Location, Location, Location: The Misprediction of Satisfaction in Housing Lotteries

Elizabeth W. Dunn
Timothy D. Wilson
University of Virginia
Daniel T. Gilbert
Harvard University

People tend to overestimate the emotional consequences of future life events, exhibiting an impact bias. The authors replicated the impact bias in a real-life context in which undergraduates were randomly assigned to dormitories (or "houses"). Participants appeared to focus on the wrong factors when imagining their future happiness in the houses. They placed far greater weight on highly variable physical features than on less variable social features in predicting their future happiness in each house, despite accurately recognizing that social features were more important than physical features when asked explicitly about the determinants of happiness. In Experiment 2, we found that this discrepancy emerged in part because participants exhibited an isolation effect, focusing too much on factors that distinguished between houses and not enough on factors that varied only slightly, such as social features.

Keywords: *affective forecasting; impact bias; predictors of happiness; emotion; isolation effect*

It is safe to say that chocolate cake, sunny spring days, and true love are more likely to produce happiness than are mud pies, freezing rain, and bad breakups. Yet, even if people accurately recognize what factors will lead to happiness, they may fail to apply this knowledge in imagining how they will feel in the future. For example, consider the case of a high school senior touring two universities that differ greatly in terms of setting (urban vs. rural), size, and gender ratios but are very similar in terms of dorm life, available extracurriculars, and opportunities for contact with professors. In predicting how happy he or she would be at each university, the rational student should weight the quality of each aspect (e.g., availability of extracurriculars) by its importance to his or her happiness. Yet, we would argue that the student may inadvertently place undue weight on those factors that vary a great deal across universities while placing little or no weight on important factors that vary less across options in imagining his or her future well-being at each school.

This prediction follows from Tversky's (1972) elimination-by-aspects theory of choice. According to the theory, people simplify choices between options by canceling out and disregarding features that are shared across options, a tendency Kahneman and Tversky (1979) term the "isolation effect" (see also Houston & Sherman, 1995; Houston, Sherman, & Baker, 1991). Applying this theory, Hodges (1997) asked participants to choose between three apartments, including two that shared several very positive features but also had unique negative features, as well as one that had a unique set of positive and negative features. Although the two apartments with shared features were more attractive, on balance, than the third apartment, participants exhibited a preference for the latter because they cancelled out the positive, shared features of the first two apartments, paying attention primarily to the unique, negative features.

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Focusing on unique features while canceling out shared features may be a reasonable and efficient strategy for choosing between options. For example, it would be sensible for the college-bound student to pay attention primarily to features that varied a great deal across University A and University B in deciding which school he or she would rather attend. But it would surely be unwise for the student to conclude that he or she would be blissfully happy at University A and miserable at University B while neglecting important factors that were similar across these universities.

To the extent that people overestimate differences in the emotional consequences of various outcomes due to ignoring shared features, they are likely to enjoy desirable outcomes less than they expect while reaping unanticipated happiness from less desirable outcomes. This tendency may help to explain why individuals are often woefully inaccurate in predicting how various outcomes will affect their happiness (Buehler & McFarland, 2001; Gilbert, Driver-Linn, & Wilson, 2002; Gilbert, Lieberman, & Wilson, in press; Gilbert, Pinel, Wilson, Blumberg, & Wheatley, 1998; Gilbert & Wilson, 2000; Loewenstein & Schkade, 1999; Mitchell, Thompson, Peterson, & Cronk, 1997; Sieff, Dawes, & Loewenstein, 1999; Wilson & Gilbert, in press; Wilson, Wheatley, Meyers, Gilbert, & Axsom, 2000). People frequently overestimate the duration and intensity of their own emotional responses to future events and outcomes, a tendency that Gilbert et al. (2002) term the "impact bias." In everyday life, people often engage in affective forecasting when envisioning competing possibilities (e.g., receiving tenure vs. not, living in the suburbs vs. the city, ordering foie gras vs. frog legs). As an important artifact of this process, features that differ between competing options may drive forecasts, whereas features that are relatively constant take a backseat.

In a similar vein, Wilson et al. (2000) showed that individuals exhibit the impact bias in part because they overlook the fact that the emotional impact of any one event will be mitigated by other events, such as snowstorms, parties, and the other ups and downs of daily life, an oversight Wilson et al. (2000) termed "focalism" (see also Schkade & Kahneman, 1998). We suggest that the isolation effect may produce a different kind of focusing bias, in which individuals ignore the affective consequences of important features that are shared across potential outcomes, leading to exaggerated expectations regarding differences in future well-being associated with one outcome versus another.

The housing system at a major university provided us with an opportunity to conduct an initial test of this hypothesis. In the spring of their 1st year, students at the university are randomly assigned to spend the subsequent 3 years of college living in 1 of 12 dormitories (or "houses"), with each serving as a kind of college within the college. Each 1st-year student enters the housing lottery along with the roommates he or she has chosen as well as a group of up to 15 other friends ("blockmates") who are automatically assigned to the same house. Thus, by the time students enter the housing lottery, they know the group of people whom they will live with the following year. In addition, most 1st-year students are familiar with the location and other physical characteristics of the houses as well as the individual "character" of each house (e.g., one house is known for its spirited intramural teams, another for its parties, another for its historical tolerance of gays and other stigmatized groups). The houses vary a great deal in perceived quality, and most students anticipate that housing assignment will strongly influence their happiness; 1st-year students often stay up all night awaiting their housing assignment and can be seen jumping up and down or accepting consolation from an upper-class student after receiving news that they have been assigned to a desirable or undesirable house. Thus, the housing system provides a natural experiment in that students are randomly assigned to a good or bad outcome that they consider extremely important.

