Journal of Personality and Social Psychology
1997, Vol. 73, No. 6, 1313–1329

0022-3514/97/$3.00

Affect Intensity: Separating Intensity and Frequency in Repeatedly Measured Affect

Ulrich Schimmack
Free University Berlin

Ed Diener
University of Illinois at Urbana-Champaign

E. Diener, R. J. Larsen, S. Levine, and R. A. Emmons (1985) distinguished between intensity and frequency as separable components in repeatedly measured affect. In this article, an improved way of differentiating intensity and frequency of affect is proposed that permits one to measure affect intensity separately for each emotion of interest. The results of 3 studies using this method provide further support for the affect intensity construct and demonstrate the superiority of the new approach. In addition, a new measure based on intensity ratings of hypothetical scenarios proved to be the best measure of affect intensity when it has to be assessed at 1 moment in time. Finally, results of 2 diary studies, one sampling emotional events and the other sampling random moments, confirmed the hypothesis that affect intensity is best conceptualized as a disposition to react strongly to emotion-eliciting events rather than to experience intense affect in the absence of goal-relevant situations.

If an individual experiences intense happiness, is he or she likely to experience intense sadness as well? As pointed out by several authors (Diener, Larsen, Levine, & Emmons, 1985; Lazarus, 1991), this question is ambiguous because it may refer either to the simultaneous occurrence of pleasant and unpleasant emotional states at a specific moment, or it may refer to the relations between an individual's general disposition to experience pleasant and unpleasant emotions intensely.[1] In other words, it is important to distinguish between a state and a trait perspective when discussing affect intensity.

Concerning states, ample evidence indicates that people who experience intense pleasant affects at a specific moment are unlikely to experience simultaneously intense unpleasant affects (Diener & Iran-Nejad, 1986; Green, Goldman, & Salovey, 1993; Larsen & Diener, 1992; Matthews, Jones, & Chamberlain, 1990; Reisenzein, 1994; Russell, 1980; Schimmack, 1996; Steyer, Schwenkmezger, Notz, & Eid, 1994). However, the present article is concerned with the trait level of analysis of affect intensity.

Diener et al. (1985) introduced the concept of *affect intensity* to describe stable individual differences in the typical intensity with which affects of different qualities are experienced. Most important, it was suggested that individuals who tend to experience intense pleasant affect also tend to experience intense unpleasant affect. This hypothesis was subsequently supported in several studies using a variety of research strategies (see Larsen & Diener, 1987, for a review). Furthermore, Diener, Colvin, Pavot, and Allman (1991) added theoretical substance to the affect intensity construct by proposing several mechanisms that could account for the positive correlation between pleasant and unpleasant affect. One major mechanism among others is the appraisal of event importance (Diener, Colvin et al., 1991; Frijda, Ortony, Sonnemans, & Clore, 1992; Lazarus, 1991; Ortony, Clore, & Collins, 1988; Sonnemans & Frijda, 1995; Zummuner & Fischer, 1995). Keeping other factors constant, important events elicit stronger emotions than less important events. Events can differ in importance as a result of two factors: An event might be more important (a) because it is relevant for an important goal (e.g., the Chicago Bulls winning the NBA championship is an important goal for a fan of the Bulls but not for a fan of the Seattle Sonics) or (b) because the event has a high goal relevance (e.g., a game in the season is less important than a game in the playoffs).[2] Event importance leads to more intense experiences of pleasure if the event is appraised as positive (e.g., the Bulls win), but it intensifies displeasure if the event is appraised as negative (e.g., the Bulls lose). Assuming that individuals habitually differ in the appraisal of event importance, individuals high on this trait on average experience more intense pleasure and displeasure, because the environment inevitably produces successes and failures (e.g., even the Bulls lose sometimes).

As a matter of fact, several philosophies and religions (e.g., Buddhism) share the idea that goal importance leads to strong emotional reactions. In the case of Buddhism, it is also assumed that the environment provides more frustrations than fulfillments of desires, and as a consequence teaches detachment from event outcomes as a way to minimize suffering. In contrast, Western

Ulrich Schimmack, Institute of Psychology, Free University Berlin, Berlin, Germany; Ed Diener, Department of Psychology, University of Illinois at Urbana-Champaign.

We are grateful to Rainer Reisenzein and Joachim Stöber for valuable suggestions during the preparation of this article.

Correspondence concerning this article should be addressed to Ulrich Schimmack, Institut für Psychologie, Freie Universität Berlin, Habelschwerdter Allee 45, 14195 Berlin, Germany. Electronic mail may be sent via the Internet to ulrichsc@zedat.fu-berlin.de.

[1] In the present article, the terms *pleasant* and *unpleasant* rather than the terms *positive* and *negative* are used to denote the hedonic quality of affects (cf. Larsen & Diener, 1992).

[2] In the present article, we use the concept of goals in a broad sense (cf. Lazarus, 1991). That is, it refers not only to desired outcomes of goal-directed behavior but also to any other desired state of the world, like being healthy, having high self-esteem, or the well-being of a loved one.

belief systems teach the "pursuit of happiness," because people are assumed to be able to achieve more successes than failures, and hence the Western approach stresses goal achievement as the road to happiness. "Living more fully, in this sense of living more hedonically, is perhaps the most obvious road to a happier life" (Parducci, 1995, p. 32). Inasmuch as people act in agreement with one or the other of these two opposing belief systems, they differ in their tendency to attach importance to their goals, and therefore are likely to differ in their typical intensity of emotions.

Despite the plausibility and empirical support for the affect intensity construct, a number of issues can be raised about the conceptualization and measurement of affect intensity in psychological research. One concern has been that affect intensity may only be a combination of the more familiar personality traits of neuroticism and extraversion (e.g., Williams, 1989). However, this objection is not convincing for two reasons. First, extraversion and neuroticism together predict only about 30% of the variance in the Affect Intensity Measure (AIM; Larsen & Diener, 1987), which possesses additional systematic variance that is not accounted for by the two personality dimensions (Cronbach's α is higher than .80; cf. Larsen & Diener, 1987). Second, there is an important aspect to the affect intensity construct that cannot be explained by neuroticism and extraversion, namely, the finding that people who experience intense pleasure also experience more intense displeasure. The general pattern of correlations between these variables is that extraversion is positively correlated only with the intensity of pleasant affect and neuroticism is positively correlated only with the intensity of unpleasant affect. However, the intensity of pleasant and unpleasant affect is also positively correlated (cf. Bachorowski & Braaten, 1994). If affect intensity were simply a combination of extraversion and neuroticism, the positive correlation between the two intensity scores would remain unexplained because extraversion and neuroticism are conceptually independent and sometimes even negatively correlated (cf. Williams, 1989).

