IS PHYSICAL ATTRACTION (PAT) A CAUSE OF SUBJECTIVE WELL-BEING (SWB)? Our values suggest that it should not be. We hope that our inner qualities, and not simply our outward appearance, cause life satisfaction. Physical attractiveness, however, appears to be a powerful resource in Western society. Because resources help people obtain rewards, PAT may cause SWB.

Early studies demonstrated that PAT is an important resource. Dion, Berscheid, and Walster (1972) found that more attractive persons were perceived to be warmer, stronger, and more poised, and were considered to be more exciting dates than those who were less attractive. In a meta-analysis of the literature, Feingold (1992) concluded that attractive people are perceived to be "more sociable, dominant, sexually warm, mentally healthy, intelligent, and socially skilled than unattractive people" (p. 304). Several studies have shown that the biases toward attractive people begin in childhood. For example, Clifford and Walster (1973) asked grade school teachers to examine academic records of children. Even though the performance information was identical in all of the files, teachers rated the attractive children as more intelligent and popular. These biases persevere into adulthood (e.g., Dipboye, Arvey, & Terpstra, 1977). As one might expect, beautiful adults fare better in social spheres (Berscheid & Walster, 1974; Curran & Lip-
In contrast to the positive findings of Umberson and Hughes (1987), studies that have examined forms of negative affectivity have found little relation with PAT (e.g., Noles, Cash, & Winstead, 1985). Feingold (1992) found a trivial overall relation between various forms of negative affectivity and SWB in a meta-analysis of 34 studies. However, past research has shown a degree of independence between life satisfaction and positive affect and negative affect, and thus past research on negative affectivity does not unequivocally indicate what the relation with PAT is for other forms of SWB, such as life satisfaction or general happiness. In the present studies we measured both general happiness and life satisfaction and correlated them with objective ratings of PAT.

An important question regarding the relation between happiness and PAT is that of causal direction. Rather than attractiveness leading to happiness, it is possible that happy people take better care of their appearance, so they may be more physically attractive. Or, it is possible that happy people smile more and therefore are rated as more attractive. Thus, it is important to control the effects of hairstyle, clothing, cosmetics, and facial expression in determining the relation between PAT and SWB. If native beauty correlates with SWB when the person is unadorned, it may be that PAT leads to higher well-being. If the difference between people’s unadorned and self-adorned appearances correlates most with SWB, however, it would suggest that SWB may lead happy people to effectively enhance their appearance to a greater extent.

Conclusion

The present studies were designed to assess the relation between PAT and life satisfaction, hedonic balance, and general happiness. In the current research we achieved a more rigorous analysis of the PAT–SWB relation by obtaining objective ratings of attractiveness using multiple raters, and ratings that were not contaminated by participants’ reports of well-being. It was also our intent to explore the causal direction between PAT and well-being. We recorded both participants’ enhanced PAT (as augmented by their spontaneous use of cosmetics, jewelry, and facial expression) and also their native beauty (unenhanced by accoutrements). In this way we could determine whether native beauty, enhanced beauty, or the difference between the two was most related to SWB. In addition, we examined how much the appearance of women and men was improved by enhancements, and whether video pictures were perceived as more attractive than still photographs. We also manipulated smiling in Study 2 to determine whether this variable mediated the PAT–SWB relation. Finally, we examined ancillary data, such as people’s goals and their self-perceived attractiveness, to better understand the SWB–attractiveness relation.

Study I

Study 1 was designed to explore the simple correlation between attractiveness and SWB in a large, unselected sample of college students. Three different measures of SWB were correlated with PAT ratings that had been made on the basis of a frontal photograph, a profile photograph, and a videotape. By comparing the correlations based on photographs with those based on a videotape, we hoped to determine whether PAT ratings might be biased by one’s social skills in such a way so as to artificially inflate the SWB–PAT correlation. The video should capture the effect of social skills on perceived attractiveness to a greater extent than do still photographs. Thus, an artifactual relation between PAT and SWB owing to a third variable—personality—can be examined by comparing video and still photograph ratings of attractiveness.

Method

Participants. Participants were 221 students (112 women, 109 men) enrolled in a course on SWB at the University of Illinois. As part of laboratory sessions, students were required to participate in a series of studies. The N for most analyses was slightly fewer than 221 participants because of scattered missing data.

Questionnaire measures. Participants completed three measures of SWB. The Satisfaction With Life Scale (SWLS; Diener, Emmons, Larsen, & Griffin, 1985; Pavot & Diener, 1993) is a measure that assesses global life satisfaction. The scale has been validated in many ways and has good psychometric properties. The Fordyce Sixty-Second Measure of Happiness (Fordyce, 1977) assesses global happiness on a scale that ranges from utterly depressed to ecstatic, elated, fantastic. This scale has also been the target of extensive validational work (Fordyce, 1988) and correlates well with a variety of types of measures of well-being. Finally, we used an affect adjective scale that taps the frequency of six major emotions (fear, anger, sadness, guilt, joy, and affection). We computed a hedonic balance score for each participant by subtracting the mean negative affect value from the mean for the positive emotions.

We also asked participants to estimate their own PAT on a scale ranging from 1 (poor) to 10 (excellent). During the semester-long data collection, participants were also asked to list their 15 most important personal strivings (see Emmons, 1986). Participants were then asked to what degree each of a variety of resources, including PAT, was relevant to each striving or goal. They indicated on a 1 (not at all relevant) to 5 (extremely relevant) scale how related PAT was to each of their goals. We averaged this rating across their 15 goals to determine how important PAT was to each participant’s goals.