Whereas physical features (e.g., location) differ greatly across houses, social aspects of house life (e.g., sense of community) vary less across the houses. Indeed, because one enters the housing lottery with a group of roommates and blockmates, the quality of one's relationships with these close others should be roughly equivalent regardless of house assignment. Typically, social relationships are a critical determinant of happiness (Argyle, 1999; Biswah-Diener & Diener, 2001; Diener, Gohm, Suh, & Oishi, 2000; Diener, Suh, Lucas, Smith, 1999; Larson, 1990; Myers, 1999; Sheldon, Elliot, Kim, & Kasser, 2001); indeed, Diener and Seligman (2002) speculated that perhaps "good social relationships are, like food and thermoregulation, universally important to human mood" (p. 83). When asked directly about the determinants of happiness, most people seem well aware of the critical role of close relationships (Campbell, Converse, & Rodgers, 1976; Freedman, 1978; Loewenstein & Schkade, 1999; Pettijohn & Pettijohn, 1996). For example, respondents at Pittsburgh International airport rated family life and friends as most important to happiness while rating income as less important (Loewenstein, 1996, described in Loewenstein & Schkade, 1999). Thus, we predicted that social aspects of house life would be related to actual happiness and that participants would recognize the critical importance of social features when explicitly asked about determinants of happiness.

Yet, we anticipated that when predicting their future happiness, students would pay little attention to the quality of social features that they expected to find in the houses because social features varied less than physical features across houses. In other words, we predicted that the tendency to focus on highly variable features (i.e., the isolation effect) would overwhelm participants' explicit recognition that less variable social features are critical to happiness.

In two experiments, we examined whether participants overestimated how happy they would be living in a desirable house as well as how unhappy they would be living in an undesirable house, thereby exhibiting the impact bias. To the best of our knowledge, this represents the first attempt to demonstrate the impact bias using a multiyear longitudinal design with random assignment to a major life outcome. In addition, we attempted to demonstrate a mechanism for the impact bias that has not previously been investigated, namely, the isolation effect. As discussed, we predicted that participants would underestimate the importance of features that the houses had in common (social relationships), even though they knew, in the abstract, that these features would be important to their happiness. We predicted that participants would overestimate the importance of features that varied across houses (physical features).

EXPERIMENT 1

Method

Overview. In the spring of their 1st year (Time 1), shortly before they learned which house they would live in for the subsequent 3 years, college students predicted how happy they would be 1 year later if they were living in each of 12 houses. One and 2 years later (Times 2 and 3), we asked participants to report their actual happiness. We predicted that people would overestimate how happy they would be if they were assigned a desirable house and underestimate how happy they would be if they were assigned an undesirable house. Furthermore, people were expected to base their forecasts more on physical features that varied greatly between houses and less on social features that varied relatively little, even though social features would be more related to actual happiness than physical features.

Participants. At Time 1, 174 1st-years completed our initial questionnaire. Of these, 118 completed the Time 2 survey as sophomores and 84 completed the Time 3 survey as juniors.

Time 1 survey. The initial survey asked participants to predict how happy they would be overall at the same time next year if they were living in each of the 12 houses on a scale ranging from 1 (*unhappy*) to 7 (*happy*). Similar one-item measures have been used successfully in other affective forecasting studies (e.g., Gilbert et al., 1998) and possess acceptable psychometric properties (Diener et al., 1999; Fordyce, 1988). In addition, participants estimated the extent to which 10 features related to house life (e.g., location, sense of community) would influence their happiness with the house on a scale ranging from 1 (*will have no influence on my happiness*) to 7 (*will have a large impact on my happiness*). Six of these features were physical qualities of the house, whereas four of the features were related to the quality of social life in the house (see Table 1). All participants completed the survey approximately 1 to 2 weeks before they were randomly assigned to the house where they would spend their sophomore, junior, and senior years.

Time 2 survey. One year after completing the initial survey, participants were asked to report their overall happiness on the same 7-point scale used in the first survey.[1] Participants also reported how much each of the physical and social features of house life had influenced their happiness on a scale corresponding to that used at Time 1. In addition, participants were instructed to rate the objective quality of these 10 features of life in their house on a 7-point scale (1 = *poor*, 4 = *average*, 7 = *excellent*).

Time 3 survey. Two years after the initial survey, participants again reported their happiness and provided objective ratings of the quality of the 10 features of house life on the same scales used at Time 2. All surveys were conducted via e-mail and were completed between March 19 and March 27 of each year (except for two participants who completed the Time 2 survey during the first week of April).

Results and Discussion

Impact bias. Across the sample as a whole, participants' forecasted happiness was significantly (although not highly) correlated with their overall happiness a year later, $r(109) = .26$, $p < .006$. Fifty-three participants were assigned to houses in which they expected to be below their personal mean in predicted happiness (undesirable house group), whereas 56 participants were assigned to houses where they expected to be at or above their personal mean (desirable house group).[2] Participants who were assigned to houses they considered undesirable were significantly happier overall ($M = 5.38$, $SD = 1.16$) at Time 2 than they had expected to be ($M = 3.43$, $SD = 1.5$), $t(52) = 10.71$, $p < .0001$, $d = 1.49$. In contrast, participants who were assigned to desirable houses were significantly less happy overall ($M = 5.45$, $SD = 0.92$) than they had expected ($M = 5.96$, $SD = 0.85$), $t(55) = -3.04$, $p < .01$, $d = 0.41$. Consistent with previous research, then, we found that participants overestimated how much an important life event would affect their happiness. Indeed, participants assigned to desirable houses

TABLE 1: Physical and Social Features Relevant to House Life

Physical Features	*Social Features*
Location	Relationships with roommates
Attractiveness	Relationships with blockmates (friends who enter housing lottery together)
Room size	Relationships with tutors (graduate/ faculty advisers who live or eat in the house)
House size	Sense of community in the house
Facilities (e.g., for athletics, arts, etc.)	
Dining hall	

were not significantly happier than participants assigned to undesirable houses, $t < 1$.