As pointed out above, individual differences in goal importance can account for the positive correlation between the intensity of pleasant and unpleasant affect. Evidently, the affect intensity construct is more than a combination of neuroticism and extraversion, because the intensity of pleasant and unpleasant affect is consistently found to be positively correlated (Bachorowski & Braaten, 1994; Larsen & Diener, 1987).

However, Cooper and McConville (1993) argued that the positive correlation is a mere statistical artifact. In the Diener et al. (1985) study, participants' typical intensities of pleasant and unpleasant affect were derived from repeatedly measured affect ratings at the end of the day. To derive intensity scores, Diener et al. first averaged the pleasant and unpleasant affect items separately, to compute a pleasant and an unpleasant affect score for each day. Subsequently, they averaged only the pleasant affect scores of those days on which a participant experienced more pleasure than displeasure to compute a participant's typical intensity of pleasant affect. Similarly, only the unpleasant affect scores of those days on which a participant experienced more displeasure than pleasure were used to derive a participant's unpleasant affect intensity scores. Cooper and McConville (1993) demonstrated by means of computer simulations that this procedure sometimes yields positive correlations between the pleasant and unpleasant affect intensity scores, even if the ratings of pleasant and unpleasant affects were simulated to be independent. Therefore, a positive correlation between pleasant and unpleasant affect intensity scores, when computed according to Diener et al.'s (1985) approach, does not provide unequivocal support for the affect intensity construct. Furthermore, the authors suggested that averaging pleasant and unpleasant affect scores of all days provides for a simple and valid measure of affect intensity.

A major goal of the present article was to advance a new approach to the separation of frequency and intensity in repeatedly measured affect that avoids the problem of statistical dependence. In addition, the new approach has a number of other advantages. First, it allows the independent assessment of the intensity of discrete affects (e.g., gratitude, anger, love), not just the intensity of pleasant and unpleasant affect. Second, the new approach allows the assessment of the frequency of discrete affects. Finally, as a consequence of the independent assessment of frequency and intensity of single affects, the new approach permits researchers (a) to study the interrelations between the intensities of discrete affects, (b) to study the interrelations between the frequencies of discrete affects, and (c) to determine the relation between intensity and frequency of affect separately for each affect.

The basic idea of the new approach is that repeatedly made intensity ratings of affects can show psychologically meaningful patterns that are not distinguished by the computation of an average across all ratings (cf. Cooper & McConville, 1993). To illustrate this, it is useful to consider two characters of the movie *Grumpy Old Men.* Sophia Loren—the passionate woman—might be angry very rarely (e.g., 10 out of 100 times) but intensely (e.g., 5 on an intensity scale from 0 = *not at all* to 6 = *maximum intensity*). On the other hand, the grumpy old man, Walter Matthau, might be angry frequently (50 out of 100 times) with low intensity (1 = *very slightly* on the same intensity scale). Both characters end up with the same average of their anger ratings ($M = 0.5$), but the two characters experience anger differently: one experiences it intensely, the other frequently. The separate assessment of intensity and frequency of affect is necessary to reveal such differences between individuals.

One approach could be to ask participants to provide independent information about the frequency and intensity of their affective experiences (cf. Reisenzein, 1995, Study 3). More precisely, in each judgment of currently experienced affect, first the presence versus the absence of the affect is assessed. This is done using a dichotomous answer format (e.g., "Are you experiencing joy right now? Yes or No?"). The number of yes responses indicates the frequency of the affect. If the first question is answered affirmatively, the intensity of the affect is assessed in a second step (e.g., "If you answered yes on the first question, how intense is your feeling of joy?"). Answers to this question are made on an intensity scale (e.g., from *slightly intense* to *extremely intense*).

For each affect, the affect intensity score is computed as the average intensity rating, which of course is available only for the number of times in which the affect was experienced. Hence, the proposed intensity measure differs crucially from the overall average of affect ratings in that the trials on which participants indicated not experiencing the affect are excluded from the aver-

aging procedure. In this way, the average is freed from frequency information because each average is computed only when the affect was experienced. Of course, the new intensity score can be computed only if the affect of interest was experienced at least once. If a participant never answers "yes" to the first question about the presence of affect, there is simply no way to know the typical intensity of this affect. However, this limitation of the present approach is not serious. It only points to the necessity of measuring a sufficient number of experiences of an affect to determine its average intensity.

To have at one's disposal a more economical response format than the two separate questions concerning frequency and intensity, it is possible to integrate the two responses within a single response format in which the lowest scale value (e.g., 0) indicates the absence of an affect and the other scale values (e.g., 1 to 6) indicate its presence at various intensities. This response format, of course, is the common intensity-rating scale. Hence, seen from a different perspective, the proposal made here amounts to the decomposition of the overall mean affect (M)—including the zero ratings—across all repeated measures of affect into a frequency (F) and an intensity (I) component, according to the following formula: $M(\text{affect}) = F(\text{affect}) \cdot I(\text{affect})/N$, with N being the number of ratings, F being the number of nonzero ratings, and I being the intensity score, computed as the average across all nonzero ratings.[3]

According to this new approach, the intercorrelations between intensity scores of different affects are not biased in a positive direction because each score is based on a different set of ratings. Furthermore, information about the intensity and the frequency of each affect is gathered independently. The proposed decomposition of mean scores of repeatedly measured affect provides a frequency and an intensity score for each affect. This allows for three types of analyses: analyses of the (a) interrelations among intensity scores of distinct affects, (b) interrelations among the frequency scores of distinct affects, and (c) relations between frequency and intensity scores of distinct affects. As the main focus of the present article is on the validity of the affect intensity construct, the first type of analyses are of central importance. Nevertheless, ancillary analyses of the intercorrelations between the frequency components of affects are also reported to explore individual differences in the frequency of experiencing several emotions concurrently during a single emotional episode. Previous research has shown that the co-occurrence of emotions is the rule rather than the exception (cf. Reisenzein, 1995; Schimmack & Reisenzein, 1997; Schwartz & Weinberger, 1980), but individual differences in this regard have been largely ignored (but see Hansen & Hansen, 1988; Schimmack & Hartmann, 1997; Weinberger & Schwartz, 1982). Correlations between frequency and intensity scores of affects are also presented to demonstrate the conceptual independence between the disposition to experience emotions intensely and the disposition to experience emotions frequently.

