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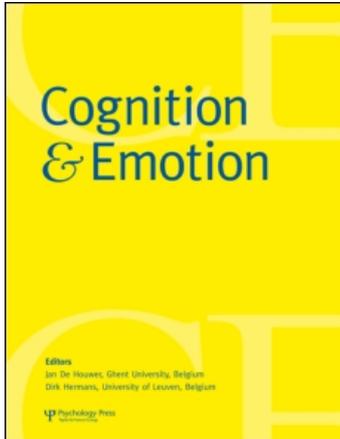
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Empathic forecasting: How do we predict other people's feelings?

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When making affective forecasts, people commit the impact bias. They overestimate the impact an emotional event has on their affective experience. In three studies we show that people also commit the impact bias when making *empathic forecasts*, affective forecasts for someone else. They overestimate the impact an emotional event has on someone else's affective experience (Study 1), they do so for friends and strangers (Study 2), and they do so when other sources of information are available (Study 3). *Empathic forecasting accuracy*, the correlation between one person's empathic forecast and another person's actual affective experience, was lower than *between-person forecasting correspondence*, the correlation between one person's empathic forecast and another person's affective forecast. Empathic forecasts do not capture other people's actual experience very well but are similar to what other people forecast for themselves. This may enhance understanding between people.

Keywords: Affective forecasting; Social projection; Accuracy; Impact bias.

People make *affective forecasts* to predict how they will feel about future events. Often they do not make these forecasts in a social vacuum. They discuss their wishes, hopes, or worries with others. These discussions invite others to make *empathic forecasts*; others predict how the person will feel about future events. To illustrate this, imagine Ann and Betty, who are talking about their upcoming exams. Ann worries about failing because she predicts that she would feel terrible for weeks if that were to happen. Betty agrees with her: "Yes, I can imagine how you would feel, failing would be

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horrible!” In this scenario, Ann makes an affective forecast, she predicts her affective experience following a future event. Betty makes an empathic forecast, she predicts another person’s affective experience to a future event. Empathic forecasts are difficult because people do not have direct access to others’ affective experiences. Nevertheless, generally people make predictions for others easily and readily and are commonly convinced that they do so accurately (e.g., Dunning, Griffin, Milojkovic, & Ross, 1990). While empirical findings on affective forecasting are ample, little is known about empathic forecasting. Research suggests that people perceive others’ affective experiences as less intense than their own (Miller & McFarland, 1987). Extending this finding to empathic forecasts, the current studies investigated whether people *forecast* less intense affective experiences for others.

Affective forecasting research traditionally examines biases, such as the impact bias (Wilson & Gilbert, 2003), by comparing people’s mean affective forecasts with their mean actual affective experience. Paralleling this approach, one can examine biases in empathic forecasts by comparing one person’s mean empathic forecasts with another person’s mean actual affective experience. By focusing on discrepancies between means, however, research tends to emphasise shortcomings in people’s forecasts (cf. Dunn & Laham, 2006). To enhance our understanding of empathic forecasts, it is important also to examine their strengths and their accuracy. Accuracy in affective forecasting can be examined by investigating the correlations between forecasts and experiences (e.g., Buehler & McFarland, 2001). Bias and accuracy are independent concepts that can coexist (Dunn & Laham, 2006; Epley & Dunning, 2006; Gagne & Lydon, 2004). Acknowledging this coexistence, the present paper sought to investigate both bias and accuracy in empathic forecasting. We predicted that, although empathic forecasts are biased by the impact bias, at the same time, they will be accurate as people have general knowledge about others’ affective reactions.

Bias in affective forecasting

What people really want to know about the future is how happy they will be (Wilson & Gilbert, 2003). To this end they make affective forecasts in which they forecast their affective experience to future events. An exam can be such an event, and when students are asked to forecast their affective experience to the outcome of the exam, they are likely to forecast long-lasting happiness or disappointment following success or failure, respectively (Buehler & McFarland, 2001). Since researchers began to investigate the accuracy of affective forecasts, however, it has become clear that affective forecasts are biased (e.g., Gilbert, Pinel, Wilson, Blumberg, & Wheatley, 1998; Mitchell, Thompson, Peterson, & Cronk, 1997; Wilson & Gilbert, 2003). Failing an

exam may be disappointing but the experienced disappointment is less intense and fades much faster than students' forecast (Buehler & McFarland, 2001; Finkenauer, Gallucci, van Dijk, & Pollmann, 2007). This tendency to overestimate the affective impact that future events will have on our affective experience is called the *impact bias* (Gilbert, Driver-Linn, & Wilson, 2002). Research has identified several sources for impact bias, including focalism (Wilson, Wheatley, Meyers, Gilbert, & Axsom, 2000), misconstrual (Wilson & Gilbert, 2003), and the psychological immune system (Gilbert et al., 1998). Furthermore, often affective forecasts are based on lay theories about how affective experiences unfold (Igou, 2004). The range of experiences that give rise to the impact bias and people's pervasive tendency to commit it suggests that the impact bias occurs spontaneously and typically outside of people's awareness (e.g., Gilbert et al., 1998). Do these findings on affective forecasting extend to empathic forecasting?

Bias in empathic forecasting

It has been suggested that people are able to detect biases in others' judgements, which should enable them to make less biased forecasts for others (Gilbert et al., 1998). Not much is known, however, about how people predict others' affective reactions. Evidence suggests that the influence of emotions is perceived differently for the self and for others. Research on social comparison and self-other judgements revealed that people perceive their own affective experiences as more intense than those of other people (Miller & McFarland, 1987). For example, others are thought to experience less embarrassment and to be less influenced by it (Sabini, Cosmas, Siepmann, & Stein, 1999; Van Boven, Loewenstein, & Dunning, 2005). Students think that they themselves are more concerned about drinking than their peers (Suls & Green, 2003). More generally, people think that others are less likely to experience guilt, sadness, anger, happiness, shame, fear, and jealousy (Sabini et al., 1999). Recently, this bias has been labelled the *emotion intensity bias* (Chambers & Suls, 2007) and it is thought to stem from the fact that people have direct access to their own affective experiences but only have indirect access to others' affective experiences via behaviour or facial expressions, for example. This accessible information may not reflect the full intensity of the affective experience because people often mask their feelings in social situations. The intensity of others' affective experience is therefore underestimated (Chambers & Suls, 2007).