Attractiveness ratings. Each participant was scheduled for a laboratory time at which she or he had several pictures taken. A 35-mm camera mounted on a tripod was used to take front and side profile shots, which were developed into standard 4-in × 6-in (10-cm × 15-cm) photographs with a glossy finish. In addition, participants were videotaped while interacting with a stranger for 10 min. The still photos were rated by 10 assistants on a 10-point scale. The 10 raters produced a composite rating (using raters as items) with a Cronbach’s alpha of .86 for the profile picture and of .89 for the frontal photograph. The videotape ratings were made of participants interacting in dyads with each other. On average, 13.46 assistants rated the video PAT of each participant. Participants were involved in different numbers of dyadic interactions, and their PAT rating was the mean across these sessions. The number of dyadic interactions varied from 1 to 6, but 88% of participants took part in either 2 or 3 interactions. Because different assistants rated different combinations of videotapes, we did not calculate interrater reliability for the video ratings.

In addition to the laboratory-photograph-based ratings of objective PAT, informants completed a questionnaire on the target participants. A minimum of three family members and friends of the participants rated them on how attractive they believed the participant was compared with the average university student. The 7-point scale ranged from 1 (much below average) to 7 (much above average). The ratings, including those for other resources too, were mailed directly back to the experimenters so that the participants could not see them.
Results

The three aggregated PAT ratings correlated highly with each other. Mean PAT ratings based on the two types of photographs correlated .83, whereas the photo ratings each correlated .68 with the video PAT ratings (which were recorded at a different session). These correlations demonstrate that there is a general characteristic of PAT that is somewhat independent of the mode and time of measurement. Despite the use of college student participants the PAT ratings were below the midpoint of the scale for all three types of pictures. There was a standard deviation of about 1 for each type of photo. Thus, to include 95% of the participants on the frontal looks, for example, ratings ranged from 2.33 to 7.05. Therefore, there was a large range on PAT.

The correlations between the three SWB measures and the three sets of PAT ratings are presented in Table 1. As can be seen, these correlations were not large. Contrary to predictions, the video attractiveness ratings did not correlate more highly with SWB than did the attractiveness ratings of photographs. There were no curvilinear (quadratic) trends. The correlations for men, but not for women, especially for life satisfaction, reached significance. Self-perceived PAT tended to correlate more strongly with SWB than did the attractiveness ratings of photographs. There was a mean difference in at least .10 for both the SWLS (average r = .15, p < .05) and the Fordyce scale (average r = .18, p < .01) were also entered as significant predictors. Thus, self-ratings of PAT appear to be influenced by SWB beyond the effects of one’s objective PAT. Participants rated themselves as somewhat more attractive than objective ratings based on the participants’ self-ratings. But both the SWLS (r = .23, p < .01) and the Fordyce scale (r = .23, p < .01) were also entered as significant predictors. These findings support Taylor and Brown’s (1988) claim that happy people are positively biased in their self-judgments when compared with objective yardsticks.

The video ratings were significantly higher than the picture ratings: video (M = 5.24) versus frontal picture (M = 4.69), t(216) = 9.16, p < .001; and versus the profile picture (M = 4.70), t(216) = 10.42, p < .001. This suggests that people are perceived as more attractive when they are active. This inference is further supported by the fact that informant ratings of these participants’ PAT averaged .47 on a 7-point scale. Thus, whereas the two photo ratings were substantially below the midpoint of their scales (5.5), and the video rating was slightly below the midpoint, the informant ratings were substantially above the 4.0 midpoint of their scale.

To shed light on why the SWB–PAT relations were so small, we examined participants’ goal ratings. First, we determined how important attractiveness was to people’s goals. On a 1-to-5 scale, PAT had a mean relevance rating of 2.05 (slight relevance). Of 21 resources, PAT was rated fourth from the bottom in relevance. Thus, the average participant did not see PAT as particularly relevant to his or her goals. Further exploration of the impact of goals by dividing participants into two groups on the basis of the relevance of PAT to their goals. The low-relevance group had lower correlations between PAT and the SWLS (average r = .10) and Fordyce scale (average r = .02) than did the high-relevance group (SWLS average r = .23, and Fordyce scale average r = .14). This suggests that for people for whom attractiveness is extremely relevant to their goals, there might be a stronger correlation of PAT with SWB. It is also interesting to note that the goal relevance of PAT was only slightly related to the objectively rated PAT of participants (average r = .11), thus suggesting that attractive people do not necessarily seek goals related to their attractiveness.

Another interesting finding to note is that PAT showed only tiny correlations with other resources. For example, participants’ GPAs (taken from their transcripts) were correlated with objective looks an average of only r = .01. The mean correlations between objective ratings of PAT and other selected resources (as rated by informants) was: money, r = .08; energy, r = .14; intelligence, r = .00; social skills, r = .17; romantic relationship, r = .16; and self-confidence, r = .06. These correlations suggest the possibility that PAT may not influence SWB strongly because there are so many other resources that tend to vary independently from PAT. We also examined whether various resources besides attractiveness could predict SWB (see Diener & Fujita, 1995). Certain informant-rated resources were stronger predictors of SWB (e.g., family support correlated .40 with life satisfaction, and social skills correlated .41 with global SWB).