Overview

In the present article, three studies are reported. In Study 1, ratings of hypothetical scenarios were analyzed to test the hypothesis that individuals differ consistently in their typical affect intensities. According to the affect intensity construct, the affect intensity scores of different affects should be positively correlated, and a strong first factor should emerge in a factor analysis of their intercorrelations. Especially, typical intensities of unpleasant affects are predicted to be positively correlated with typical intensities of unpleasant affects. Furthermore, we compared our new measure of affect intensity to the overall mean of the intensity ratings, which some researchers considered to measure affect intensity (Cooper & McConville, 1993; Nofzinger et al., 1994).

In Study 2, several questions were addressed simultaneously. First, the new approach was applied to ratings of emotional events in real life, gathered in an event-sampling study. Second, several questionnaires measuring affect intensity were included in this study to test their validity.[4] Questionnaires were the AIM (Larsen & Diener, 1987), the Emotion Intensity Scale (EIS; Bachorowski & Braaten, 1994), and the Intensity and Time Affect Survey (ITAS; Diener, Fujita, & Seidlitz, 1991). In addition, a scenario rating task (SRT), similar to the one used in Study 1, was used to explore the validity of ratings of hypothetical scenarios. Finally, Study 2 also tested the idea that individual differences in goal importance, neuroticism, and extraversion independently predict individual differences in affect intensity: Goal importance should account at least partly for the positive correlation between pleasant and unpleasant affect intensities, whereas extraversion should be related only to the intensity of pleasant affect and neuroticism only to the intensity of unpleasant affect.

Finally, in Study 3, data from a previous diary study (Pavot, Diener, & Fujita, 1990) were reanalyzed. In contrast to Study 2, this study sampled random moments. We propose that Study 2 exclusively sampled affects that were elicited by the appraisal of goal-relevant events, that is emotions. In contrast, Study 3 sampled emotions but also moods, that is affects that can occur without appraisals, for example, those that are due to a direct influence of the weather or health status (cf. Clore, 1994; see also introduction to Study 3 for a detailed discussion of the distinction between moods and emotions). As outlined previously, one component of cognitive appraisals, namely goal importance, is assumed to be a factor that produces the positive correlation between intensities of pleasant and unpleasant affect. As moods can be experienced in the absence of event appraisals, goal importance does not influence the intensity of moods as much as the intensity of emotions. Therefore, it is predicted that the correlation between intensities of pleasant and unpleasant affect is higher in Study 2, which exclusively sampled emotions, than in Study 3, which sampled moods and emotions. If so, this is additional support for the hypothesis that affect intensity is caused by cognitive appraisals such as goal and event importance. In short, it is proposed that emotions are more goal related than moods, and that the affect intensity construct applies primarily to emotions.

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[3] A similar procedure was used by Cohen et al. (1995) to differentiate presence–frequency and severity of physical symptoms, as well as by Kanner, Coyne, Schaefer, and Lazarus (1981) to differentiate number and severity of daily hassles.

[4] Of course, diary studies also rely on questionnaires. In the present article, we use the word *questionnaires* to describe instruments that assess trait affect intensity at one moment in time.

Study 1

Method

Participants

Sixty-one undergraduate psychology students (14 men, 47 women) at the Free University Berlin participated in the study for course credits.

Material

Thirty (25 negative and 5 positive) descriptions of emotion-eliciting situations were selected from a total of 460 scenarios (20 for each of 23 emotions) compiled by Reisenzein and Hofmann (1993). In addition, 16 (13 unpleasant and 3 pleasant) emotions were selected for the intensity ratings. The oversampling of negative events and unpleasant emotions was due to the fact that the primary purpose of this study was the investigation of repression (Schimmack & Hartmann, 1997). The scenarios were 30 to 60 words long. An example of a negative scenario is the following:

> Before I went to the university, I worked one year in a kindergarten in my hometown. I enjoyed the work there a lot. To study, I had to come to Berlin, where I knew nobody.

A 7-point rating scale was used for the emotion judgments. The response categories ranged from 0 = *not at all* to 6 = *extremely*. To increase the salience of the difference between a zero response (which implied the absence of affect) and the other categories (which implied the presence of affect), the zero category was visually separated from the remaining categories.

Procedure

After entering the laboratory, the participants were seated in front of a computer. All instructions were presented on the computer screen. Participants had to work on several tasks (Schimmack & Hartmann, 1997), of which only the SRT is relevant for the present study. In this task participants were asked to imagine themselves as the protagonists of the described events and then to rate how they would have reacted to it, using the emotion words and the rating scale displayed below the scenario descriptions.

The remainder of the instructions emphasized the difference between zero and nonzero ratings:

> Please consider first, whether you would experience the displayed emotion or not. Think about the intensity of the emotion only afterwards, if you have decided that you would experience the emotion. You can use the numbers from 0 to 6 for your response. A zero response means that you would not have experienced the emotion. Responses from 1 to 6 mean that you would have experienced the emotion, with one of the following intensities (1 = *very slightly*, 2 = *slightly*, 3 = *medium*, 4 = *strongly*, 5 = *very strongly*, 6 = *extremely strongly*).

After reading the instructions, participants pressed the return key to start the rating task. The scenarios were displayed in the upper half of the screen and appeared in a random order that was newly determined for each participant by the computer. After reading the description of the situation, participants pressed the return key, which made the sentence *In this situation I would have felt* and the rating scale appear on the screen below the scenario description. The 16 emotion words were displayed in random order, with a new random sequence for each scenario and for each participant. Participants indicated their likely emotional reaction to the scenario by pressing the appropriate number on the keypad. The computer recorded the responses as well as the time between the presentation of the emotion word and the responses, which allowed an analysis of the response times. If respondents made an error, they could repeat the entry using a correction key. After the ratings for all 16 emotions had been completed, the computer displayed the next scenario. The scenario rating task ended after all 30 scenarios had been rated for each of the 16 emotions.

Results

In all subsequent analyses a .05 level of significance was used. Correlations are considered to be low if their absolute level is below .30, moderate if their absolute level is in the range from .30 to .60, and high if their absolute level is above .60.