It is not clear, however, whether the emotion intensity bias extends to empathic forecasts. If people perceive affective experiences as less intense does this mean that they also *predict* others' affective experience to be less intense? If this is the case, the typical overestimation of a future affective reaction should be less pronounced when predicting the future affective

reaction of someone else. The impact bias should therefore be smaller in empathic forecasts than in affective forecasts. We do not think that the impact bias will be completely wiped out by the emotion intensity bias, however. People are typically not aware of the impact bias and they often make affective forecasts based on intuitive theories about adaptation processes and their relation to affect progression or duration (Igou, 2004; Ross, 1989). It is likely that empathic forecasts are based on similar intuitive theories (e.g., failing an exam is disappointing). We thus predicted that the impact bias would emerge for empathic forecasts but that it would be less pronounced than in affective forecasts.

To investigate whether people’s affective and empathic forecasts derive from similar intuitive theories, we examined the *within-person forecasting correspondence* between affective and empathic forecasts. This correspondence is depicted in Figure 1 as the arrow between affective and empathic forecast of one person. If both forecasts are made in similar ways the structure of the affective forecast should resemble the structure of the empathic forecast. As noted above, whether empathic forecasts are biased and whether they resemble affective forecasts are theoretically and statistically different questions. The first question concerns the systematic overestimation of an affective experience and compares the mean affective forecast with the mean affective experience. The second question concerns the composition of the forecasts and examines whether different emotional aspects are equally important in affective and empathic forecasts. In the following, we will address the latter, correlational approach.

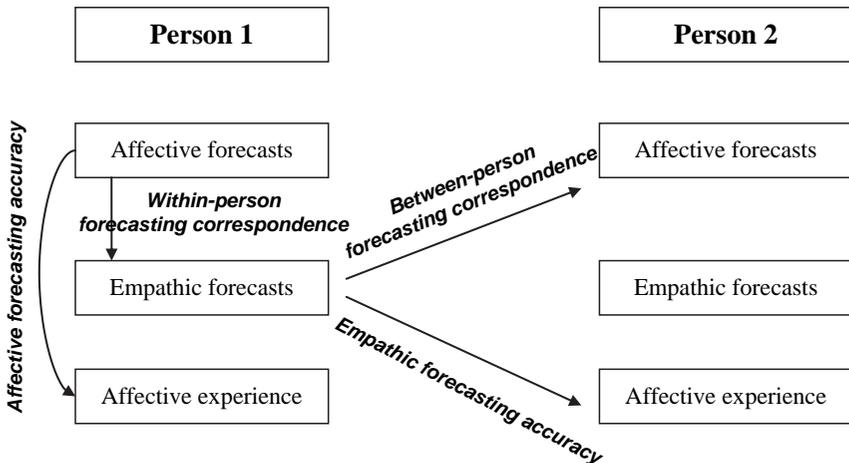


Figure 1. Visualisation of the within- and between-person accuracy and correspondence. For sake of clarity concepts are drawn for Person 1 only.

Accuracy of empathic forecasts

Although the literature suggests that empathic forecasts are likely to be biased, people are quite confident that they are accurate in predicting others (Dunning et al., 1990; Realo et al., 2003; Swann & Gill, 1997). Their confidence, however, is only weakly related and often even unrelated to people's actual ability to predict others' internal states. Swann and Gill (1997) conclude that "the confidence that people have in their impressions of others is, at best, sporadically related to the accuracy of those impressions" (p. 755). How is it possible that people feel so confident about their ability to predict others when they are in fact inaccurate? To answer this question, it is necessary to have a closer look at forecasting accuracy, a methodological look and a conceptual look.

A methodological look at accuracy. The scientific investigation of affective forecasting accuracy has received less attention than it deserves (Dunn & Laham, 2006). To investigate affective forecasting accuracy, researchers correlated affective forecasts with affective experiences across participants, thereby calculating a correlation for a group of participants (e.g., Buehler & McFarland, 2001; Dunn, Wilson, & Gilbert, 2003). In most cases, researchers found a positive correlation, indicating that those individuals who forecast stronger emotions also experienced stronger emotions (Buehler & McFarland, 2001). These correlations, however, characterise a sample rather than a specific individual or dyad. Indeed, it is conceivable that people are more accurate in predicting people they know than strangers (e.g., Stinson & Ickes, 1992), so sample-based correlations may underestimate the actual accuracy of affective and empathic forecasts.

Item-based correlations allow us to circumvent this shortcoming by calculating an accuracy score for each individual or dyad (cf. Bernieri, Zuckerman, Koestner, & Rosenthal, 1994; Lou & Klohnen, 2005). Specifically, we compute correlation coefficients to establish how similar each pattern of responses in a forecast is to each pattern of responses in an experience. These item-based correlations thereby fully capture the degree to which forecasts resemble affective experiences in terms of the relative importance of different facets of the affective experience. For example, if disappointment and relief were rated as more important than anger and happiness in both forecast and experience, forecasting accuracy would be high. Note that to prevent spurious correlations, it is necessary to reverse score items that are framed negatively. People agree that a positive event elicits more positive than negative emotions. Correlations based on the raw scores would therefore not be informative. If all items have the same

direction the correlations measure the extent to which some items are rated higher than others in absolute terms.

We compute the correlation between affective forecasts and experiences, *affective forecasting accuracy*, to examine the extent to which people are able to forecast the pattern of responses for their own affective experiences (i.e., arrow between affective forecast and experience within one person in Figure 1). We compute the correlation between empathic forecasts and experiences, *empathic forecasting accuracy*, to examine the extent to which people are able to forecast the pattern of responses of others' affective experiences (i.e., arrow between the empathic forecast of one person and the affective experience of the other person in Figure 1).