One can also inquire as to whether PAT predicts satisfaction with various domains. The correlations between satisfaction with one’s romantic life and physical attractiveness were small but significant, video r(208) = .18, p < .01; profile photograph r(205) = .23, p < .001; and frontal photograph r(205) = .20, p < .01. Of the 33 correlations between looks and satisfaction with other domains (e.g., family, grades, health, career), not a single correlation was significant. These findings indicate that attractiveness has a small but significant influence on one’s satisfaction with one’s romantic life but has no effect on one’s satisfaction with other domains.

Table 1
Study 1: Correlations Between Subjective Well-Being and Physical Attractiveness

<table>
<thead>
<tr>
<th>Sample and condition</th>
<th>Satisfaction With Life Scale</th>
<th>Global happiness</th>
<th>Hedonic balance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall sample (N = 221)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Frontal photograph</td>
<td>.17*</td>
<td>.04</td>
<td>.10</td>
</tr>
<tr>
<td>Profile photograph</td>
<td>.24**</td>
<td>.14*</td>
<td>.12</td>
</tr>
<tr>
<td>Videotape</td>
<td>.17*</td>
<td>.08</td>
<td>.09</td>
</tr>
<tr>
<td>Self-perceived PAT</td>
<td>.29**</td>
<td>.28**</td>
<td>.30**</td>
</tr>
<tr>
<td>Women (N = 112)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Frontal photograph</td>
<td>.10</td>
<td>-.07</td>
<td>.08</td>
</tr>
<tr>
<td>Profile photograph</td>
<td>.18</td>
<td>.02</td>
<td>.09</td>
</tr>
<tr>
<td>Videotape</td>
<td>.11</td>
<td>.05</td>
<td>.11</td>
</tr>
<tr>
<td>Men (N = 109)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Frontal photograph</td>
<td>.27**</td>
<td>.11</td>
<td>.12</td>
</tr>
<tr>
<td>Profile photograph</td>
<td>.33**</td>
<td>.22*</td>
<td>.13</td>
</tr>
<tr>
<td>Videotape</td>
<td>.23**</td>
<td>.13</td>
<td>.07</td>
</tr>
</tbody>
</table>

*p < .05.  **p < .01.
Another interesting observation is that although aggregated PAT ratings reached acceptable levels of reliability, individual perceptions of PAT differed widely. For example, the objective raters’ PAT ratings based on the video correlated across participants an average of only $r = .35$. The average agreement between individual raters on the profile picture was $r = .40$ and on the frontal picture was $r = .46$. Among the 10 video raters, there was an average difference across participants of 3.8 scale points between the highest and lowest PAT ratings for each participant. For the pictures this rating variability was even greater: 4.6 scale units for the frontal shot and 4.8 units for the profile picture. Thus, raters ranged over almost half the scale for individual participants, suggesting large variability in perceptions of attractiveness. Similarly, the participants’ self-perceptions of their own PAT correlated at a low level with objective ratings of PAT: frontal picture, $r = .24$; profile picture, $r = .21$; and video rating, $r = .34$. Finally, the mean agreement between informants on the PAT of the target participants was only $r(218) = .23$. Thus, although PAT ratings can be made reasonably reliable by aggregating the ratings of many raters, the perceptions of individuals correlate only modestly.

An intriguing question is whether there is greater agreement on the attractiveness of some individuals than on others. We examined the variability in ratings across picture conditions. The variability in the ratings of individuals correlated weakly across conditions ($r = .36, .06, \text{and} .08$), thus indicating that there are not individuals whose PAT is easier to judge across methods.

Discussion

Contrary to predictions, video attractiveness was not a better predictor of SWB than was attractiveness based on still photos. Because physical attractiveness appears to be an important resource in western society, we were surprised by the low correlations found between it and SWB. Nonetheless, a number of these correlations were statistically significant. We therefore conducted two additional studies to determine whether the low correlations found here could be replicated and whether they were due to factors such as smiling and appearance enhancements. To increase our ability to differentiate the various factors that play a role in the relation of PAT and SWB, in Studies 2 and 3 we used extreme groups. In Study 2 we selected participants who were either low or high in PAT, and in Study 3 we selected prescreened participants who were either lower or higher in SWB. The rationale was that by using extreme groups, the correlations would be magnified and therefore would yield a clearer picture of the processes involved.

Study 2

The second study was designed to further explore the relation between PAT and SWB by varying aspects of the conditions in which PAT ratings were made. Although prescreening pictures were used to select extreme groups based on attractiveness, the correlations between SWB and PAT were based on attractiveness ratings that were based on pictures in certain conditions.

Natural State

This was basically a “come-as-you-are” condition. Participants spontaneously came to the laboratory with varying levels of cosmetics, jewelry, and attractiveness of clothing. In this condition, no attempt was made to alter appearance, and the individuals were allowed to show whatever facial expression they wished. This condition, by comparison with other conditions, allowed us to estimate whether participants who are high in well-being do more to enhance their appearance beyond their level of native beauty.

Adorned Versus Unadorned States

The adorned state was essentially the same as the natural condition (i.e., including clothing, cosmetics, and jewelry) except that we systematically manipulated facial expression (described below). In the unadorned state, participants were asked to remove their cosmetics and jewelry, and their clothing and hair were covered. By comparing the adorned versus unadorned states, we could estimate the effects of personally controllable factors on the PAT-SWB relation.