Features related to actual happiness. To examine whether forecasters go astray partly because they focus on the wrong factors in imagining their emotional futures, we first sought to demonstrate that the quality of social features in the houses predicted participants' actual happiness. We summed participants' Time 2 ratings of the objective quality of the four social features in their house and their ratings of the objective quality of the six physical features in their house to create social and physical quality composites, which we centered at 0 by subtracting the composite means. We entered the composite quality of social features (α = .50) and the composite quality of physical features (α = .55) into a regression predicting happiness at Time 2; in this analysis and subsequent analyses, we first examined the main effects of social and physical quality in a simultaneous regression, and then the interaction term was added to the model in a second step. There was a marginally significant relationship between overall happiness and the quality of social features, $t(114)$ = 1.66, β = .16, p = .10, whereas overall happiness was unrelated to the quality of physical features, $t(114)$ = 0.66, β = .06, p = .51, or to the interaction of social and physical feature quality, $t(113)$ = –1.24, β = –.12, p = .22.

We examined these relationships again the following year using Time 3 ratings of physical and social features to predict happiness at Time 3. The quality of social features was again positively related to overall happiness, $t(77)$ = 2.75, β = .35, $p < .01$. Unlike at Time 2, the quality of physical features was negatively related to overall happiness, $t(77)$ = –2.27, β = –.29, $p < .03$.[3] The two-way interaction of physical and social features was nonsignificant, $t(76)$ = –0.42, β = –.05, p = .67. Thus, across their sophomore and junior years, participants' happiness was consistently related to their ratings of social life in the house. In contrast, the relationship between physical features and happiness was nonsignificant or in the opposite to the expected direction.

Features related to forecasted happiness. Do forecasters recognize the relationship between social features and their future happiness? At Time 1, when asked directly about the determinants of their happiness, forecasters predicted that the four social features would have a slightly greater impact on their happiness (M = 4.91, SD = 1.10) on average than would the six physical features (M = 4.67, SD = 0.93), $t(104)$ = 2.33, $p < .02$.

Yet, in imagining how happy they would be in specific houses, forecasters might overlook the role of social features. To explore this possibility, we examined the relationship between participants' affective forecasts at Time 1 and their ratings of the physical and social features of their house at Time 2 (recall that participants did not rate these features at Time 1). We entered Time 2 ratings of physical quality and social quality, followed by the two-way interaction, into a regression predicting forecasted happiness at Time 1 for the house to which the participant was actually assigned. Ratings of the physical quality of the house at Time 2 were strongly related to forecasted happiness, $t(106)$ = 4.32, β = .39, $p < .0005$, suggesting that participants were aware of the physical characteristics of the houses and relied heavily on this information in predicting their future happiness. In contrast, ratings of social features at Time 2 were unrelated to forecasted happiness, $t(106)$ = 0.26, β = .02, p = .80, suggesting that participants were unable to predict the quality of social features they would experience in the house or placed little weight on this information in forecasting their happiness. The two-way interaction was nonsignificant, $t(105)$ = –1.49, β = –.14, p = .14.

The overemphasis placed on physical features helps to account for the discrepancy between participants' affective forecasts and experiences. We entered participants' Time 2 ratings of social and physical features into a regression predicting the difference between actual and forecasted happiness and then added the two-way interaction to the model. Participants who reported high satisfaction with the physical features of their house exhibited relatively low overall happiness compared to their forecasts, $t(106)$ = –3.96, β = –.37, $p < .0005$, suggesting that physical features did not deliver the degree of happiness participants had anticipated; neither the quality of social features, $t(106)$ = 0.81, β = .08, p = .42, nor the two-way interaction, $t(105)$ = 0.34, β = .03, p = .74, significantly predicted the difference between overall happiness and predicted happiness.

Summary of results. As expected, we found strong support for the impact bias; participants overestimated how happy they would be in desirable houses and how miserable they would be in undesirable houses. Our results suggest that forecasters may have erred by focusing on physical features such as location while virtually ignoring the quality of social life in the houses. When our participants were sophomores and juniors, their ratings of house social life were reliably related to their actual happiness, whereas their ratings of house physical features did not consistently predict happiness. Yet, the affective forecasts they made as 1st-years were strongly related to the quality of physical features and unrelated to the quality of social life they later found in the houses. Of interest, participants accurately reported that social features would strongly influence their happiness when they were explicitly asked about the determinants of happiness. Thus, although quality of social life was related to happiness and participants recognized that this would be the case, participants' forecasts were unrelated to the quality of social life they found in the houses. Instead, forecasts were driven by physical qualities of the houses, which failed to deliver the lasting pleasure participants anticipated.

Because the Time 1 survey did not ask participants to predict the quality of social and physical features in all 12 houses, we could only examine the relationship between Time 2 ratings of social and physical quality and Time 1 affective forecasts. It is possible, then, that participants estimated the quality of social life they would find the following year and used these estimates in their affective forecasts, but that their estimates were highly inaccurate, thereby eliminating any relationship between forecasts and the quality of social life they actually experienced. To tackle this potential problem, we asked a new sample of 1st-years to predict the quality of each of the social and physical features they expected to find in each of the 12 houses.