The assessment of accuracy in interpersonal settings is vulnerable to a number of problems (Cronbach, 1955; Gage & Cronbach, 1955). Accuracy can be achieved not only by insight into one's own or others' future affective experiences, but also because people respond to scales in a similar way, and/or because they have stereotype knowledge about how people typically feel about certain events (e.g., happy when passing an exam vs. disappointed when failing an exam). By using item-based correlations we prevent the inflation of accuracy scores due to similar response sets between two people (Sillars, Pike, Jones, & Murphy, 1984). Specifically, they reflect the extent to which the forecasting partner (i.e., the perceiver) can predict the pattern of affective experiences of a target across different items. This makes these within-dyad accuracy measures particularly appropriate in the present context. The item-based correlations include stereotype knowledge, but it should be noted that in the case of the current study stereotype knowledge is of theoretical importance. Stereotype knowledge resembles the intuitive theories people have about affective events (e.g., Igou, 2004; Ross, 1989). Because we assume that affective and empathic forecasts are mainly based on these intuitive theories, removing stereotype accuracy from the forecasts would result in removing the very component we are interested in.

A conceptual look at accuracy. Conceptually, empathic forecasts allow for another, new look at accuracy, because the empathic forecast of one person can correspond to the affective forecast of the other person. We will call this accuracy the *between-person forecasting correspondence* (see Figure 1). This new conceptualisation of accuracy may be especially important in an interpersonal setting. To illustrate this, if Ann is afraid of failing her exam and shares her concerns with Betty, it may be important for Betty to make an empathic forecast that corresponds to Ann's affective forecast. Such between-person forecasting correspondence may help Betty to understand Ann's concern and signal acceptance and validation to Ann.

We propose that this type of accuracy is easier to achieve than empathic forecasting accuracy. Forecasts and experiences arise from separate informa-

tion processing systems (Dunn & Ashton-James, 2008). Affective forecasts are proposed to stem from the rational system as they are based on logical reasoning. Affective experiences, on the other hand, are proposed to stem from the experiential system. Given these differences, forecasts and experiences are likely to differ in their structure. Consequently, empathic forecasts should resemble affective forecasts more than affective experiences. Hence, we predicted that between-person forecasting correspondence would be greater than empathic forecasting accuracy.

Hypotheses and overview of the current research

We predicted that people would commit the impact bias in empathic forecasts but to a lesser extent than in affective forecasts. Additionally, we predicted that we would find significant empathic forecasting accuracy and significant between-person forecasting correspondence, with the latter being stronger than the former. To test these predictions, in three studies, we asked pairs of friends (Studies 1–3) and pairs of strangers (Study 2) to forecast both their own affective experience and the other's affective experience to positive or negative feedback on an important test. Forecasts for the other were made either before (Studies 1 and 2) or after (Study 3) participants had undertaken the test and received feedback on it. We assessed affective experiences following either positive or negative feedback. These designs allowed us to examine the conditions under which people base an empathic forecast on their affective forecast. Study 2 examined whether people base their empathic forecasts for friends and for strangers on their affective forecasts for themselves, and Study 3 examined whether people who have access to a different source of information to make empathic forecasts, namely their actual affective experience, would still base empathic forecasts on affective forecasts.

STUDY 1

Study 1 sought to test the following hypotheses. First, we expected to replicate the traditional impact bias in that people should overestimate their positive experience following positive feedback and should overestimate their negative experience following negative feedback. Extending previous research, we predicted that friends would show an impact bias in their empathic forecasts for each other. Specifically, friends should overestimate one another's positive experience following positive feedback and should overestimate one another's negative experience following negative feedback. Furthermore, we investigated the accuracy of empathic forecasts by measuring and comparing between-person forecasting correspondence and empathic forecasting accuracy. We hypothesised that between-person

forecasting correspondence would be greater than empathic forecasting accuracy.

Method

Participants. Participants were recruited via posting flyers around campus. The flyers announced one study for friends, inviting participants to bring a friend. A total of 53 pairs of friends (16 male–male, 26 female–female, 11 mixed) participated in this study. Their age ranged from 17 to 30 years with an average of 20.02 years ($SD = 2.34$). They received €2.5 for their participation. The mean duration of their friendship was 22.11 months ($SD = 40.38$).

Design. This study used a 2 (Forecast: affective forecasts vs. empathic forecasts) \times 2 (Affective Experience: forecasted vs. actual) \times 2 (Valence of Feedback: positive feedback vs. negative feedback) factorial design with the first two factors being within-subject factors and the last factor being a between-subject factor. Friends were always in the same valence of feedback condition, so that both friends would either both receive positive or both negative feedback. The order in which participants made forecasts for themselves and the friend was counterbalanced, but within each pair of friends, the order of forecasting was the same.

Procedure and materials. Participants came to the lab together with a friend, and both friends completed the study individually on computers. Each pair of friends was randomly assigned to one of the two valence conditions. Participants were told that they would answer a number of questions about their friend but that the answers would be treated confidentially and that the friend would never see them. They were presented eight scenarios describing positive or negative emotion-eliciting events (e.g., imagine you win €10,000 at the lottery, imagine you fail an exam) and were asked to forecast their own and their friend's affective experience for four positive and four negative emotions (relieved, cheerful, happy, proud, bad, disappointed, angry, sad) on a 7-point-scale. Included in the eight scenarios was a scenario that was central to the research question. This scenario asked participants to rate the intensity of their emotions following a good or a bad performance on an important test assessing their cognitive abilities. This scenario varied according to the valence of feedback condition. After the first set of forecasts there was a short filler task, and then the second set of forecasts started. Participants who first made affective forecasts subsequently made empathic forecasts, and vice versa.

Following the forecasts, relationship duration and satisfaction were measured. Relationship duration was measured by asking how many months the friends had known each other. Relationship satisfaction was measured by using a Dutch translation of the satisfaction, intimacy, and trust subscales of the Perceived Relationship Quality Components Questionnaire (Fletcher, Simpson, & Thomas, 2000). Items included questions such as: "How satisfied are you with the relationship with your friend?" answers were given on a 7-point-scale.