Smiling Versus Neutral Expression

Participants were asked to smile and then to assume a neutral expression in the adorned and unadorned states (thus creating four conditions). Because it was thought that smiling might contribute to more favorable attractiveness ratings, a comparison could be made between the different ratings to determine the mediating effects of smiling on PAT.

Method

Participants. Participants were 131 introductory psychology students at the University of Illinois (71 men, 60 women) who took part in the study in partial fulfillment of a course requirement. These participants were selected from a larger pool of students who had previously participated in another study (not Study 1). This larger study included answering questionnaires about current mood and SWB, as well as being photographed. To minimize biases in ratings due to cross-cultural differences, only Caucasian participants and raters were used in this study. Unfortunately, we did not have enough participants from other ethnic groups to form a separate sample.

Participants were selected for the actual study on the basis of greater or lesser PAT. A group of eight raters was first shown a sample of the photographic slides taken from the initial pool of participants to help establish a range of PAT. Next they were shown slides of the entire pool, one at a time, and were asked to rate the photographs for PAT on a 1 (extremely unattractive) to 10 (extremely attractive) scale. PAT ratings across the eight raters were averaged for each participant in the pool.

Persons whose average ratings fell into either the approximate top (more attractive) or bottom (less attractive) quartiles were selected for this study. One question is whether the prescreening might have selected for characteristics that we were examining, such as smiling and adornment. To the extent that these variables determine perceived PAT, they were probably selected for, and are relevant to our analysis of the factors that may mediate the SWB–PAT link.

Procedure. After the Phase 1 initial screening, participants in Phase 2 were run in small groups of 2 to 6 people of the same sex. The participants were seated at a table and were told that this was a study about personality, happiness, and health. They were informed that they would...
be asked to complete a questionnaire concerning these variables and that they would be photographed. After participants had completed the questionnaire, they were led into another room, and a series of five photographs was taken of them.

The first photo was the "natural" picture, in which the participant was told to stand at a designated spot and look into the camera. If participants asked whether or not they should smile, they were told that it was their choice. In the second (adorned-neutral) and third (adorned-smiling) photos, facial expression was manipulated. In the adorned-neutral condition, participants were asked to form a neutral expression. In the adorned-smiling condition, participants were asked to give their best smile. If necessary, the experimenter assisted in this process by smiling and making a humorous comment.

For the fourth (unadorned-neutral) and fifth (unadorned-smiling) photographs, participants were first asked to remove jewelry and facial cosmetics. To complete this unadorned state, participants were asked to wear a white vinyl shower cap that covered their hair, and a white lab coat to cover clothing. Facial expressions for these two photographs were manipulated in the same manner as in the adorned condition. After the photograph session was complete, participants were provided with cosmetics to reapply if they chose to do so. Participants were then debriefed and thanked. Participants were not informed of the fact that we could more easily compare the effect sizes across studies. It should be kept in mind, however, that these correlations are likely to be larger than would occur in an unselected sample. However, we conducted correlational analyses so that we could more easily compare the effect sizes across studies. It should be kept in mind, however, that these correlations are likely to be larger than would occur in an unselected sample. The correlations between the PAT ratings within conditions with the SWB measures (Fordyce and SWLS) and with dating frequency can be found in Table 3. All of the correlations were

**Results**

Table 2 shows the means and standard deviations of PAT ratings for the more attractive and the less attractive groups. As can be seen from the standard deviations, there was no problem with restriction of range for the key variables. The standard deviation across all participants for PAT picture ratings was about 1.6. Thus, participants' PAT ratings varied over virtually the whole scale.

We conducted $2 \times 2$ (sex $\times$ PAT condition) analyses of variance (ANOVAs) on each of the eight dependent variables listed in Table 2. Attractiveness groups were based on the original screening attractiveness data. For neither the Fordyce scale, $F(1, 127) = .46$, nor the SWLS, $F(1, 127) = .42$, were there any significant effects. For number of dates, none of the effects was significant (due to the large within-group variance). For the PAT ratings of each of the photographs, the main effects for PAT condition were always highly significant ($ps < .001$, the lowest $F$ was 73.87). In one case (unadorned-neutral), men were seen as significantly more attractive, $F(1, 122) = 5.28, p < .05$, and for the natural condition there was a significant interaction between sex and PAT group, $F(1, 127) = 4.08, p < .05$. The conclusion is that the groups differed significantly in PAT in the intended way in all conditions, but these groups were not significantly different on the SWB scales.

We also conducted correlational analyses of the data. It should be noted that the ANOVAs above are the most appropriate type of analysis in this study because of the use of extreme groups. Nevertheless, we conducted correlational analyses so that we could more easily compare the effect sizes across studies. It should be kept in mind, however, that these correlations are likely to be larger than would occur in an unselected sample. The correlations between the PAT ratings within conditions with the SWB measures (Fordyce and SWLS) and with dating frequency can be found in Table 3. All of the correlations were

### Table 2

*Study 2: Means and Standard Deviations for Well-Being Measures, Dating Frequency, and Attractiveness Ratings of the Photograph Groups*