In addition, we tested the isolation effect more directly by asking some participants to think about features that would be the same across houses immediately before forecasting. We predicted that this manipulation would reduce the isolation effect, thereby increasing the weight participants placed on social features. Finally, Study 2 addressed a potential alternative explanation of the results of Study 1, namely, that there was insufficient variance in people's ratings of social features to allow for correlations with predicted or actual happiness.

EXPERIMENT 2

Method

Time 1 survey. We gave a longer version of the Time 1 survey used in the first experiment to a new sample of 144 1st-year participants at the same university, who completed it approximately 1 to 2 weeks before receiving their housing assignment. In addition to predicting how happy they would be 1 year later if they were living in each of the 12 houses, participants predicted how much the 10 features of house life examined in Study 1 would influence their happiness. Next, participants rated the objective quality of each of the physical and social features they expected to find in each of the 12 houses. For example, in considering a given house, they rated how good the location would be and how good the sense of community would be. They were asked to write "dk" or "don't know" if they felt they could not predict how good a certain feature would be in a given house; otherwise, all of the scales were equivalent to those used in the previous study. Finally, participants rated how much each of the features would vary across different houses on a 7-point scale (1 = *would not vary at all*, 7 = *would vary a great deal*) as well as how easily they could predict the quality of each feature (1 = *very difficult to predict*, 7 = *very easy to predict*) and how easily they could visualize each feature (1 = *very difficult to visualize*, 7 = *very easy to visualize*).

Manipulation of isolation effect. Immediately prior to completing the survey, a subset of participants was randomly assigned to answer questions designed to manipulate their focus on features that varied relatively little across houses; these participants were asked to write about aspects of the houses and house life that would be "pretty much the same" across houses immediately before forecasting. To reduce potential demand characteristics, we included a separate question that asked participants to write about aspects that would "vary a great deal" across houses. One group of participants ($N = 28$) first wrote about what would vary and then about what would be the same across houses (same-last condition). We expected these participants to place increased weight on social features because they thought about aspects of house life that would be similar across houses immediately before forecasting.

Another group of participants ($N = 40$) answered the two questions in the reverse order (vary-last condition), such that they thought about highly variable aspects of house life immediately before forecasting. Control participants ($N = 76$) were not asked any questions before completing the main part of the survey. If participants focused on highly variable features by default, then participants in both the control and the vary-last conditions should place greater weight on physical features than social features in making affective forecasts, whereas participants in the same-last condition should show a reduction in this bias.

Time 2 survey. One year after completing the initial survey, participants were asked to complete the same questions used at Time 2 in Experiment 1; participants rated their actual happiness as well as the affective impact and objective quality of the various physical and social features of their house. A total of 90 participants returned the Time 2 survey (63% of original sample).

Results and Discussion

Replication of Study 1. As in Study 1, we found strong support for the impact bias. Participants who were assigned to houses they considered undesirable were significantly happier overall ($M = 5.0$, $SD = 1.11$) than they had expected to be ($M = 3.82$, $SD = 0.86$), $t(35) = 5.26$, $p < .001$, $d = 0.89$, whereas participants who were assigned to desirable houses were less happy ($M = 5.41$, $SD = 1.35$) than they had anticipated ($M = 6.02$, $SD = 0.94$), $t(51) = 2.81$, $p < .007$, $d = 0.39$. Although participants in desirable houses reported somewhat greater overall happiness than participants in undesirable houses, this difference did not reach significance, $t(86) = 1.52$, $p = .13$, $d = 0.33$. Consistent with Study 1, there was a modest correlation between forecasted happiness and actual happiness, $r(88) = .19$, $p < .08$.

Replicating Study 1, participants predicted that the quality of social features in the house would influence their happiness ($M = 5.35$, $SD = 0.82$) more than the quality of physical features would ($M = 4.92$, $SD = 0.85$) when they were asked directly about determinants of happiness, $t(141) = 5.71$, $p < .0001$. However, we predicted that participants' affective forecasts would actually be driven by the quality of physical features in the house rather than by the quality of social life participants anticipated. For each house, we entered ratings of physical quality (mean $\alpha = .81$) and social quality (mean alpha = .84) into a simultaneous regression predicting forecasted happiness and then added the two-way interaction to the model. In this way, we conducted 12 separate between-subjects regressions (one for each house). Across the 12 houses, there were no significant positive relationships between participants' ratings of social features and their forecasted happiness; for one house, there was a marginally significant negative relationship between anticipated social quality and forecasted happiness (see Table 2).[4] In contrast, significant or marginally significant positive relationships emerged between ratings of physical features and affective forecasts for 10 of the 12 houses. The two-way interaction was nonsignificant for 11 of the 12 houses. In line with our hypotheses, then, participants placed a great deal of weight on physical features of the houses and neglected social features entirely in imagining their future happiness—despite recognizing on an explicit level that social features mattered more than physical features.

Manipulation of isolation effect. We expected that asking participants to consider features that would be similar across houses would lead them to think about social features, whereas asking participants to think about features that would vary across houses would lead them to think about physical features. As a check on this manipulation, three research assistants who were unaware of our hypotheses coded participants' responses to the questions regarding what would vary and what would be the same across houses. For each question (vary and same), the coders noted whether participants mentioned each of the social and physical features of the houses. The coders showed considerable agreement, with effective reliabilities of .90, .88, .89, and .88 for ratings of the number of times participants mentioned physical features under the vary question, social features under the vary question, physical features under the same question, and social features under the same question, respectively. Averaging coders' ratings, we found that participants mentioned physical features ($M = 1.88$, $SD = 1$) significantly more than social features ($M = 0.48$, $SD = 0.67$) when asked what would vary across houses, $t(67) = 9.22$, $p < .001$, and mentioned social features ($M = 0.69$, $SD = 0.74$) significantly more than physical features ($M = 0.42$, $SD = 0.60$) when asked what would be similar across houses, $t(67) = -2.36$, $p < .02$, as expected.