After a 5-minute filler task for an unrelated study, participants were introduced to the test. They read that it was a test to measure their cognitive abilities and that this concept was a good predictor of success at college. To highlight its importance, participants were told that based on the results of the test they could receive advice about whether to pursue their education. The test was the Dutch version of the Remote Associates Test (RAT), which is designed to enable a powerful performance manipulation (McFarlin & Blascovich, 1984). By manipulating the difficulty of RAT items, participants can be given performance feedback that corresponds to their actual performance. Participants' task was to find an umbrella term for three stimulus words. The original test consists of 35 sets of words that range in difficulty. Participants in the negative feedback condition received the 16 most difficult items, and participants in the positive feedback condition received the 16 least difficult items. After completing the test, participants received bogus feedback about their performance. Participants in the negative (positive) feedback condition were informed that they had answered 24% (87%) of the items correctly, which was translated into a score of 2.5 (8.5). After this feedback participants were asked to rate their affective experience, using the same 7-point-scale of eight emotions used earlier for the forecasts. Participants were told that this mood measurement was necessary to control for mood effects. After reverse scoring the negative items, reliability of the scale was $\alpha = .96$ for affective forecasts, $\alpha = .96$ for empathic forecasts, and $\alpha = .86$ for affective experience. Subsequently participants described in an open-answer format what they thought the experiment was about. None of the participants correctly guessed the purpose of the study. Finally, participants were debriefed and paid.

Results and discussion

Manipulation check. To check whether participants' mood was influenced by the feedback on the test, we compared the affective experience of participants in the positive feedback condition with the affective experience of participants in the negative feedback condition. A significant difference in affective experience emerged, $F(1, 104) = 21.23$, $p < .001$, $\eta_p^2 = .17$. Participants in the positive feedback condition scored higher on the mood scale

($M = 5.23$, $SD = 0.84$) than participants in the negative feedback condition ($M = 4.42$, $SD = 0.98$). This finding indicates that the feedback manipulation was successful.

Bias in forecasts. To investigate whether participants committed the impact bias in affective and empathic forecasts, we compared the mean forecasted affective experiences with the mean actual affective experiences after the test for self and friend. We conducted a repeated-measures ANOVA with Person (self vs. friend) and Affective Experience (forecasted vs. actual) as within-subject factors and Feedback Condition (positive feedback vs. negative feedback) as a between-subject factor.¹ The analysis revealed a main effect of Affective Experience, $F(1, 104) = 15.90$, $p < .001$, $\eta_p^2 = .13$, a main effect of Feedback Condition, $F(1, 104) = 364.26$, $p < .001$, $\eta_p^2 = .78$, and, most importantly, the hypothesised interaction between Affective Experience and Feedback Condition, $F(1, 104) = 147.92$, $p < .001$, $\eta_p^2 = .59$.

We performed pairwise comparisons with Bonferroni correction to investigate the nature of the interaction between affective experience and condition. In the positive feedback condition, forecasted affective experiences ($M = 6.07$, $SD = 0.12$) were more positive than actual affective experiences ($M = 5.23$, $SD = 0.09$), $F(1, 104) = 31.62$, $p < .001$, $\eta_p^2 = .23$. People thus overestimated their own and their friend's positive affective experience following positive feedback. In the negative feedback condition, forecasted affective experiences ($M = 2.76$, $SD = 0.11$) were more negative than actual affective experiences ($M = 4.42$, $SD = 0.09$), $F(1, 104) = 138.24$, $p < .001$, $\eta_p^2 = .57$. People overestimated their own and their friend's negative affective experience following negative feedback. Thus, people commit the impact bias in affective and empathic forecasts.

Contrary to our hypothesis we did not find a main or higher-order effect for person, indicating that forecasts made for the self did not differ from the forecast made for the friend. Possibly people have personalised knowledge about affective experiences of a friend and know that they are as intense as their own affective experiences.

Accuracy of forecasts. To investigate the accuracy of affective and empathic forecasts, we compared forecasts and affective experiences by calculating correspondence across the eight different emotions, leading to one correlation score per person or pair (cf. Klohnen & Mendelsohn, 1998). These item-based correlations were then transformed using the Fisher r to z transformation for use in analyses and transformed back for reporting.

¹ We also conducted an ANOVA including order as a between-subject factor. Because there was no main effect of order of prediction or interaction effects with the other factors this factor was excluded from the analyses.

We followed the same procedure in the respective analyses in Study 2 and Study 3.^{2,3}

To investigate how accurate people are in forecasting their own affective experience we calculated *affective forecasting accuracy* (i.e., within-person correspondence between affective forecast and experience). We found a substantial amount of affective forecasting accuracy, $M_r = .56$ (range $-.54$ to $.97$). The mean correlation was significantly greater than zero, $t(1, 92) = 10.94$, $p < .001$. Thus, although affective forecasts are biased, they are also accurate because people are able to forecast the pattern of their affective experience.

To investigate how accurate people are in forecasting others' affective experience we calculated *empathic forecasting accuracy* (i.e., between-person correspondence between forecast and experience). We also found a substantial amount of empathic forecasting accuracy, $M_r = .44$ (range $-.55$ to $.96$), which was significantly greater than zero, $t(1, 91) = 9.29$, $p < .001$. So, although empathic forecasts are biased, they are also accurate because people are able to forecast the pattern of their friend's affective experience.

To investigate the relation between affective forecasts and empathic forecasts of one person, we calculated the *within-person forecasting correspondence* (i.e., within-person correspondence between affective forecast and empathic forecast). The average correlation between affective and empathic forecasts of one person was $M_r = .66$ (range $-.57$ to $.98$). The correlations were significantly greater than zero, $t(1, 88) = 11.07$, $p < .001$, indicating that the two forecasts resembled each other.

To investigate whether the forecasts of two persons regarding the same person were related, we calculated the *between-person forecasting correspondence* (i.e., between-person correspondence between empathic forecast and affective forecast). This item-based correlation reflects how much two friends agree in their forecast of the affective experiences of one of them. Mean between-person forecasting correspondence was $M_r = .58$ (range $-.46$ to $.97$) and significantly greater than zero, $t(1, 87) = 12.41$, $p < .001$, indicating that friends' forecasts about the affective experience of one of them were related.