Manipulation Check

The response times were collected to check whether participants made their responses in the manner in which they were instructed to, namely, to first decide about the presence versus absence of an emotion, and only afterwards about its intensity, if the emotion was considered to be present. If the participants followed the instructions, zero ratings should be made faster than all other ratings, because in case of the absence of an emotion, no decisions about its intensity have to be made. To test this prediction, the average response times for each of the seven rating categories were entered into an analysis of variance, using rating category as a within-subject variable. This analysis revealed a significant effect, $F(6, 360) = 54.98$, $p < .01$. Follow-up t tests revealed that, as predicted, zero ratings were made significantly faster ($M = 1.76$, $SD = 0.70$) than ratings for each of the other categories. As for the remaining categories, responses became faster with increasing intensity ("1" $M = 3.59$, $SD = 1.47$; "2" $M = 3.33$, $SD = 1.32$; "3" $M = 3.29$, $SD = 1.25$; "4" $M = 3.14$, $SD = 1.18$; "5" $M = 2.87$, $SD = 1.05$; "6" $M = 2.51$, $SD = 0.89$). Hence, the instruction influenced the response process of the participants in the desired way. However, it is possible that they would respond in the same way without the specific instructions given in the present study. In addition, the pattern of response times suggests that people can quickly detect when an emotion is not elicited in a situation (e.g., joy in the example from the *Method* section). Responses are also fast, if an emotion is clearly and strongly elicited by an event. The slowest responses are made when it is not clear whether the emotion is elicited with mild intensity or not at all.

Descriptive Statistics

Table 1 shows the averages of the affect mean (M), the frequency score (F), and the intensity score (I) for each emotion, computed as described earlier. The selection of episodes had the expected effect on the overall mean and the frequency scores, in that, contrary to everyday life, pleasant emotions were less frequent than unpleasant emotions. The affect intensities of the different emotions varied in the range from 2.85 to 3.85, around the middle of the intensity scale (3.5).

Table 1 also shows the intercorrelations between these three variables. These correlations indicate that for all emotions, irrespective of their frequencies, the overall mean (M) was much more strongly determined by the frequency than by the intensity component ($r[M - F] > r[M - I]$ for all emotions). This

Table 1
Means, Frequencies (F), and Intensities (I) of Repeatedly Measured Affect and Correlations Between These Indices

Emotion	*M*	*F*	*I*	*r* (*M* − *F*)	*r* (*M* − *I*)	*r* (*F* − *I*)
Anxiety	2.14	19.02	3.42	.81*	.31*	−.28*
Anger	2.49	20.81	3.57	.87*	.49*	.01
Depression	2.26	20.46	3.29	.82*	.61*	.08
Disgust	0.92	8.39	3.75	.90*	−.42*	−.67*
Disappointment	2.45	19.15	3.85	.85*	.38*	−.15
Embarrassment	2.26	20.30	3.36	.85*	.44*	−.08
Gratitude	0.81	7.07	3.66	.90*	.10	−.46*
Guilt	1.23	12.92	2.85	.92*	.35*	.01
Hate	1.28	12.69	3.22	.91*	−.07	−.38*
Helplessness	2.87	23.79	3.61	.77*	.74*	.15
Hopelessness	1.14	10.62	3.24	.90*	.31*	−.02
Jealousy	1.11	9.85	3.51	.86*	.19	−.26*
Joy	1.01	8.66	3.70	.93*	−.25	−.55*
Loneliness	2.28	19.77	3.45	.85*	.53*	.02
Pride	1.05	9.87	3.41	.96*	−.20	−.44*
Shame	1.55	15.21	3.06	.89*	.39*	−.01

Note. $N = 61$. Means range from 0 to 6, frequencies range from 0 to 30, and intensities range from 1 to 6.
* $p < .05$.

result is important because it shows that the overall mean of affect is a poor measure of affect intensity. The correlations between the intensity and frequency scores are discussed below.

Affect Intensity

To test the basic assumption underlying Diener et al.'s (1985) affect intensity construct—that individuals differ consistently with regard to the intensity with which they experience diverse affects—the intercorrelations of the intensity scores of the 16 emotions were analyzed with principal-components factor analysis. An examination of the eigenvalues (Table 2) revealed the presence of a dominant first factor, explaining 50% of the variance.

Zwick and Velicer (1986) recommended parallel analysis (PA) as the method of choice for determining the number of factors to be retained. In PA, the eigenvalues of the principal components extracted from the data are compared with those extracted from random data with the same number of variables and participants. Only factors with a larger eigenvalue than the eigenvalue of the corresponding random factor are considered reliable. The eigenvalues of the random factors (cf. Lautenschlager, Lance, & Flaherty, 1989) are also displayed in Table 2. As can be seen, only the eigenvalue of the first factor in the data set exceeded the eigenvalue of the parallel random factor. Hence, PA suggests the existence of only a single reliable factor, which supports the concept of affect intensity. Next, we tested whether intensities of pleasant and unpleasant affect are positively correlated. For this purpose, the affect intensity scores of the 13 unpleasant and the 3 pleasant emotions were averaged to obtain separate unpleasant and pleasant affect intensity scores. The correlation between these scores was highly positive ($r = .71$, $p < .01$), lending further support to the concept of affect intensity. A global affect intensity scale was computed by averaging the 16 intensity scores. The scale had a high internal consistency (Cronbach's $\alpha = .92$) and all corrected item–total correlations were positive, ranging from .46 to .82.

Table 2
Eigenvalues and Explained Variance of the Intensity and the Frequency Factors in Hypothetical Situations (Study 1)

	Eigenvalue			% variance	
Factor	Random	Intensity	Frequency	Intensity	Frequency
1	1.99	7.93	10.79	50	67
2	1.77	1.70	1.65	11	10
3	1.59	1.22	0.63	8	4
4	1.45	0.87	0.60	6	4
5	1.32	0.70	0.60	4	2
6	1.20	0.68	0.42	4	2

Affect Frequency

The affect frequency variables were analyzed in the same way as the affect intensity variables (see Table 2). In this case, an even stronger first factor was obtained, explaining 67% of the variance, which was the only reliable factor suggested by PA. We also computed and intercorrelated separate frequency scores for pleasant and unpleasant affect. As had been the case for affect intensity, a high positive correlation was obtained ($r = .75$, $p < .01$).

Relation Between Intensity and Frequency

Table 1 shows the correlations between the intensity and frequency component for each emotion. Eleven of the 16 correlations were negative and some were statistically significant. Some of the moderate and high negative correlations (e.g., *disgust*) for single emotions in Table 1 must be interpreted with caution. These correlations were obtained for infrequent emotions,

whose intensity scores were based on few observations and are probably unreliable (cf. Larsen & Diener, 1987).

Averaged across emotions of the same valence, frequency and intensity of pleasant affects were moderately negatively correlated ($r = -.54$, $p < .01$), as was the corresponding correlation for unpleasant affect ($r = -.31$, $p < .05$). The correlations across valence were also moderately negative ($r = -.31$, $p < .05$, for the unpleasant intensity–pleasant frequency correlation and $r = -.59$, $p < .01$, for the complementary one).