TABLE 2: Summary of Regression Analyses Predicting Forecasted Happiness From Ratings of Social and Physical Qualities for Each House

		Social Quality		*Physical Quality*		*Social × Physical*	
House	N	β	t	β	t	β	t
House 1	40	–.13	–.80	.64	3.96***	–.44	–2.79**
House 2	31	–.07	–.28	.53	2.02**	.09	0.49
House 3	30	–.24	–.73	.66	2.00*	.02	0.07
House 4	41	.10	.56	.66	3.66***	.19	1.37
House 5	35	–.07	–.22	.45	1.44	.40	1.92
House 6	32	–.26	–1.30	.66	3.30**	–.23	–1.39
House 7	30	–.58	–1.74*	1.13	3.36**	.31	1.81
House 8	36	–.11	–.41	.60	2.30**	.31	1.48
House 9	38	–.09	–.59	.82	5.09***	.18	1.30
House 10	28	–.29	–.90	.93	2.90**	.10	0.51
House 11	33	–.08	–.29	.70	2.54**	.03	0.19
House 12	30	.00	.00	.58	1.58	.34	1.70

$*p \le .10$. $**p \le .05$. $***p \le .001$.

To examine whether our manipulation influenced the weight participants placed on social features, we used a multilevel linear model, an approach that allowed us to include all of our data in a single powerful analysis while accounting for the lack of independence between a single individual's ratings of the 12 houses (Bryk & Raudenbush, 1992; Kashy & Kenny, 2000; Kenny, Kashy, & Bolger, 1998). Although our model used continuous predictors, this analysis is analogous to a between-within ANOVA with repeated measures on one factor and a between-subjects manipulation on another factor. Multilevel models are increasingly used in repeated-measures designs in which each participant provides ratings on the dependent and independent variable at a series of time points; in such models, time is the lower-level unit nested within person, the upper-level unit. Our data can be thought of as similar to a repeated-measures design, with each house providing a measurement point. In our model, house is a lower-level unit nested within participant, the upper-level unit. Condition represents an upper-level variable because the manipulation was at the level of the participant. Affective forecasts (the dependent variable) and ratings of physical and social quality are lower-level variables measured at the house level.

We entered the upper-level variable of condition and the lower-level variables of anticipated social quality and anticipated physical quality, along with the interactions of these three variables, into a multilevel linear model predicting forecasted happiness (measured at the lower level of house). In essence, this multilevel model (a) created a regression equation predicting forecasted happiness from physical and social quality ratings for each participant across houses, (b) combined these equations to create an aggregate, and (c) compared whether the regression coefficients differed by condition. In line with our expectations, preliminary analyses revealed that the vary-last condition did not differ from the control condition; thus, we collapsed across these two conditions, which we contrasted with the same-last condition.

The multilevel model revealed a very strong positive relationship between anticipated quality of physical features and forecasted happiness, $t(336) = 12.02$, $B = 0.23$, $p < .001$, whereas the anticipated quality of social features was unrelated to forecasted happiness, $t(336) = -0.70$, $B = -0.03$, $p = .49$ (see Table 3).[5] The difference between the weight placed on physical versus social features may have been magnified in this analysis because there was much greater variability in any one participant's ratings of physical features (mean $SD = 4.4$) than social features (mean $SD = 1.76$) across houses. Because of this statistical artifact, the relative size of these main effects should not be overinterpreted, but this finding is at least consistent with the 12 between-subjects regressions showing that participants' affective forecasts were driven by the quality of the house's physical features rather than by social features.

The only other significant effect was the expected two-way Social Quality × Condition interaction, $t(336) = 2.59$, $B = 0.08$, $p < .01$. We plotted the mean forecasted happiness predicted by the model at 1 *SD* above and below the mean social quality rating for participants in the same-last condition and the control/vary-last condition based on standard guidelines (Aiken & West, 1991). As seen in Figure 1, this interaction demonstrated that participants placed greater weight on the quality of social features if they were asked to think about features of house life that would be similar across houses immediately before forecasting. This finding, we should note, is inconsistent with the interpretation that there was too little

TABLE 3: Multilevel Model Predicting Forecasted Happiness From Condition and Social and Physical Composites

	B	df	t
Fixed effects			
Physical quality	.23	336	12.02***
Social quality	–.03	336	–0.70
Condition	.14	60	1.38
Social Quality × Condition	.08	336	2.59**
Physical Quality × Condition	–.02	336	–0.94
Social Quality × Physical Quality	–.01	336	–1.30
Physical Quality × Social Quality × Condition	–.01	336	–1.60
Random effects			
Intercept (individual differences in forecasts)	.27		2.4**
Physical quality	.00		0.53
Social quality	.01		1.49
Residual	1.06		11.89***

NOTE: Total observations = 1,728; observations used = 404; $R^2 = .54$.
$*p \leq .10$. $**p \leq .05$. $***p \leq .001$.