Most importantly, we compared the two measures of accuracy and the two measures of correspondence in a repeated-measures ANOVA with

² To take statistical interdependence into account, we first estimated the variance explained on the dyad level using a hierarchical linear model approach. No reliable effects of the dyad level in explaining variance for the dependent measures emerged. Data in all three studies are hence analysed on the individual level.

³ For some participants it was not possible to calculate the across-item correlation because they gave the same response on every item. This is why degrees of freedom vary across analyses.

the different correlations as within-subject factors. Of special interest were the comparison of affective forecasting accuracy and empathic forecasting accuracy and the comparison of empathic forecasting accuracy and between-person forecasting correspondence. The first comparison investigated whether people were more accurate in predicting themselves than others. The second comparison investigated whether people were more accurate in forecasting a friend's experience or a friend's own forecast. As can be seen in Table 1, there was no difference in the accuracy of affective and empathic forecasts. People are as accurate in predicting their own affective experience as in predicting their friends' affective experience. Thus, people seem to be as biased *and* as accurate in their affective and their empathic forecasts.

Concerning the second comparison, between-person forecasting correspondence was significantly higher than empathic forecasting accuracy, $F(1, 77) = 7.37$, $p < .01$, $\eta_p^2 = .09$. Participants were thus more accurate in forecasting others' forecasts than in forecasting others' actual affective experience. This correspondence between people's forecasts may be functional in interpersonal settings in that it is more important to agree with someone on his or her affective forecast than to accurately forecast the other's affective experience. Between-person forecasting correspondence may represent an on-line form of accuracy, because in everyday life it is most likely to emerge in situations in which both partners are in the same situation talking about the same upcoming event. In this sense, between-person forecasting correspondence may help partners to empathise with each other and be responsive to each other's needs.

Relationship variables. To investigate how correspondence, empathic forecasting accuracy, and between-person forecasting correspondence related to the characteristics of the relationship, we regressed these variables on to relationship duration and satisfaction. None of the variables was significantly related to either relationship satisfaction or duration, $F(3, 71) = 1.377$, $p = .26$ and $F(3, 71) = 1.21$, $p = .32$, respectively. This suggests

TABLE 1

Mean scores for affective forecasting accuracy, empathic forecasting accuracy, within-person forecasting correspondence, and between-person forecasting correspondence of Studies 1–3

	<i>Study 1</i>	<i>Study 2</i>	<i>Study 3</i>
Affective forecasting accuracy	.56 _{ab}	.58 _a	.58 _a
Empathic forecasting accuracy	.44 _a	.44 _a	.54 _a
Within-person forecasting correspondence	.66 _c	.89 _c	.91 _b
Between-person forecasting correspondence	.58 _b	.78 _b	.89 _b

Note: Within each study correlations not sharing a common subscript differ at $p < .05$.

that correspondence, empathic forecasting accuracy and between-person forecasting correspondence are independent of the time friends have known each other and of how satisfied they are with the relationship.

STUDY 2

We found that people committed the impact bias for themselves and their friend and that the strength of the impact bias did not differ across affective and empathic forecasts. This finding was surprising given earlier results showing that people perceive others' affective experiences as less intense as their own. We argued that people have personal information about their friend, which may lead them to predict their friend's affective experience as being as intense as their own. To investigate this possibility, participants in Study 2 forecast the affective experiences of a stranger versus a friend. Additionally, we assessed participants' mood before any manipulation had taken place to investigate in more detail whether the feedback manipulation led to changes in affect in the positive feedback condition, the negative feedback condition, or both.

Method

Participants. Participants were recruited via posting flyers around campus. Seventy participants participated in this study, ranging in age from 17 to 36 years ($M = 20.66$, $SD = 2.79$). Approximately half of them ($N = 40$) came to the lab with a friend. This group consisted of 4 male–male friend couples, 12 female–female friend couples, and 4 mixed-sex friend couples. They had been friends for an average of 28.28 months ($SD = 53.19$). The other half of the participants came to the lab individually and were paired with another participant whom they did not know. This group consisted of 3 male–male couples, 7 female–female couples, and 5 mixed-sex couples. Participants received €2.5 for their participation. As in Study 1, pairs were randomly assigned to the same valence condition.

Design. This study used a 2 (Forecast: affective forecasts vs. empathic forecasts) \times 2 (Affective Experience: forecast vs. actual) \times 2 (Valence of Feedback: positive feedback vs. negative feedback) \times 2 (Target of Forecast: friend vs. stranger) factorial design with the first two factors being within-subject factors and the latter two factors being between-subject factors. Dyads were always in the same valence of feedback condition, so that both received either positive or negative feedback.

Procedure and materials. The procedure was the same as in Study 1, with the following exceptions. First, for stranger dyads no relationship-relevant

variables were assessed. Second, because we found no effect of the order of prediction in Study 1, the order in which participants made the forecasts was now the same for everyone, all participants started with the affective forecast and then made the empathic forecast. Third, a mood pre-measure was included that assessed participants' mood at the beginning of the experiment using the same mood scale as in Study 1. After reverse scoring of the negative items, reliability of the mood scale was $\alpha = .96$ for affective forecasts, $\alpha = .96$ for the empathic forecasts, $\alpha = .81$ for the mood pre-measure, and $\alpha = .88$ for the actual affective experience.

Results and discussion

Manipulation check. To check whether participants' mood was influenced by the feedback on the test, we compared participants' mood at the beginning of the experiment with their actual affective experience following the positive or negative feedback. A significant interaction between Time of Measurement (before vs. after the feedback) and Valence of Feedback (positive vs. negative) emerged, $F(1, 68) = 26.47, p < .001, \eta_p^2 = .28$. Simple effects analyses yielded no significant difference in mood before participants received feedback, $F(1, 68) = 0.23, p = .52, \eta_p^2 = .01$. There was, however, a significant difference in actual affective experience after participants had received either positive or negative feedback, $F(1, 68) = 17.15, p < .001, \eta_p^2 = .20$. Participants' mood in the negative feedback condition decreased significantly, $F(1, 68) = 42.09, p < .001, \eta_p^2 = .38$ ($M = 5.28$ vs. 4.31), while participants' mood in the positive feedback condition did not change significantly, $F(1, 68) < 1$ ($M = 5.13$ vs. 5.23). Thus, the negative feedback manipulation was more powerful than the positive feedback manipulation.