<table>
<thead>
<tr>
<th>Measure and condition</th>
<th>More attractive</th>
<th>Less attractive</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$M$ $SD$</td>
<td>$M$ $SD$</td>
</tr>
<tr>
<td><strong>Well-being measures</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fordyce</td>
<td>7.0 1.2</td>
<td>7.0 1.5</td>
</tr>
<tr>
<td>SWLS</td>
<td>24.6 4.8</td>
<td>23.5 6.3</td>
</tr>
<tr>
<td>Number of dates</td>
<td>9.7 10.0</td>
<td>17.8 14.2</td>
</tr>
<tr>
<td><strong>Attractiveness ratings</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Photograph group</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Natural</td>
<td>6.4 1.2</td>
<td>5.9 1.4</td>
</tr>
<tr>
<td>Adorned-neutral</td>
<td>6.1 1.0</td>
<td>5.8 1.1</td>
</tr>
<tr>
<td>Adorned-smiling</td>
<td>6.1 1.4</td>
<td>5.7 1.3</td>
</tr>
<tr>
<td>Unadorned-neutral</td>
<td>5.5 1.2</td>
<td>4.9 1.3</td>
</tr>
<tr>
<td>Unadorned-smiling</td>
<td>5.1 1.0</td>
<td>4.8 1.1</td>
</tr>
</tbody>
</table>

*Note.* SWLS = Satisfaction With Life Scale.
Table 3
Study 2: Correlations Between Attractiveness Ratings by Photograph Group and Subjective Well-Being Measures and Dating

<table>
<thead>
<tr>
<th>Photograph group</th>
<th>Fordyce</th>
<th>SWLS</th>
<th>Number of dates</th>
</tr>
</thead>
<tbody>
<tr>
<td>Natural</td>
<td>.24††</td>
<td>.16*</td>
<td>.18*</td>
</tr>
<tr>
<td>Adorned-neutral</td>
<td>.18*</td>
<td>.07</td>
<td>.11</td>
</tr>
<tr>
<td>Adorned-smiling</td>
<td>.20*</td>
<td>.10</td>
<td>.21*</td>
</tr>
<tr>
<td>Unadorned-neutral</td>
<td>.18*</td>
<td>.08</td>
<td>.13</td>
</tr>
<tr>
<td>Unadorned-smiling</td>
<td>.09</td>
<td>.04</td>
<td>.13</td>
</tr>
</tbody>
</table>

Note. SWLS = Satisfaction With Life Scale. *p < .05, two-tailed. ††p < .01, one-tailed.

low, and most were nonsignificant. The highest PAT-SWB correlations were in the natural group, the lowest in the unadorned-smiling group. When we computed the correlations separately by sex, we found that they were small for both sexes, and there were no significant differences between men and women. Indeed, the correlations tended to be similar, with the largest difference being .08.

The average correlation across both well-being measures and sex was .23 between SWB and PAT in the natural, fully adorned condition and was .13 in the neutral-expression-unadorned condition. This difference in correlations suggests that some part of the small relation between PAT and SWB is due to attractiveness enhancement. We partialed out PAT scores in the unadorned-smiling condition from the natural-condition PAT-SWB correlation. Most participants were smiling in the natural condition, and the partial correlation was thus designed to reflect the amount that adorned appearance correlated with well-being when controlling for natural beauty. The average partial correlation across sexes and well-being measures was .28. This correlation was larger than either of the simple zero-order correlations, suggesting that it is change in PAT from natural to enhanced conditions that most correlates with well-being.

Although the PAT-SWB relation was small, we can still inquire as to why this relation occurred. We explored the mediating effects of dating frequency by partialing dating frequency out of the PAT and well-being correlations in the natural condition. For the Fordyce scale, this partial correlation was .19, and for the SWLS it was .15. Thus, dating had little effect on how much PAT was related to well-being.

Table 4 displays the correlations of the PAT aggregated ratings in the different conditions with each other. These correlations are high and show the convergence among these aggregated ratings across the varied conditions. These correlations suggest that there is something consistent about attractiveness, in spite of differences in smiling and enhancements (clothing, hairstyle, etc.). It should be noted that these correlations were based on means across raters and therefore did not reflect the degree of agreement between individual raters.

As in Study 1, we can inquire as to the amount of agreement in the PAT ratings of individuals. Although correlational figures are difficult to compute because of the Latin square rating design, absolute levels of agreement for each target can be computed. There was an average range of 2.6 scale points for the picture ratings between the lowest and highest rating of each participant. Thus, four raters ranged across approximately 1/4 of the total scale in rating a participant. We can also examine to what degree this range is consistent for target participants across pictures: r = .14. Thus, once again there was little tendency for raters to consistently agree on the PAT of some participants and disagree on others.

Discussion

The results indicate that there was a very small relation between PAT and SWB. One limitation in the present study is the lack of computations of intrarater reliability. Because each rater did not rate all of the photographs, there was no simple way to compute intrarater agreement. Furthermore, because participants were preselected for PAT, intrarater agreement would be higher than would be expected in an unselected group. Therefore, in Study 3 we used a standard rating design in which all assistants rated all photographs, which allowed a more straightforward determination of intrarater reliability. Furthermore, by preselecting participants for lower and higher SWB rather than attractiveness, PAT agreement ratings became more interpretable.

Study 3

Several types of pictures were used in Study 3. As in Study 1, we videotaped the participants as well as photographed them. A full-body photograph was also included in Study 3. It is likely that PAT is more than facial beauty; it also includes bodily features, such as muscularity and thinness. Thus, a full-body photograph may be a better indicator of overall PAT than a simple facial photograph.