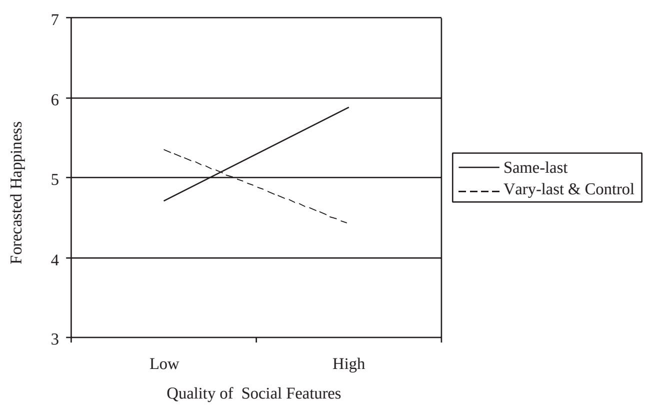

Figure 1 Relationship between social features composite and forecasted happiness by experimental condition.

variance in ratings of social factors to allow for predictability. People in the same-last condition, as expected, did appear to place greater weight on social factors than other participants when making their forecasts.

Although this model provides support for our hypotheses, it is based on only 62 out of our 144 participants (43%). Many participants had missing data for the social and physical composite variables because they failed to predict the quality of at least one of the house features, most likely due to the fact that some of the features (e.g., tutor quality) were relatively difficult to predict (recall that participants were given the option to say "don't know"). To compensate for this shortcoming, we conducted an additional analysis in which we substituted anticipated roommate quality for the social quality composite and anticipated quality of location for the physical quality composite. Roommate quality was rated as both the easiest to predict and the most important of the social features, and location was rated as both the easiest to predict and the most important of the physical features. By using these flagship variables as proxies for social and physical qualities, we were able to include 121 out of 144 participants (84%) in our analysis.

This analysis revealed a very strong relationship between anticipated location quality and forecasted happiness, $t(1,163) = 21.37$, $B = 0.52$, $p < .001$, as well as a smaller relationship between anticipated roommate quality and expected happiness, $t(1,163) = 5.29$, $B = 0.32$, $p < .001$ (see Table 4). Consistent with the analysis using composite variables, we found a significant Roommate Quality × Condition interaction, $t(1,163) = 2.27$, $B = 0.11$, $p < .05$; participants in the same-last condition placed greater weight on anticipated roommate quality than did participants in the control and vary-last conditions (see Figure 2). We also found a significant three-way Location Quality × Roommate Quality × Condition interaction, $t(1,163) = 2.45$, $B = 0.04$, $p < .05$.[6] Plotting this interaction revealed that participants in the same-last condition consistently used roommate quality in predicting their future happiness, whereas the other participants placed weight on roommate quality only when location was relatively good.

Although our first model combined all the relevant variables and included 43% of the sample and our second model used only the flagship variables and included 84% of the sample, results across the two analyses were consistent. In both models, we found that participants placed greater weight on physical features than social features in forecasting their future happiness. More important, we found that participants increased their use of social features if they were asked to consider aspects that would be similar across houses immediately before forecasting. This provides support for our argument that participants gave low weight to social features in making affective forecasts because of the isolation effect. Our analyses, of course, rest on the assumption that participants viewed physical features as more variable than social features. This assumption was strongly supported; participants reported that the quality of physical features would vary much more across houses (M = 5.33, SD = 0.74) than would the quality of social features (M = 3.05, SD = 0.97), $t(116) = 22.61$, $p < .0001$.

By manipulating people's focus on variables that would vary little across houses, we found support for the isolation effect in affective forecasting. It is possible, of course, that other factors also contributed to people's tendency to underweight social features. Because of the drive for certainty, forecasters may place excessive weight on features that can be predicted with confidence. Participants reported that the quality of physical features was easier to predict (M = 5.28, SD = 0.87) than the quality of social features (M = 3.47, SD = 1.35), $t(138) = 13.30$, $p < .0001$, a difference that may have increased forecasters' tendency to attend to physical features over social features.

TABLE 4: Multilevel Model Predicting Forecasted Happiness From Condition, Anticipated Roommate Quality, and Anticipated Location Quality

	B	df	t
Fixed effects			
Location quality	.52	1163	21.37***
Roommate quality	.32	1163	5.29***
Condition	–.05	119	–0.93
Roommate Quality × Condition	.11	1163	2.27*
Location Quality × Condition	–.01	1163	–0.49
Roommate Quality × Location Quality	.05	1163	2.46*
Location Quality × Roommate Quality × Condition	.04	1163	2.45*
Random effects			
Intercept (individual differences in forecasts)	.28		4.02***
Location	.03		3.32***
Roommate	.10		2.24*
Residual	1.04		22.54***

NOTE: Total observations = 1,728; observations used = 1,290; R^2 = .55. *$p \le .10$. **$p \le .05$. ***$p \le .001$.

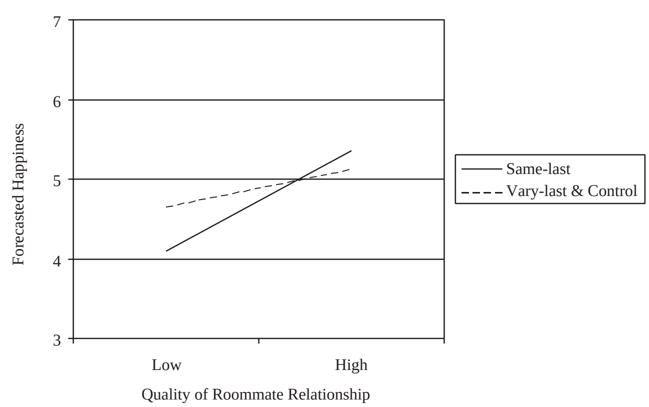

Figure 2 Relationship between roommate quality and forecasted happiness by experimental condition.

