilbert et al, 2002; Walsh & Ayton, 2009; Wilson et al, 2000).

Forecasters could also learn about the PIS and become aware of its utility (Gilbert et al, 1998), reducing the immune neglect bias, because merely using post-event coping strategies does not aid future forecasting (Hoerger et al, 2009). Ubel, Loewenstein and Jepson (2005) compared different methods, and found that emphasising the person’s adaptability to emotional events can help them to make more realistic forecasts, and can be more effective than ‘defocusing’.

It is possible that, with sufficient relevant practice or counselling, people might be able to forecast more realistically. For negative events in particular, the evidence points towards training in the form of preparation, by imagining the event as though it had happened and learning from people who had experienced the event. This is alluded to by the Dalai Lama:
"Reflecting on suffering could be seen like a military exercise. People who have never heard of war, guns, bombing and so on might faint if they had to go into battle. But through military drills you could familiarize your mind with what might occur, so if a war erupted, it would not be so hard on you." (p. 113)

By preparing in this way, it is possible that a person could make more accurate predictions with practice and life experience (as implied by Nielson et al, 2008). Gilbert et al (2002) suggest a related method of using ‘mental proxies’. This is a technique of predicting a future reaction by imagining the event and taking note of the reaction to that mental event. It is proposed here that this could be used in training to; 1. prepare for a future emotional event, and 2. improve AFing by using ‘mental proxies’ as a tool, imagining and forecasting reactions until accuracy is improved. Subsequently, these forecasts can be transferred to real events.

Although it is suggested that AFing can be improved, one prospect is that people might always make suboptimal AFs, independent of training techniques, because human emotions are so complex, interrelated and changeable. Woodworth and Schlosberg (1954), in studying the interpretation of facial expressions, discovered that people make systematic errors in identifying the emotion displayed. Six main categories of expressed emotion can be plotted on a circular scale as shown in Figure 2 below.

Figure 2: Dimensions of facial expression; reconstructed from Schlosberg (1952;1954).
This is compared by the authors to a colour wheel. At the centre is an expression of neutrality, and towards the edges they become more prominent (‘saturation’). Expressions plotted at the middle of a segment are most defined, with those towards the edge of the segment often confused with the adjacent emotion (‘hue’). In addition are two dimensions of Pleasant-Unpleasant(P-U) and Attention-Rejection(A-R), which illustrate the nature of the emotion. The concept poses a prospective barrier to AFing: if emotions are so intricately related that they are difficult to distinguish in the form of facial expressions, a similar issue might underlie the errors in distinguishing experienced emotion. This adds complications to forecasting such a changeable construct, possibly resulting in poor AFing despite the use of the trialled aforementioned techniques.

6. Ethics: Should people be taught to forecast more accurately?

Research shows that the utility of AFing evidence extends to areas of general concern (Blumenthal, 2005: Halpern & Arnold, 2008; Gigerenzer, 2004; 2006; Rhodes & Strain, 2008). In view of this, it seems logical to conclude that individuals should be taught to improve their AFing. For example, had the 1,595 people cited by Gigerenzer (2006) chosen not to avoid air travel, they may not have been killed in road accidents. However with reference to healthcare decision making, Gligorov (2009) argues that, although AFing may distort judgements of future emotion, it does not affect patients’ abilities to meet the requirements of an autonomous medical decision. What the biases may do is alter their ability to accurately take into account the effects of their PIS and make a ‘rational’ decision, yet in the eyes of the legal requirements for making a reasoned healthcare decision they are unimpaired. In this sense, then, perhaps we should not attempt to improve an individual’s AFing abilities as it may contravene their human rights in making an autonomous decision. Still, does a person have more right to make their own decision without interference, or do they have more right to be informed of the potential benefits of improved AFing, which may enhance their health? Given that healthcare debates often promote the autonomy of the patient as key, perhaps improvements to AFing are not the answer.

There is also the ethical concern of whether it is beneficial for people to fully predict their affective futures. In a similar way that forecasting human behaviour might be unethical (Hart,
Michie & Cooke, 2007), so too might AF\textsubscript{ing}. It might be disturbing for someone to learn that they may not be as devastated as they would like to believe after the loss of a loved one, falling ill or experiencing disability (Gilbert \textit{et al}, 1998; Smith \textit{et al}, 2006; Ubel \textit{et al}, 2005). Additionally, they might become ‘over-rational’. For example, they may take more risky behaviours, such as becoming involved in ‘unhealthy’ relationships, knowing they probably would not feel so bad about the negative consequences. This could be costly to long-term personal and public wellbeing. Consequently, it again appears that the optimal choice might not always be to improve AF\textsubscript{ing} abilities when considering general emotional wellbeing of individuals. Furthermore, AF\textsubscript{ing} research may be fundamentally flawed. It is ecologically invalid to ask someone in an experimental setting to predict how they might feel after a traumatic event, such as bereavement, yet it is seems strictly unethical to consider asking a person who is to experience such an event in the near future to document their predicted emotional reactions.

Upon further consideration of the Dalai Lama’s suggestion of preparing for emotional suffering with ‘drills,’ it seems this method of improving AFs might cause more long-term distress. As AFs are likely to be overestimates of the intensity and duration of the emotional reaction, and the PIS is likely to aid recovery anyhow, preparing for an event through repeated emotional imagination might cause more distress than the actual event would. Improving AF\textsubscript{ing} is not a question of promoting rational decision-making: AFEs are more deeply set in a system that intends to protect the individual, and is not merely a deviation from rationality. As such, correcting emotional responses only treats the symptoms and not the causes of an adverse experience (Lazarus, 1985), which will persist. Moreover, it is not necessarily possible to assign the same rationality concepts to matters of emotional decision-making as can be applied to probability judgements.

The tone of the AF\textsubscript{ing} literature implies that, in being unable to predict the intensity and duration of future emotions, we are extensively deficient. Nevertheless, in most circumstances having only some estimation of future experienced emotion may suffice in protecting from adverse emotional experiences. Perhaps more credit is due for the accuracy with which we can distinguish good from bad (Gilbert \textit{et al}, 1998).
Conclusions

AF$_{ing}$ has implications for law and health legislation and practice – its utility has already been employed in some sense (See Section 4), yet these systems would benefit from further integration of the findings into policy. The evidence should be used to protect patient interest, but also aid medical professionals in the delivery of efficient care. Also, what is known about AF$_{ing}$ might pose somewhat controversial implications in questioning the accuracy of witness testimony and jury decision-making. It would be useful to directly investigate the practical implications of the AF$_{ing}$ evidence to legal rulings in the true settings.

Regardless of whether we can be taught to forecast better, the prudent conclusion to be drawn here implies that we should not be. The emotional system is delicate, and it has been shown that it has considerable influence upon decisions (Anderson, 2003; Gilbert et al, 1998, Slovic et al, 2007). Upsetting the natural course of human emotion might be harmful even when good is intended. After all, Figure 1 displays a model of self-correcting emotional system: there may be little use in pre-emptively correcting something that will correct itself.
References