Bias in forecasts. To investigate whether participants committed the impact bias for themselves, for a friend, and for a stranger, we conducted a repeated-measures ANOVA with Affective Experience (forecast vs. actual) and Person (self vs. other) as within-subject factors and Feedback Condition (positive feedback vs. negative feedback) and Target (friend vs. stranger) as between-subject factors. The ANOVA revealed a main effect of Affective Experience, $F(1, 66) = 11.13, p < .01, \eta_p^2 = .14$, a main effect of Feedback Condition, $F(1, 66) = 344.98, p < .001, \eta_p^2 = .84$, and, most importantly, the hypothesised interaction between Affective Experience and Feedback Condition, $F(1, 66) = 125.19, p < .001, \eta_p^2 = .66$. Mirroring the results of Study 1, participants' forecasted affective experience in response to positive feedback was more positive than their actual affective experience, $F(1, 66) = 32.05, p < .001, \eta_p^2 = .33$ ($M = 6.12$ vs. $M = 5.25$). Conversely, participants' forecasted affective experience in response to negative feedback was more negative than their actual affective experience, $F(1, 66) = 101.61, p < .001,$

$\eta_p^2 = .61$ ($M = 2.73$ vs. $M = 4.34$). People thus committed the impact bias for themselves as well as for others.

Additionally, we found a main effect of the Target of Forecast, $F(1, 66) = 4.96$, $p < .05$, $\eta_p^2 = .07$. The overall score given on the mood scale was higher when the target was a stranger ($M = 4.74$) than when the target was a friend ($M = 4.48$). This finding is theoretically not meaningful, however, because it was not qualified by any interactions and thus included forecasts and experiences as well as judgements about the self. We predicted that forecasts for a stranger would be less extreme. Thus, we should have found an interaction between Target, Affective Experience, Person, and Condition, with lower scores for forecasts about strangers in the positive feedback condition and higher scores in the negative feedback condition. The fact that we did not find this interaction indicates that when forecasting the affective experience of others, people overestimated the impact of the experience, independent of whether they knew the target or not.

Finally, the ANOVA revealed an interaction effect between Person and Time, $F(1, 66) = 4.16$, $p < .05$, $\eta_p^2 = .06$, that indicates that forecasts (but not experiences) made for the self are less positive than forecasts made for the other person ($M = 4.26$ vs. $M = 4.59$). This finding is hard to interpret because it was not qualified by the feedback condition. The forecast affective experience for someone else was not more extreme, as we predicted, but more positive overall. Because we did not find this effect in Study 1 its robustness is questionable.

In summary, Study 2 showed that people commit the impact bias for themselves to the same extent to which they commit it for others. Extending the results of Study 1, Study 2 showed that the impact bias appears for friends and strangers. This finding is surprising because people have much more personalised knowledge about themselves and their friends than strangers. This knowledge would enable them, for example, to take earlier experiences into account when making forecasts for themselves or their friends. Rather than using this knowledge, however, people seemed to use the same strategy to make forecasts for themselves, for a friend, and even for a stranger.

Accuracy of forecasts. Similar to Study 1, we investigated the accuracy and correspondence of affective and empathic forecasts. Additionally, we tested whether the empathic forecasting accuracy differed for friends and strangers. The magnitude of affective forecasting accuracy, empathic forecasting accuracy, within-person correspondence, and between-person correspondence paralleled those found in Study 1 (see Table 1). All correlations differed significantly from zero (all p -values $< .01$).

There was no significant difference in empathic forecasting accuracy for friend and stranger target, $F(1, 63) < 1$. It thus seems that even if they do not know the other person, people are still accurate about how that person will

feel after doing badly on an important test. Furthermore, the amount of between-person forecasting correspondence did not differ for friends and strangers, $F(1, 63) < 1$, indicating that people have considerable knowledge about how miserable another person *expects* to feel after doing badly on an important test.

Finally, we compared the different correlations in a repeated-measures ANOVA. As can be seen in Table 1, replicating Study 1, we found no difference between affective forecasting accuracy and empathic forecasting accuracy. Also replicating Study 1 and consistent with expectations, between-person forecasting correspondence was significantly higher than empathic forecasting accuracy, $F(1, 64) = 17.06$, $p < .001$, $\eta_p^2 = .21$. In an interpersonal setting people are thus mainly accurate because they agree on their forecasted affective experiences.

Relationship variables. Regression analyses revealed that, again, empathic forecasting accuracy and within-person and between-person forecasting correspondence were unrelated to relationship duration and satisfaction, both $F_s < 1$.

STUDY 3

Studies 1 and 2 found consistent evidence that people adopt the same strategy to make affective forecasts for different targets. We designed Study 3 to investigate whether they change their strategy as a function of the information available in the forecasting situation. To provide participants with a different source of information on which they could base their empathic forecasts, they made empathic forecasts immediately after they had experienced the event themselves. Hence, participants could use their actual affective experiences, rather than their intuitive theories, as an anchor for their empathic forecasts. This strategy was expected to reduce the impact bias and lead to higher empathic forecasting accuracy, because participants' own actual affective experiences should be a good anchor for the actual affective experiences of the other. The literature suggests that people make different forecasts after the test, because they are likely to rationalise the negative outcome (Wilson, Meyers, & Gilbert, 2001, 2003). We therefore predicted that people would base their affective forecast for their friends on their own actual affective experience when making the forecasts after the experience.

Method

Participants. Participants were recruited via posting flyers around campus. The flyers announced one study for friends, inviting participants to bring a friend. A total of 20 pairs of friends (6 male–male, 11 female–female, 3

mixed) participated in this study. Their age ranged from 17 to 26 years ($M = 19.55$, $SD = 1.89$). They received €2.5 for their participation. The mean duration of their friendship was 28.05 months ($SD = 26.70$).