Discussion

The first study yielded several important results.[5] First, mean affect scores were mostly determined by the frequency component and much less by the intensity component. Hence, means of repeatedly measured affect should not be interpreted as measures of affect intensity. Second, using the present approach to the separation of frequency and intensity components in repeatedly measured affect, only a single and strong first factor was obtained in a factor analysis of the 16 intensity scores. In addition, pleasant and unpleasant affect intensity scores were highly positively correlated. This finding supports the affect intensity construct, and at the same time demonstrates the suitability of the new method to study affect intensity. Further support for the construct stems from the finding that individual differences in the typical intensity of affect were even negatively related to individual differences in the frequency of affects. This finding shows that individual differences in the intensity of emotional experiences can be distinguished from individual differences in the frequency of emotional experiences. The interrelations of the frequencies of emotions—which are of secondary importance in the present context—are discussed in the General Discussion.

Study 2

The first study used an SRT to investigate affect intensity. In Study 2, the new approach to the separation of frequency and intensity of affect was applied to ratings of real-life events shortly after the event occurred. Furthermore, a number of questionnaire measures of affect intensity were included to examine their validity. In addition, measures of the importance of events and goals were included in this study to test the hypothesis that affect intensity is determined by the appraised importance of events and goals. Finally, extraversion and neuroticism were assessed to investigate the relation between the two personality dimensions and affect intensity more closely.

Method

Participants

One hundred fifty students in a semester long course on research in personality at the University of Illinois at Urbana-Champaign took part in this study as a course requirement. Eight students provided incomplete data for the following analyses and were excluded from the sample. The final sample consisted of 106 female and 36 male participants. Although the topic of affect intensity was also discussed in this course, this happened only after the data collection relevant to this study had been completed.

Materials and Procedure

Emotional-event sampling diary. The core of the study was a 3-week diary period during which the participants were instructed to report one pleasant and one unpleasant emotional event each day. An event-sampling rather than a random-moment sampling approach was taken because we wanted to exclusively sample emotions (i.e., goal-related affects). Instructions to report one pleasant and one unpleasant event per day were used because pleasant emotions are in general more frequent than unpleasant ones (cf. Diener et al., 1985) so that sampling events of unspecified valence would have led to a lower number of unpleasant emotions and in turn may have resulted in unreliable estimates of their typical intensities.

The respondents were instructed to report the first emotional event that occurred after a specified starting time that was systematically varied across the diary period. The starting time of the first day (after a 2-day practice period) was 5 p.m.; each following day, the time was set 1 hour later, and after 6 p.m. it was reset to 10 a.m. This way, participants reported emotional experiences that occurred during different types of daily activities. Furthermore, the sampling of events was independent of emotional intensity because the first event after the starting time could be a minor event (e.g., "getting a parking ticket") or a very important one (e.g., "getting admission into grad school"). The completed event forms were returned on the next day (on Monday for weekend days).

On the event form, participants first freely described the event and then indicated when it occurred, how long it lasted, where it happened, and what they were doing. Subsequently, the participants rated how important the event was (a) for their present concerns and (b) for their long-term goals. These ratings were made on a 7-point scale, ranging from 0 = *not at all important* to 6 = *extremely important.* Afterwards, respondents rated the presence and intensity of 20 emotions during the emotional episode on the same intensity scale that was used in Study 1.

At the end of the event form, participants also rated their global feeling states during the emotional event. Increasing evidence indicates that three global dimensions can be differentiated in the measurement of feeling states: pleasant–unpleasant, aroused–calm, and wakeful–tired (cf. Matthews et al., 1990; Schimmack, 1996; Steyer et al., 1994). According to the circumplex model of affect, two of these dimensions underlie affective experiences (Reisenzein, 1994; Russell, 1980; Schimmack, 1996), namely, the pleasure–displeasure and the arousal–calm dimension. According to the circumplex model, the intensity of pleasant emotions increases with increasing pleasure, whereas the intensity of unpleasant emotions increases with increasing displeasure. In addition, the intensity of most emotions increases with increasing arousal, as Reisenzein (1994) found only few affects—and no typical emotions—for which intensity increased with decreasing arousal (e.g., relaxed). It was expected that similar relations also hold for analyses on the trait level. That is, people experiencing emotions intensely are expected to experience more pleasure during pleasant events and more displeasure during unpleasant events. In addition, they are also expected to experience higher levels of arousal (see also Larsen & Diener, 1987). Wakefulness has been shown to be unrelated to affective experiences on a state level of analysis (Schimmack, 1996). Therefore, we also did not

[5] Rainer Reisenzein provided us with data of a study in which participants rated 36 scenarios first for the presence and then for the intensity of 12 emotions (see Reisenzein, 1995). A reanalysis of the data produced essentially the same results as obtained in Study 1. This finding shows that the more economical decomposition approach taken in Study 1 is equivalent to a two-step response process. In addition, the results of Study 1 were essentially replicated in another study by Ulrich Schimmack in which 80 participants rated the intensity of 10 emotions in 20 hypothetical scenarios.

expect this dimension to be related to trait affect intensity. To address this question empirically, participants rated the degree of pleasure, displeasure, arousal, calmness, wakefulness, and tiredness that they experienced during the events, using the same intensity scale as for the 20 emotions on the event form.

To obtain trait measures of importance for present concerns and for long-term goals, the importance ratings on the event form were averaged across all 42 events. As for the feeling dimensions, difference scores were computed, subtracting displeasure from pleasure, calmness from arousal, and tiredness from wakefulness ratings. Subsequently, the difference scores were averaged separately across the 21 positive and the 21 negative events.

AIM. The AIM was completed in a laboratory session during the diary period. It is the most widely used measure of affect intensity today (cf. Larsen & Diener, 1987). The questionnaire consists of 40 items. Responses are made on a 6-point frequency scale. For example, one item reads "When I feel happy, it is a strong type of exuberance."

EIS. Recently, Bachorowski and Braaten (1994) created an alternative measure of affect intensity, the EIS. The EIS is somewhat similar to the SRT described in Study 1, in that some of its items describe a little scenario (e.g., "Someone I am very attracted to asks me out for coffee."). However, the scenarios are in general shorter and more abstract than the ones used in the SRT. For each item, the respondents are asked to indicate the intensity of one emotion, which is most likely elicited by the described event (e.g., "thrilled/ecstatic" for the above example). Hence, another difference between the EIS and the SRT is that participants rate the intensity of a single emotion in the EIS, whereas they rate the intensity of several emotions in the SRT. Also different from the SRT, about half of the items of the EIS are reversed (i.e., low intensities are paired with high numbers) to control for possible response sets. Finally, the EIS also includes general statements such as "I am happy" in addition to the scenarios. These latter items correspond more closely to the type of intensity judgments required in the ITAS introduced below. The EIS was administered in the same session as the AIM.