One concern with the second study was the manner in which we controlled appearance enhancement. It was possible that the use of shower caps to cover hair, and laboratory coats to cover clothing, could have altered normal appearance to the point of distortion. A change for Study 3 was to use a posterboard cutout method to conceal hair and clothes, thereby minimizing the distortion of appearance.

In summary, we wanted to determine if the results of Study 2 could be replicated with methodological alterations in the design. These changes included a more thorough rating of PAT using a videotape and full-body photograph, a better rating system, an alternative method of concealing beauty enhancements, and a sample that was preselected on the basis of happiness.

Table 4
Study 2: Correlations of Attractiveness Ratings by Photograph Group

<table>
<thead>
<tr>
<th>Photograph group</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Natural</td>
<td>—</td>
<td>—</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Adorned-neutral</td>
<td>.86</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Adorned-smiling</td>
<td>.87</td>
<td>.80</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Unadorned-neutral</td>
<td>.77</td>
<td>.80</td>
<td>.73</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Unadorned-smiling</td>
<td>.74</td>
<td>.70</td>
<td>.75</td>
<td>.77</td>
<td>—</td>
</tr>
</tbody>
</table>

Note. All correlations are significant at p < .001, one-tailed.
rather than PAT. Because most people report positive levels of SWB (Diener & Diener, 1994), we wanted to ensure adequate variability by selecting extreme groups on SWB.

Method

Participants. The participants were 155 (64 men, 91 women) introductory psychology students at the University of Illinois who participated in the study as part of a course requirement. They were selected from a larger study on the basis of their score on the Fordyce scale. Persons who scored a 5 or lower (low happiness; \( M = 4.6 \)) or 8 or higher (high happiness; \( M = 8.8 \)) on the major Fordyce item were chosen to participate. On the Fordyce scale, a score of 8 is anchored by Pretty happy (spirits high, feeling good), and a score of 6 is anchored by Slightly happy (just a bit above normal). Nine persons of the original 155 who were ethnic minorities were dropped before data analysis because of the same rating concerns as in Study 2. Thus, analyses were conducted with 146 participants (60 men, 86 women) who represented approximately the bottom 26% and top 45% of the Fordyce Happiness Scale. Because a large proportion (29%) of individuals scored a 7 on this scale, these cutoffs were as close as we could achieve to extreme quartiles.

Procedure. As the participants entered the laboratory, they were given instructions and told that they would be asked to complete a questionnaire, have their picture taken, and participate in a short interview, which would be videotaped. Participants were told to begin the questionnaire and to stop when they had completed the first section (which included the well-being measures). When participants had completed the first section, they were led into an adjoining room, where the photographs and video were taken.

In the photo room the participant was told to stand on a designated spot. The first photo, which was a frontal head and shoulders shot, was taken. The participant was then told to move back to a second spot, and a full-length photo was taken. Next, they were asked to look directly into the video camera and were prompted to say anything they wanted to show through while minimizing the amount of hair that could be seen. After all participants had this final photo taken, they were debriefed and thanked.

Photograph and video ratings. Each of the three sets of photographs was rated for PAT on a 0 (extremely unattractive) to 9 (extremely attractive) scale by eight different raters (four male, four female) for a total of 24 raters. Each assistant was randomly assigned one of the three sets to evaluate. For each photograph set, four of the raters did the ratings in one order (first photograph to last), whereas the other four rated the photographs in the opposite order (last to first). The videotaped interviews were rated for PAT by five different assistants using the same 0 to 9 scale. Cronbach alpha reliabilities, using raters as items, were as follows: natural head-and-shoulders condition,.90; natural (full-length) condition,.88; unadorned photograph,.82; video,.56. Even when corrected for the number of raters using the Spearman–Brown formula, agreement in the video condition was lower (.67) than in the other conditions.

Results

The means and standard deviations of PAT ratings for the high-happiness and low-happiness groups by sex are shown in Table 5. As can be seen, participant selection was successful in creating groups that differed in SWB. Analyses of variance revealed that on both the Fordyce scale, \( F (1,142) = 65.22, p < .001 \), and the

<table>
<thead>
<tr>
<th>Measure and condition</th>
<th>( M )</th>
<th>SD</th>
<th>( M )</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Well-being measures</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fordyce</td>
<td>8.0</td>
<td>1.0</td>
<td>7.9</td>
<td>0.9</td>
</tr>
<tr>
<td>SWLS</td>
<td>28.6</td>
<td>3.2</td>
<td>27.9</td>
<td>3.6</td>
</tr>
<tr>
<td>Number of dates (in 3 months)</td>
<td>11.8</td>
<td>12.0</td>
<td>16.0</td>
<td>11.7</td>
</tr>
<tr>
<td><strong>Attractiveness ratings</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Natural (head and shoulders)</td>
<td>3.8</td>
<td>0.9</td>
<td>4.6</td>
<td>0.9</td>
</tr>
<tr>
<td>Natural (full length)</td>
<td>4.3</td>
<td>0.8</td>
<td>4.6</td>
<td>1.0</td>
</tr>
<tr>
<td>Unadorned photo</td>
<td>4.0</td>
<td>0.6</td>
<td>4.1</td>
<td>0.9</td>
</tr>
<tr>
<td>Video</td>
<td>5.2</td>
<td>1.2</td>
<td>5.5</td>
<td>2.2</td>
</tr>
</tbody>
</table>