Design. This study used a 2 (Forecast: affective forecasts vs. empathic forecasts) \times 2 (Affective Experience: forecast vs. actual) \times 2 (Valence of Feedback: positive feedback vs. negative feedback) factorial design with the first two factors being within-subject factors and the last factor being a between-subject factor. Friends were always in the same valence of feedback condition, so that both friends received either positive or negative feedback.

Procedure and materials. The procedure and the materials were the same as in Study 2 with the following exception: Participants always made the forecast for their friend after they had received their own feedback on the test. The reliability of the mood scale was again high, after reverse scoring of the negative items reliability of the scale was $\alpha = .96$ for affective forecasts, $\alpha = .97$ for the empathic forecasts, $\alpha = .89$ for the mood pre-measure and $\alpha = .91$ for the actual affective experience.

Results

Manipulation check. The feedback manipulation was successful, because participants' mood in the negative feedback condition decreased significantly, $F(1, 38) = 31.05$, $p < .001$, $\eta_p^2 = .45$ ($M = 5.51$ vs. 4.52), and participants' mood in the positive feedback condition increased significantly, $F(1, 38) = 5.35$, $p = .03$, $\eta_p^2 = .12$ ($M = 5.08$ vs. 5.49).

Bias in forecasts. The main question of Study 3 was whether participants would still commit the impact bias for others when they had just experienced the event themselves. A repeated-measures ANOVA with Affective Experience (forecast vs. actual) and Person (1 vs. 2) as within-subject factors and Feedback Condition (positive feedback vs. negative feedback) as a between-subject factor yielded a main effect of Affective Experience, $F(1, 38) = 45.65$, $p < .001$, $\eta_p^2 = .55$, and a main effect of Feedback Condition, $F(1, 38) = 179.59$, $p < .001$, $\eta_p^2 = .83$, which were qualified by the hypothesised interaction between Affective Experience and Feedback Condition, $F(1, 38) = 145.97$, $p < .001$, $\eta_p^2 = .79$. Simple effects analyses revealed that participants' forecasted affective experience in response to positive feedback was more positive than the actual affective experience, $F(1, 38) = 14.18$, $p < .001$, $\eta_p^2 = .27$ ($M = 6.08$ vs. 5.49). Participants' forecasted affective experience in response to negative feedback was less positive than the actual affective experience, $F(1, 38) = 177.44$, $p < .001$, $\eta_p^2 = .82$ ($M = 2.46$ vs. 4.52). Importantly, these effects were not qualified by an interaction with Person.

Thus participants overestimated their own and others' affective experience, even after they had just experienced the event themselves.

Basis of the empathic forecast. In this study the empathic forecast was made after the affective experience. This allowed participants to base the empathic forecast on their affective experience. If this were the case, empathic forecasts should correspond more strongly to affective experiences than to affective forecasts. To investigate this question, we regressed empathic forecasts onto own affective forecasts and own actual experiences. Affective forecasts that participants made for themselves significantly predicted their empathic forecasts ($\beta = .91, p < .001$). Participants' own actual affective experiences did not contribute to explaining variance in empathic forecasts above and beyond the variance that was explained by affective forecasts ($\beta = -.01, p = .94$). These results suggest that people do not take their own affective experiences into account when making empathic forecasts. Even after experiencing a situation that was similar to the one that had to be forecasted, empathic forecasts still seemed to be based on the same intuitive theory as affective forecasts. This result may seem surprising because information about people's own affective experience should be more readily accessible for participants than information about their own forecast. Participants made affective forecasts, underwent the affective experience, and then made the empathic forecast. So, the affective forecast, which is the more distal predictor, performed better than the affective experience, which is the more proximal predictor. These results suggest that people's tendency to make empathic forecasts in the same way that they make affective forecast is very strong and not easily overridden by recent affective experiences.

Why do people not take their experiences into account? It is possible that taking one's own experiences into account or even taking experiences of the other person into account is a more effortful way to make an empathic forecast. When it comes to affective forecasts, people do not spontaneously base them on their past experiences (Wilson et al., 2001). For example, when Betty forecasts how she would feel after failing the exam, she could try to remember all the occasions that she failed an exam and take them into account. However, this process would require cognitive effort and motivation and it is more likely that Betty, like people in general, will opt for easy mental strategies over effortful ones (e.g., Petty & Cacioppo, 1986). So, Betty makes a rather "quick and dirty" forecast that is somewhat biased. Similarly, if Betty were to forecast Ann's affective experience after failing the exam, she could try to remember all the occasions that Ann failed an exam and told her about it. However, this would also require considerable cognitive effort. If Betty is not motivated to invest this effort into her own affective forecasts, it is unlikely that she would be motivated to invest it into empathic forecasts.

Accuracy of forecasts. Also in this study we investigated and compared the accuracy and correspondence of affective and empathic forecasts (Table 1). All correlations were significantly greater than zero, all p -values $< .01$. An ANOVA revealed that, again, between-person forecasting correspondence was significantly higher than empathic forecasting accuracy, $F(1, 37) = 17.04$, $p < .001$, $\eta_p^2 = .32$ (see Table 1 for an overview of the comparisons). Thus, empathic forecasts more strongly resemble the pattern of affective forecasts than the pattern of affective experiences, even if the affective experience is readily available in people's memory when making the empathic forecasts.

Relationship variables. Again we found no link between empathic forecasting accuracy and within-person and between-person forecasting correspondence and relationship duration and satisfaction in the regression analysis, both $F_s < 1$.

GENERAL DISCUSSION

Across three studies we found consistent support for our hypothesis that empathic forecasts can be biased and accurate at the same time. Empathic forecasts are biased because the affective experience of the other person is overestimated. Empathic forecasts are accurate because they correspond to the other's affective experience.

Bias in forecasts

Our findings extend the literature on affective forecasting to interpersonal settings by showing that the well-established impact bias in affective forecasts also occurs for empathic forecasts. People overestimate others' positive experience after positive feedback and overestimate others' negative experience after negative feedback. Importantly, they do so to the same extent as they overestimate their own affective experience.