ITAS. Diener, Fujita, et al. (1991) developed the ITAS as a measure of the intensity and the time, that is, frequency plus duration, of individuals' emotional experiences. Six types of emotions, good–other (e.g., love), pleasure (e.g., joy), bad-self (e.g., guilt), separation (e.g., sadness), threat (e.g., fear), and bad–other (e.g., anger), are measured by four specific emotions each (cf. Diener, Smith, & Fujita, 1995). A respondent's typical intensity of the six types of emotions is assessed by questions of the type "How intensely do you typically experience *X*, if you experience *X*" (where *X* is one of the 24 emotions). Answers are made on a 7-point intensity scale. The rationale of the ITAS is similar to the one used to derive intensity scores in Study 1. However, it is assumed that participants are able to compute approximate intensity averages in their minds. The ITAS was administered three times, once before, once while, and once after the diary period. In the subsequent analyses, the scores of the three measurement points are averaged.

SRT. After the diary study was completed, participants also completed an SRT similar to the one in Study 1. In Study 2, participants rated 20 scenarios (6 pleasant and 14 unpleasant) with regard to the presence and intensity of 10 emotions (4 pleasant and 6 unpleasant). All respondents rated the same scenarios. The 20 scenarios were selected according to results from previous scenario rating studies, so that most participants in the earlier studies rated each emotion to be present in at least four scenarios. The original German scenario descriptions were translated into English by Ulrich Schimmack and revised by Ed Diener.

The SRT has several advantages over the other intensity measures. First, it standardizes the situations that elicit the emotions. In the AIM or the ITAS, participants have to rely on different personal experiences in the past. Hence, memory-based intensity judgments might not only reflect differences in people's dispositions to experience intense affect but also differences in events that they encounter. Responses in the AIM or ITAS might also be more easily influenced by memory biases (Thomas & Diener, 1990). Even some items in the EIS are so general (e.g., "I feel happy") that participants can recall very different situations in which they felt the target emotion. Second, the SRT acknowledges that emotions tend to co-occur during emotional events and that people react with different emotions even to the same event, whereas the EIS assumes that people react with the same emotion. For example, in the EIS, participants have to indicate how intensely they experience anger when they are in a traffic jam on their way to work. A person experiencing only mild anger might at the same time feel intense anxiety about losing her job. Obtaining multiple affective judgments to each scenario renders it more likely that the affective intensity of the reaction to the event is captured, irrespective of the quality of the emotional reaction. Finally, the SRT might provide the best measure of affect intensity, for the simple psychometric reason that it comprises more items (200—20 scenarios × 10 emotions) than the other measures. This is also its major disadvantage. The SRT is the least economical measure of affect intensity and most of the responses, the zero responses, are discarded in the measurement of affect intensity. However, these responses allow the researcher to assess people's frequencies of emotions. The SRT was administered 2 weeks after the diary study was completed.

Extraversion and neuroticism. Extraversion and neuroticism were assessed with the Revised NEO Personality Inventory (NEO-PI–R; Costa & McCrae, 1992). The NEO-PI–R provides a reliable and broad assessment of these two personality dimensions in that it assesses each construct with eight items for each of six subscales. The questionnaire was administered 3 weeks before the daily diary period. Replicating earlier studies (e.g., Williams, 1989), extraversion and neuroticism were negatively correlated in the present sample ($r = -.31$, $p < .01$).

Goal importance. Four weeks after the diary study was completed, the participants rated the personal importance of 15 goals (e.g., good health, financial success, self-confidence) on a scale from 1 = *not at all important* to 10 = *extremely important.* Factor analysis combined with parallel analysis suggested the presence of two factors: achievement-related goals (e.g., good grades, athletic ability) and self-related goals (e.g., good health, self-esteem). However, importance ratings of the two goal domains were positively correlated. Furthermore, because we did not have specific hypotheses concerning the relations of different types of goals with affect intensity, we averaged goal-importance ratings across all 15 items. This scale had a good internal consistency (Cronbach's $\alpha = .85$).

Results

Descriptive Statistics

The intensity ratings of the 20 emotions for the 42 events were analyzed according to the procedure used in Study 1. Table 3 shows the frequency and intensity scores of the 20 emotions. The frequency scores indicate in how many of the 42 events an emotion was experienced. As can be seen, the emotions differ greatly in their frequencies: Contentment, joy, anxiety, and disappointment are very frequent emotions, whereas envy and jealousy are experienced rarely. These differences in the frequency of emotional experiences are also reflected in the number of participants who experienced an emotion at least once (last column), which is a necessary requirement to compute the intensity score. Some emotions were experienced by all participants (e.g., joy, anxiety), whereas other emotions were never experienced by a sizable portion of the sample (e.g., envy, jealousy).

Table 3
Average Frequency and Intensity Scores of 20 Emotions in 42 Real-Life Events

	Frequency		Intensity		
Emotion	*M*	*SD*	*M*	*SD*	*N*
Pleasant emotions					
Contentment	24.43	6.48	3.58	0.93	142
Joy	21.94	4.96	3.43	0.90	142
Affection	17.46	7.72	3.20	0.90	141
Relief	14.32	7.09	3.11	0.89	142
Pride	13.93	9.29	2.91	0.90	138
Gratitude	13.70	6.92	2.93	0.87	139
Euphoria	10.52	7.38	2.44	0.89	129
Unpleasant emotions					
Anxiety	24.31	7.83	2.93	0.78	142
Anger	21.94	4.96	2.62	0.84	142
Disappointment	18.84	4.91	3.24	0.86	142
Worry	18.65	8.60	2.93	0.87	142
Sadness	14.52	7.75	2.47	0.80	142
Hopelessness	13.70	6.92	2.47	0.87	136
Guilt	10.52	7.84	2.37	0.86	137
Contempt	9.19	6.56	2.30	0.95	135
Embarrassment	7.38	6.19	2.31	0.89	134
Loneliness	7.32	7.01	2.39	1.06	128
Hurt	6.41	4.89	2.45	0.95	136
Envy	5.27	6.03	2.30	0.94	114
Jealousy	2.11	2.59	2.46	1.37	86

Intensity of Real-Life Emotional Experiences

To include all participants, very rare emotions (envy, jealousy) were dropped from the following analyses. Every participant had experienced at least 13 of the remaining 18 emotions. A principal-components factor analysis with pairwise treatment of missing values was computed.