Note. SWB = subjective well-being; SWLS = Satisfaction With Life Scale.
ences between conditions on SWB. For the SWLS there was a
SWLS, \( F(1, 142) = 90.45, p < .001 \), there were significant differ-
ences in the SWLS scores between the high- and low-SWB
men were more extreme on the scale than were high- and low-
SWB women. It can be seen that there were virtually no differences
in SWB women. It can be seen that there were virtually no differences
in SWB, \( F(1, 140) = .70; \) nor did the well-being groups differ
in SWB, \( F(1, 140) = .70; \) nor did the well-being groups differ
between high- and low-SWB groups. Thus, it is not surprising that
the zero-order correlation did not decrease at all suggests that
natural beauty is not responsible for the PAT–SWB relation.

As in Study 2, we partialed the effects of natural PAT out of the
determined attractiveness and SWB correlation. The average value
was .13, once again higher than the zero-order correlation of .11.
The fact that this correlation did not decrease at all suggests that
natural beauty is not responsible for the PAT–SWB relation.

The average convergence across aggregated PAT ratings is indi-
cated by the correlations shown in Table 7. These correlations
were based on the average rating of the target by eight raters. One
can also examine the degree of agreement between raters within
individual pictures. The average agreement between raters was:
head and shoulders, \( r = .53; \) full-length, \( r = .46; \) unadorned, \( r =
.36; \) and video rating, \( r = .19. \) The average range for the eight raters
for particular pictures was: head and shoulders, 2.5 scale units;
full-length, 2.9 scale units; and unadorned, 3.1 scale units. Thus,
the variability of the ratings for a particular target spanned 1/4 to
1/3 of the entire scale. The range of ratings for a target correlated
very weakly across pictures: \( rs = .16, -.09, \) and \( -.10. \) Self-ratings
correlated modestly with the aggregated objective ratings: head
and shoulders, \( r = .26; \) full-length, \( r = .33 \); unadorned, \( r = .25; \) and
video rating, \( r = .25. \) It can be concluded that there is only moder-
ate agreement between individual perceivers about who is attrac-

Table 6
Study 3: Correlations Between Attractiveness Ratings by Type and
Subjective Well-Being Measures and Dating

<table>
<thead>
<tr>
<th>Photograph group</th>
<th>Fordyce</th>
<th>SWLS</th>
<th>Self-esteem</th>
<th>Number of dates</th>
</tr>
</thead>
<tbody>
<tr>
<td>Natural (head and shoulders)</td>
<td>.17†</td>
<td>.10</td>
<td>.14</td>
<td>.15†</td>
</tr>
<tr>
<td>Natural (full-length)</td>
<td>.08</td>
<td>.02</td>
<td>.06</td>
<td>.15†</td>
</tr>
<tr>
<td>Unadorned</td>
<td>-.01</td>
<td>.01</td>
<td>.00</td>
<td>.07</td>
</tr>
<tr>
<td>Video interview</td>
<td>.08</td>
<td>.07</td>
<td>.15†</td>
<td>.04</td>
</tr>
</tbody>
</table>

Note. SWLS = Satisfaction With Life Scale.
† \( p < .05 \), one-tailed.

SWLS, \( F(1, 142) = 90.45, p < .001 \), there were significant differ-
nences between conditions on SWB. For the SWLS there was a
Group X Sex interaction due to the fact that high- and low-SWB
men were more extreme on the scale than were high- and low-
SWB women. It can be seen that there were virtually no differences
in SWB, \( F(1, 140) = .70; \) nor did the well-being groups differ
in SWB, \( F(1, 140) = .70; \) nor did the well-being groups differ

Table 7
Study 3: Cross-Method Correlations Between
Attractiveness Ratings

<table>
<thead>
<tr>
<th>Photograph group</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Natural (head and shoulders)</td>
<td>—</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Natural (full-length)</td>
<td>.72</td>
<td>—</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Unadorned</td>
<td>.61</td>
<td>.53</td>
<td>—</td>
<td></td>
</tr>
<tr>
<td>Video interview</td>
<td>.63</td>
<td>.53</td>
<td>.46</td>
<td>—</td>
</tr>
</tbody>
</table>

Note. All correlations are significant at \( p < .001 \), one-tailed.
tive and that people are only modestly accurate at perceiving their own attractiveness. Furthermore, there do not seem to be consistently low- or high-agreement targets.

General Discussion

The results from three studies indicate that among college students there is only a small relation between PAT and SWB. These results are consistent with those of Noles et al. (1985) and Feingold (1992) on the relation of PAT to negative affectivity. Our results extend the earlier findings to other types of SWB; PAT seems to only have a marginal effect on happiness and life satisfaction. The fact that extreme groups were used in two studies should have strengthened the results, but the average correlation for both PAT measures in these two studies for the natural photographs was only .17, and for the unadorned photographs the mean correlation was .07. In Study 1, using an unselected sample, we found that the mean correlation between adored PAT and SWB was .13. Although our college participants may not yet have reaped the full benefits of their attractiveness in terms of status and income, this would appear to be offset by the fact that they were at a stage of life during which dating is extremely important. Thus, although our participants may not yet have been rewarded for their attractiveness through enhanced job success, their success in romantic endeavors should have made physical attractiveness an important resource at this life stage.