According to the emotional intensity bias people tend to perceive others' affective experiences as less intense than their own (Miller & McFarland, 1987). However, when making empathic forecasts, the predicted affective experience of a friend and a stranger was as intense as the predicted affective experience of the self. It should be noted that in a typical study on the emotional intensity bias the other person is often an average other. In our study the other person was personalised, either as their friend or a stranger they met just before the experiment. Possibly a personalised other is seen as more similar to the self and therefore forecasts for that person are made similarly to forecasts for the self. The similarity between affective and empathic forecasts is further underlined by the high correspondence between

them. Furthermore, empathic forecasting accuracy was similar for friends and strangers and did not vary as a function of relationship length. If people were to use personalised information to make empathic forecasts, forecasts for a friend should be more accurate, especially for long-lasting friendships. As it is, affective forecasts seem to be based on an intuitive theory applied to forecasts for the self, friends, and strangers.

Indeed, affective and empathic forecasts may both be based on the same intuitive theory of how people react to emotional events (cf. Igou, 2004; Ross, 1989). People base both forecasts on common knowledge (e.g., receiving positive feedback on a test will lead to certain positive emotions). Alternatively affective forecasts may be projected onto others and thus empathic forecasts may be derived from affective forecasts. Projection is a pervasive strategy used by people for different social judgements (Ames, 2004; Hoch, 1987; Hodges, Johnsen, & Scott, 2002; Ross, Greene, & House, 1977; Van Boven & Loewenstein, 2003). Our design did not allow us to disentangle whether high correspondence between affective and empathic forecasts is due to projection or due to the fact that people base both forecasts on the same intuitive theory. More research is needed to investigate the processes underlying empathic forecasts.

In all three studies, the impact bias was more pronounced in the negative feedback condition. Although we did not directly compare whether it was stronger for negative events, these results are in line with earlier research (Finkenauer et al., 2007; Gilbert et al., 1998), highlighting that the same processes that lead to the impact bias in affective forecasts may lead to the impact bias in empathic forecasts. Future research should examine whether processes such as immune neglect and focalism, which underlie the impact bias in affective forecasts, also explain the occurrence of the impact bias in empathic forecasts (Wilson & Gilbert, 2005).

Accuracy of forecasts

Although people's empathic forecasts are biased, they are also accurate. We investigated two types of accuracy, empathic forecasting accuracy and between-person forecasting correspondence. We found that between-person forecasting correspondence was higher than empathic forecasting accuracy. We believe that between-person forecasting correspondence may be more important than empathic forecasting accuracy. When talking with someone about an upcoming event and perhaps confiding one's worries about its potential negative outcomes, the other could be high in empathic forecasting accuracy or high in between-person forecasting correspondence. The consequences of these two forms of accuracy for both relationship partners and the relationship between them may be very different. If the other shows high empathic forecasting accuracy, he or she foresees that the impact of the event

will not be as intense as predicted by the confiding person. Therefore he or she is likely to downgrade the need to worry. This may elicit feelings of not being understood in the confiding person and, even more importantly, may undermine the potential beneficial effects of biased affective forecasting. To illustrate, anticipating the negative consequences of a future event can motivate people to work hard to avoid a negative outcome of the event (Finkenauer et al., 2007). Downgrading the need to worry may have the paradoxical effect of reducing the other's motivation to work hard, thereby possibly even increasing the likelihood of a negative outcome (cf. Norem & Illingworth, 2004). If the other shows high empathic forecasting accuracy correspondence, however, he or she will overestimate the impact of the event similar to the confiding person. Therefore he or she is likely to validate the need to worry. On the relationship level, between-person forecasting correspondence could lead to feelings of being understood and the perception that the partner is responsive to and supportive of the self (Reis, Clark, & Holmes, 2004). On the individual level, between-person forecasting correspondence may validate people's appraisal of future events and strengthen the motivation to avoid a negative outcome of the event. High between-person forecasting correspondence may therefore be more functional in an interpersonal setting than high empathic forecasting accuracy.

We can only speculate about the cognitive and motivational processes underlying the fact that affective forecasts of one person and empathic forecasts of a friend are related. It is possible that these processes are entirely cognitive. People may use the same strategy for the self and the other because it is easy and effortless, whereas adjusting a forecast by taking the situation of a friend into account involves an extra step (cf. Van Boven et al., 2005). However, these processes may also be motivational. If people try to be supportive and to motivate the other by highlighting the extreme consequences of a certain event and thus agree with the affective forecast of the other, this is probably a strategy that is appreciated by the other and rewarding for the self. Future studies should investigate the motivational underpinnings of between-person forecasting correspondence more systematically.

Although our theoretical reasoning underlines individual and social underpinnings of empathic forecasting, situational and contextual factors cannot be excluded. To illustrate this, in line with our suggestion that forecasts are, at least partly, based on intuitive theories, empathic forecasting can be assumed to be easier for situations that are concrete and normative (e.g., gaining or losing money on the stock market, succeeding or failing an examination, watching a comedy) than for situations that are abstract and complex (e.g., relational break-ups, moving to a new city, becoming a parent). More research is needed to systematically investigate those

situational and contextual factors that facilitate rather than impede empathic forecasting.

We argued that between-person forecasting correspondence can lead to feelings of agreement and of being understood. This should be beneficial for the relationship and therefore should enhance relationship satisfaction (Murray, Holmes, Bellavia, Griffin, & Dolderman, 2002). We found no direct link between either relationship satisfaction and duration and empathic forecasting accuracy or between-person forecasting correspondence, however. This lack of findings sheds doubts on the potential beneficial effects of high between-person forecasting correspondence for the relationship in the long run. Yet, participants in our studies did not communicate their empathic forecasts to each other. As a consequence, there was no chance for the positive effects of perceived between-person forecasting correspondence to emerge. Future research should investigate the positive effects of between-person forecasting correspondence by actually letting people talk about their forecasts. We predict that people will show a preference for others who are high in between-person forecasting correspondence compared to those who are high in empathic forecasting accuracy.

Conclusions

Foreseeing the future is impossible. However, people can and do make forecasts about the future. Empathic forecasts may be only a small slice of all the forecasting work that people do in their lives. However, empathic forecasts may help us to understand others. Our research shows that to reach this goal, people do not even have to try to be accurate. Even with biased empathic forecasts, people can achieve high levels of between-person forecasting correspondence.

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