Features related to actual happiness. If social features were completely unpredictable, participants would be entirely justified in ignoring these features when making forecasts. Although plausible, this interpretation is not supported by the data; participants' ratings of the actual social quality of their assigned house at Time 2 correlated strongly with their predicted ratings of social quality for that house at Time 1, $r(21) = .60$, $p < .004$, and this correlation was similar in magnitude to the correlation between predicted and actual physical quality ratings, $r(32) = .52$, $p < .003$.

More important, overall happiness at Time 2 was better predicted by anticipated quality of social features than by anticipated quality of physical features at Time 1. We entered Time 1 ratings of anticipated social quality and physical quality into a regression predicting overall happiness at Time 2 and then entered the two-way interaction into a second model. Anticipated social quality at Time 1 was marginally related to overall happiness at Time 2, $t(15) = 1.78$, $\beta = .65$, $p < .10$, whereas predicted physical quality was unrelated to overall happiness, $t(15) = -0.17$, $\beta = -.06$, $p = .87$. The two-way interaction was nonsignificant, $t < 1$.

Unfortunately, these analyses included only 18 of the 90 participants who completed both surveys, due primarily to missing data for the Time 1 social and physical composite variables. Thus, we conducted an additional analysis in which we substituted anticipated roommate quality for the social quality composite and anticipated quality of location for the physical quality composite, which allowed us to include 65 out of 90 participants (72%) in our analyses. We found that anticipated roommate quality significantly predicted actual happiness, $t(62) = 3.12$, $\beta = .37$, $p < .003$, whereas anticipated location quality did not significantly predict actual happiness, $t(62) = 1.2$, $\beta = .14$, $p = .24$. The two-way interaction was not significant, $t < 1$.

Thus, anticipated social quality was at least as reliable a predictor of future overall happiness as anticipated physical quality. Another indication that participants in Experiment 2 made valid predictions of social feature quality is that these ratings were correlated with Experiment 1 participants' ratings of the actual quality of tutors and sense of community in the houses, $r(11) = .50$, $p < .12$; in other words, 1st-years' perceptions of the social quality of the houses corresponded with sophomores' experiences in the houses. These findings cast doubt on the interpretation that forecasters simply ignored social features because their quality was impossible to predict.

Furthermore, it is important to note that our analyses examining the relationship between forecasted happiness and forecasted feature quality relied on those participants who felt that they could predict the quality of house features. The large number of "don't know" responses we received suggests that our survey enabled participants to admit ignorance when appropriate. We find it compelling that even participants who felt that they could make reasonable predictions about the quality of social features ignored this information in making affective forecasts. Still, the ease of predicting physical feature quality relative to social feature quality may have contributed to participants' tendency to overweight the latter and underweight the former. Future research may confirm the role of subjective predictability in moderating the extent to which various features influence forecasts, but the present research provides the strongest evidence for the role of perceived variability in moderating the relative influence of various features; participants placed excessive weight on highly variable physical features relative to less variable social features, and this tendency was attenuated when participants were led to think about features that would be the same across houses immediately before forecasting.

One might argue that ratings of social features were unrelated to forecasted happiness because of a statistical artifact: A relationship between social ratings and forecasted happiness could not emerge if there was insufficient variability in ratings of social features. Indeed, there was greater variance in physical features (mean $SD = 5.56$) than social features (mean $SD = 4.29$) across individuals, within houses. Similarly, although relevant only to the multilevel analyses, there was greater variance in physical features (mean $SD = 4.4$) than social features (mean $SD = 1.76$) across houses, within individuals. The critical point, however, is that Time 1 ratings of social features predicted overall happiness at Time 2 while failing to predict Time 1 affective forecasts. In addition, the fact that our manipulation of the isolation effect successfully altered participants' use of social features is inconsistent with the possibility that ratings of social features were too invariant to allow correlations with forecasts. Therefore, it seems unlikely that Time 1 ratings of social features failed to predict Time 1 affective forecasts primarily because of insufficient variability.

GENERAL DISCUSSION

In two experiments, we found strong support for the impact bias; participants predicted that housing assignment would have far more influence on their emotional well-being a year later than it actually did. Because we used a longitudinal design and participants were randomly assigned to a major life outcome that continued to shape their lives at college, this study provides the most powerful evidence to date for the impact bias. As sophomores and juniors, participants' actual happiness was more consistently associated with their ratings of social features of house life than with their ratings of physical features of their house. Although these latter results were correlational, our findings dovetail with previous research demonstrating that quality of social life is more important to happiness than are material comforts.

When asked explicitly about the determinants of their future happiness, participants recognized that social aspects of house life would be more important than physical qualities. Yet, Experiment 1 provided initial evidence that participants expected to be much happier in houses with good physical qualities, whereas we found no evidence that participants based their forecasts on the quality of social life in the houses. Indeed, participants who found themselves in houses with good physical features reported lower happiness than they had anticipated.

Consistent with Study 1, participants in Study 2 placed relatively little weight on social features in predicting their future happiness while placing a great deal of weight on physical features of the houses—despite the fact that actual happiness a year later was related to the perceived quality of social features at Time 1. Again, participants recognized the important role social life would play, reporting that social features mattered more on average than did physical features when questioned directly about determinants of happiness. Asking participants to consider what would be similar across houses immediately before forecasting led them to place greater weight on social features, which provides evidence that the isolation effect plays a role in affective forecasting; social features were generally disregarded because participants paid little attention to important features that were relatively constant across outcomes, unless explicitly instructed to do so.