As shown in Table 4, the strong first factor obtained in Study 1 was replicated, explaining 48% of the variance. However, this time PA suggests the existence of a reliable second factor that explains another 9% of the variance. The factor loading pattern of the varimax-rotated factor solution was easily interpretable: All unpleasant emotions had the highest loading on the first factor and all pleasant emotions had the highest loading on the second factor. Nonetheless, when separate pleasant and unpleasant intensity scores were computed, they were highly correlated ($r = .69, p < .01$). Also replicating Study 1, the general affect intensity scale had a high internal consistency (Cronbach's $\alpha = .93$), and all emotions showed positive corrected item–total correlations, ranging from .46 to .78.

In sum, the results of Study 1, based on ratings of hypothetical scenarios, were replicated with ratings of real-life emotional experiences. However, one difference was found: For real life experiences, a reliable second factor was found that differentiated the intensity of pleasant and unpleasant emotions. Three explanations could account for this finding. First, the difference might be due to random sampling error. Second, the difference could be due to the use of a German sample in Study 1 and an American sample in Study 2. Third, the difference could be due to the fact that in Study 1 the types of events to be rated were controlled, whereas in Study 2 participants reported on emotional reactions to different events. Hence, the differences in intensity of pleasant and unpleasant emotions could be due to the different events being encountered rather than due to different dispositions to experience intense pleasure and displeasure.

Frequency of Emotions in Real-Life Events

As in Study 1, the frequency components of the 18 emotions were also analyzed (envy and jealousy were also dropped from this analysis). The principal-components factor analysis again showed a strong first factor, explaining 43% of the variance. Again, PA suggested a reliable second factor, explaining an additional 11% of the variance, and the two varimax-rotated factors could be interpreted as a pleasure and a displeasure factor. When separate pleasant and unpleasant frequency scores were computed, the two scales correlated highly with each other ($r = .60, p < .01$). The general frequency scale had a high internal consistency (Cronbach's $\alpha = .92$) and all corrected item–total correlations were positive, ranging from .39 to .79. In sum, the results replicate the finding of Study 1 that the frequency of pleasant and unpleasant emotions is positively correlated (cf. General Discussion).

Relations Between Frequency and Intensity Components for Real-Life Events

In Study 1, the intensity and frequency components were negatively correlated. This finding might have been due to the uneven sampling of positive and negative scenarios. In contrast, in Study 2 most (16 of the 18) correlations for single emotions were positive. The intensity and frequency scores of pleasant emotions ($r = .18, p < .05$) and of unpleasant emotions ($r = .17, p < .05$) were significantly correlated, but the correlations were small. Across valence, the correlations were not significant ($-.10 < rs < .10, ns$). The different findings in Study 1 and 2 could be due to the more equal sampling of pleasant and unpleasant situations in Study 2. More important, however, in both studies the correlations between frequency and intensity scores are considerably lower than the high intercorrelations among intensity scores of different affects. Hence, both studies clearly demonstrate that individual differences in the intensity differ from individual differences in the frequency of emotional experiences.

Table 4
Eigenvalues and Explained Variance of the Intensity and the Frequency Factors in Emotional Events (Study 2)

	Eigenvalue			% variance	
Factor	Random	Intensity	Frequency	Intensity	Frequency
1	1.67	8.56	7.78	48	43
2	1.52	1.59	2.05	9	11
3	1.40	1.14	1.27	6	7
4	1.30	0.89	0.92	5	5
5	1.21	0.83	0.87	5	5
6	1.13	0.70	0.74	4	4

Intensity of Emotions in the SRT

The analysis of the SRT data replicate the findings of Study 1 (Table 5). Most important, PA suggests a single first factor for the intensity components. Furthermore, the intensities of pleasant and unpleasant emotions were again highly correlated ($r = .66$, $p < .01$). The general intensity scale had a high internal consistency (Cronbach's $\alpha = .89$) and all corrected item–total correlations were positive, ranging from .48 to .75. The finding of a single factor for ratings of scenarios in the present sample indicates that the finding of two factors for ratings of real-life events is not due to the use of an American sample in Study 2. As a consequence, it is a viable hypothesis that the SRT measures people's dispositions to experience intense emotions, whereas the intensity scores based on daily events ratings are influenced by two factors: individuals' dispositions and their environments.

Frequency of Emotions in the SRT

For the emotion frequencies, factor analysis and parallel analysis indicate the presence of two factors. In the varimax-rotated two-factor solution, unpleasant emotions loaded on the first factor and pleasant ones on the second factor. Although the correlation between the pleasant and unpleasant frequency components was still significant, it was markedly lower than in the previous analyses ($r = .22$, $p < .01$). However, the general frequency scale was still internally consistent (Cronbach's $\alpha = .78$) and all corrected item–total correlations were positive, ranging from .37 to .53.

Relations Between Frequency and Intensity Components in the SRT

The correlations between the intensity and frequency components are similar to the results for ratings of real-life events. Seven of the 10 emotions showed a positive correlation between the two components. The correlation for frequency and intensity of unpleasant affect was moderate ($r = .33$, $p < .01$), whereas the correlation for pleasant affect was low and only marginally significant ($r = .15$, $p = .09$). The correlations across valence were close to zero and not significant ($rs = .00$ and $-.02$). This finding supports the idea that the negative correlations obtained in Study 1 were due to the biased sampling of positive and negative events. Furthermore, the finding underscores once more the conceptual independence between individual differences in the frequency and intensity of emotions.

Table 5
Eigenvalues and Explained Variance of the Intensity and the Frequency Factors in Hypothetical Situations (Study 2)

	Eigenvalue			% variance	
Factor	Random	Intensity	Frequency	Intensity	Frequency
1	1.46	5.13	3.60	51	36
2	1.31	1.06	2.19	11	22
3	1.20	0.99	0.82	10	8
4	1.10	0.63	0.77	6	7
5	1.02	0.56	0.54	6	5
6	0.94	0.42	0.52	4	5

Table 6
Intercorrelations Between Five Measures of Affect Intensity

Intensity measure	EES	SRT	ITAS	AIM
EES				
SRT	.63**			
ITAS	.20**	.19*		
AIM	.28**	.22**	.37**	
EIS	.25**	.28**	.43**	.55**

Note. EES = everyday event sample; SRT = scenario rating task; ITAS = Intensity and Time Affect Survey; AIM = Affect Intensity Measure; EIS = Emotion Intensity Scale.
* $p < .05$. ** $p < .01$.

Relations Between Affect Intensity Measures

To investigate the relations between the different measures of affect intensity in this study, the scores for the everyday event sampling (EES), the SRT, the AIM, the EIS, and the ITAS were correlated.