The highest correlations in Studies 2 and 3 were found in the group that included the natural appearance, with cosmetics, jewelry, clothing, and hairstyle showing. The effects were reduced when these factors were removed or covered. The pattern of correlations and partial correlations suggests that at least part of the small relation between SWB and PAT is due to the fact that happy people do more to enhance their appearance beyond their natural state. We also found evidence that self-perceptions of PAT are influenced not only by one's objective PAT but also by one's SWB. Thus, happy people appear not only to do more to enhance their appearance, but they also perceive themselves as more attractive than less happy individuals. This finding is consistent with Taylor and Brown's (1988) argument that happy individuals, when compared with unhappy people, tend to have positive self-estimates and biases.

In these studies we could not control deeper appearance enhancements, such as orthodontic work, medicine for acne, plastic surgery, or facial hair on men. Nevertheless, we can say that such enhancements did not create a large correlation between SWB and PAT. Such enhancements, however, may have led us to underestimate the potential impact of enhancements on PAT. Thus, if anything, the present studies give an overestimate of the influence of innate beauty on SWB.

How can we explain the small effects? Methodological explanations for the findings seem implausible. The PAT ratings were made in several situations and by a number of raters so that reliable PAT measures were created. Similarly, we used measures of SWB that have good validity and reliability (Sandvik et al., 1993). Furthermore, in Study 1 other resources as rated by informants (e.g., family support, social skills, romantic partner, and friends) each correlated much higher with the SWB scales.

One possible explanation for these findings is that people may adapt to the amount of a particular resource they have. The net effect of this adjustment or adaptation is that an individual does not recognize that there is an advantage to being above average. In support of this explanation, Brickman, Coates, and Janoff-Bulman (1978) found only small differences in happiness between both lottery winners and people with spinal cord injuries from corresponding control groups. They concluded that these findings were explained by adaptation theory. This explanation was supported by Silver (1982), who found that people were very unhappy immediately after a spinal cord injury but soon adapted back toward a positive baseline.

Another possibility is that SWB is less affected by external factors than has been previously thought. Costa and McCrae (1980) concluded that extraversion is a major determinant of positive affect and that neuroticism is an important source of negative affect. Similarly, Diener and Diener (1995) found that self-esteem is a very strong predictor of SWB in western countries. Thus, temperament, rather than resources such as PAT, may be the major contributor to SWB. Nevertheless, social resources such as family support and a romantic relationship contributed substantially to SWB in Study 1 (see Diener & Fujita, 1995), suggesting that some external variables may be important.

Yet another explanation is that PAT may not be a uniformly important resource, as some studies suggest. Eagly, Ashmore, Makhijani, and Longo (1991) reviewed studies related to stereotypes of attractive people. They concluded that attractiveness has little impact on inferences about concern for others and integrity. Thus, attractive people may be perceived as socially competent but appear not to be viewed as universally good. Eagly et al. also concluded that the more individuating information participants have about the target, the less they tend to use PAT information. In most everyday situations, PAT may be less important because other information eventually takes precedence among one's family and friends.

In Study 1 we found that PAT was not seen as very relevant to most participants' goals. However, for the people who saw PAT as more relevant to their goals, it was more highly correlated with SWB. This suggests the possibility that for a small percentage of people who see PAT as quite relevant to their goals, it might have a substantial impact on SWB.

Our data suggest another reason that attractiveness correlates so modestly with SWB: People disagree about how attractive others are. After all, we achieved high agreement between picture ratings only by aggregating across many raters. If agreement is substantial only for a few strikingly homely or attractive people, then most people will not, in their interactions with others, either uniformly profit or suffer because of their PAT. Because attractiveness has such a large subjective component, others differ substantially in how attractive they think we are, thus diminishing the effects of PAT. The range of individual PAT ratings of our "objective" raters ranged over 1/4 to 1/2 of the total scale on average for specific targets. Furthermore, the average intercorrelation between the ratings of video PAT and also between informants (the two most ecologically relevant methods of assessing perceived PAT) was quite modest.

In addition to the findings on the small relation between PAT and SWB, several other interesting results emerged. First, agreement about attractiveness was greatest when still photographs were rated. The more complex stimulus of video pictures
was seen as more attractive than still photos. The effects of acquaintance on perceived PAT should be explored more thoroughly in future research. In addition, more focused measures of satisfaction (e.g., with one's appearance, with one's romantic life) would also be useful because they may be more sensitive to differences in PAT than are global SWB measures.

In conclusion, there may be a host of factors that mute the effects of PAT on SWB. First, most people work toward goals for which other resources are seen as more relevant than attractiveness, and PAT is only slightly correlated with these other resources. Furthermore, in the long run, people may adjust their goals to the resources they possess. To the extent that a person is attractive, he or she may raise his or her goals in areas related to this resource, thus cancelling the effects of PAT. In addition, PAT may have costs as well as benefits. For example, attractive people may question the motives of others in interpersonal interactions. Another reason that PAT is not strongly related to SWB relates to the subjective nature of attractiveness judgments. Not only might friends and family use more individuating information when judging a person, but also their liking for the target may lead them to judge him or her as more attractive. Target persons themselves are likely to think they are more attractive if they have high SWB. Thus, people who are unattractive appear to be able to achieve approximately the same levels of SWB as those who are more attractive.

References


Received June 29, 1993

Revision received September 8, 1994

Accepted October 6, 1994