Our results are interesting in light of the conflict between research showing that people recognize that social relationships are more important than material comforts in producing happiness and other research demonstrating that people's behavior often flies in the face of this stated belief (e.g., Putnam, 2000; Schor, 1991). The present research suggests that people may truly believe that social relationships are more important than material comforts, but they may lose sight of this belief when imagining their happiness with alternative outcomes that vary more on material than social dimensions. Again, we do not wish to argue that people always underweight social features and overweight physical features. Exactly the opposite pattern might emerge if participants were asked to predict their happiness given a set of options that varied greatly on social dimensions relative to physical dimensions (e.g., if they were asked to imagine how happy they would be in the same house with different sets of roommates). The key finding of our research is that individuals may easily lose sight of factors that they realize are important to their happiness if these factors do not vary greatly across the options they are imagining.

Of course, one might argue that the isolation effect reflects a reasonable strategy rather than a dysfunctional bias; perhaps it is wise to focus primarily on features that differ widely between competing options while ignoring features that are similar across options. We would argue that this tendency might sometimes be functional when choosing between options but makes far less sense when imagining one's future happiness given a specific outcome. For example, it would be quite reasonable to focus on location when choosing between houses that varied a great deal on this dimension but not on others. When imagining life in a specific house with a terrible location, however, it would be unwise to expect lasting misery while neglecting the happiness derived from living with one's wonderful roommates.

Limitations. Because several of our findings depended on correlational analyses, caution must be exercised in interpreting our results. For example, the positive relationship between happiness and quality of social features at Time 2 and Time 3 could indicate that both of these variables depended on a third variable, that happiness leads to greater satisfaction with social relationships, or that strong social relationships promote happiness. Research by Oishi and Diener (2001) suggests that general happiness is more likely to influence global ratings of social relationships than to influence more specific ratings used in our study (e.g., relationships with roommates). In any case, based on previous research, it seems reasonable to assume that the relationship between social life in the house and happiness is probably bidirectional, meaning that high-quality social relationships have at least some positive influence on happiness.

It is important to remember that not all of our analyses were correlational; participants were randomly assigned to houses and we randomly assigned people to condition in Study 2. If this were not the case, one might argue that good physical features failed to promote happiness in a consistent fashion because people who seek out material comforts are more difficult to please than their less-materialistic peers. Yet, in our research, participants were assigned at random to houses that would be expensive on the open market (because of their central locations, beautiful architecture, and large rooms) or to houses that would be relatively inexpensive. Thus, although the form of our analyses precludes strong causal inferences, the internal validity of the present research is stronger than most studies on the correlates of well-being.

Future directions. Because our research tested these ideas in the single domain of a university housing system, it would be worthwhile to expand this line of research through laboratory studies or field studies in a different domain. Although researchers have already examined the spurious factors that influence reports of subjective well-being (e.g., Schwarz & Clore, 1983), we believe that special biases come into play at the forecasting stage. As well as focusing exclusively on features that vary between outcomes, affective forecasters may place disproportionate weight on features that are easy to predict or visualize. Future research should focus on examining these variables directly to test whether forecasters show a systematic bias toward placing excessive weight on easily predictable and visualizable features.

Policy implications. Our research suggests that individuals may sometimes err by placing excessive weight on highly variable features and inadequate weight on less variable features in imagining the emotional consequences of competing options. A similar bias may emerge when policy makers envision options meant to increase the well-being of their constituents. For example, in the "slum clearance" projects of the 1950s and 1960s, urban planners chose to tear down small, dilapidated tenement buildings, constructing massive towers in their place. Policy makers apparently focused on the drastic improvement in physical features that this change would provide and overlooked the ramifications for social life of ripping up small, tightly knit tenement communities to create giant, anonymous collections of tower dwellers (Ross & Nisbett, 1991). Thus, individuals and policy makers alike may go astray if, as in our studies, they focus on alternatives that vary a great deal on features (e.g., physical aspects of tenements vs. high-rise apartments) that will be relatively inconsequential for people's well-being.

NOTES

1. After asking participants to report their overall happiness, we asked them to report their happiness with their house, specifically. When we substituted house-specific happiness for overall happiness in the analyses reported in this article, highly consistent results emerged. Therefore, only results for overall happiness are reported, but results of the house-specific analyses are available from the authors.

2. We used this idiographic approach to assess whether a given house assignment represented a positive or negative outcome for each individual. This approach was useful because evaluations of the houses varied from individual to individual, although there was substantial agreement about the relative desirability of the houses; the average correlation between any one participant's forecasted happiness and the overall sample's forecasted happiness for the 12 houses was $r = .69$, $p < .0001$.

3. Although the negative relationship between quality of physical features and happiness was unexpected, other studies have found a negative relationship between increases in material comfort (e.g., money) and well-being (e.g., Thoits & Hannan, 1979). Although this paradoxical finding is intriguing, it was inconsistent across time points and should be interpreted with caution.

4. Many participants failed to provide complete data for all 12 houses, resulting in a large amount of missing data in each of the 12 regressions. This potential problem is dealt with in detail in the subsequent multilevel modeling section.

5. Although not of central interest in this article, the model also provides estimates of the random effects. The intercept estimate indicates that there were significant individual differences in mean levels of forecasted happiness, collapsing across houses; in other words, some people expected to be happier than others. The small random effects of physical and social quality indicate that the weight placed on these variables varied little across participants.

6. The only other significant effect was an unpredicted two-way Location Quality × Roommate Quality interaction. Because this interaction was not consistent across models and did not involve condition, it will not be discussed further.

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