Table 6 shows that all correlations were significant. This finding shows that all measures were somewhat related, presumably because they all measured affect intensity to a certain degree. However, there was also a clear method effect. On the one hand, the EES and the SRT scores were highly correlated, and on the other hand the AIM, EIS, and ITAS scores were moderately intercorrelated. The correlations between these two types of measures were low.

If the intensity ratings of real-life experiences are used as the validation criterion for the questionnaire measures of affect intensity, the SRT clearly outperforms the other measures in the prediction of this criterion. The possibility that this finding is due to the shared method to derive EES and SRT scores or due to response artifacts is addressed in the following analyses.

Relations Between Affect Intensity Measures and Criterion Variables

Subsequently, the construct validity of the affect intensity measures is explored.

Feeling states. The first analyses test the relation between affect intensity scores derived from ratings of specific emotions with averaged ratings of global feeling states. These analyses serve two purposes. First, they help to rule out the possibility that the high positive correlation between pleasant and unpleasant intensity scores and between EES and SRT scores is a mere response artifact. Second, they test predictions of the circumplex model of affect on the relation between pleasure and arousal and emotion's intensity on a trait level.

The use of bipolar pleasure–displeasure scores controls for response sets such as an extremity bias because these response sets influence responses to the item of each pole in the same

direction, but then one item is subtracted from the other (see *Method* section), so that the bias in the two ratings is canceled out. Table 7 shows that response biases cannot account for the present findings because affect intensity shows the expected positive correlations with the bipolar pleasure–displeasure scores for positive events and the expected negative correlation for the negative events. This relation is strongest for the concurrently measured intensity scores of the EES but also holds for the SRT scores. In contrast, the other intensity measures fail to show a significant relation to the degree of displeasure in negative situations and the EIS also fails to show a significant correlation for the degree of pleasure during positive events. This finding demonstrates that the higher correspondence between the EES and the SRT scores is not an artifact, because both measures show the expected relation to the bipolar pleasure–displeasure scores that (a) are not computed according to the scoring procedure used for the EES and SRT and (b) control for response artifacts. The expected correlation between affect intensity and arousal was only supported for arousal during positive events and the concurrently measured EES scores. In addition, EES and SRT scores also showed a significant, but low, negative correlation between affect intensity and wakefulness during negative events. This finding was not predicted and should be interpreted with caution.

Importance of events. Diener, Colvin, et al. (1991) argued that people react with stronger emotions to more important events. Inasmuch as individuals differ in the general importance that they attach to their personal life events, individual differences in event importance can be a source of individual differences in affect intensity. This hypothesis is tested by means of correlations between the affect intensity ratings and the three importance measures, namely, the averaged importance ratings of the 42 daily events for present concerns and for long-term goals, and the goal-importance scale (cf. *Method* section).

Table 8 shows the correlations between the five affect intensity and the three importance measures. All correlations were positive and most were significant, lending support to the hypothesis that individual differences in the importance attached to goals and event outcomes are one determinant of individual differences in affect intensity. However, a clear method effect was also visible. Considering the size of the correlations, the EES shows the highest correlations, followed by the SRT, AIM, EIS, and ITAS in decreasing order. In sum, the results support the theory that individual differences in affect intensity are influenced by goal and event importance (Diener, Colvin, et al., 1991; Sonnemans & Frijda, 1995). With regard to the validity of the questionnaire measures of affect intensity, the SRT proved again to be superior to the other measures.

We also computed semi-partial correlations between intensity of pleasant and unpleasant affect, controlling for goal and event importance. The semi-partial correlations were used because the square of the semi-partial correlation can be interpreted as the amount of variance that is uniquely shared between the two intensity variables—that is, the variance that is not also shared by the third variable, the average of the three importance measures. Concerning the EES, the two intensity scores were highly correlated ($r = .69$, $r^2 = .48$). The semi-partial correlation was $r_{part} = .56$ ($r^2_{part} = .31$). Therefore, 17% of the shared variance (48% − 31%) can be accounted for by the importance measure. In other words, about one third of the shared variance between intensity of pleasant and unpleasant affect is explained by goal importance. For the SRT scores, about one fourth (13% of 44%) of the shared variance between pleasant and unpleasant intensity scores is explained by goal importance. These analyses show that goal importance is one factor underlying the affect intensity construct. However, the semi-partial correlations were still significant and substantial, indicating the operation of other factors (cf. General Discussion).

Table 7
Correlations Between Affect Intensity Measures and the Average Degree of Pleasure, Arousal, and Wakefulness During Positive (P) or Negative (N) Events

	Pleasure		Arousal		Wakefulness	
Intensity measure	P	N	P	N	P	N
EES	.51**	−.42**	.21*	.16	.08	−.18*
SRT	.38**	−.27**	.11	.14	.07	−.17*
ITAS	.22**	−.04	.11	.01	.02	.01
AIM	.21**	−.01	.12	.01	.05	−.10
EIS	.12	−.10	.11	.09	−.07	−.15

Note. EES = everyday event sample; SRT = scenario rating task; ITAS = Intensity and Time Affect Survey; AIM = Affect Intensity Measure; EIS = Emotion Intensity Scale.
* $p < .05$. ** $p < .01$.

Table 8
Correlations Between Affect Intensity Measures and Importance of Present Concerns (PC), Long-Term Goals (LG), and General Goals

Intensity measure	PC	LG	Goals
EES	.41**	.34**	.30**
SRT	.35**	.23**	.35**
ITAS	.19*	.11	.17*
AIM	.24**	.28**	.18*
EIS	.18*	.16	.31**

Note. EES = everyday event sample; SRT = scenario rating task; ITAS = Intensity and Time Affect Survey; AIM = Affect Intensity Measure; EIS = Emotion Intensity Scale.
* $p < .05$. ** $p < .01$.

Affect Intensity, Extraversion, and Neuroticism

As noted in the introduction, previous studies found the intensity of pleasant affect to be correlated mainly with extraversion, and the intensity of unpleasant affect to be correlated mainly with neuroticism (cf. Bachorowski & Braaten, 1994; Williams, 1989). To address the question of whether this pattern of results holds for the different intensity measures included in the present study, separate pleasant and unpleasant intensity scales were formed for each affect intensity measure. Subsequently, these scales were correlated with extraversion and neuroticism.

As shown in Table 9, the expected pattern was found for all intensity measures, with the exception of the EES intensity

Table 9
Correlations Between Neuroticism (N) and Extraversion (E) and the Pleasant and Unpleasant Affect Components of the Intensity Measures

	Pleasant affect		Unpleasant affect	
Intensity measure	N	E	N	E
EES	−.09	.32**	.18*	.22**
SRT	.01	.23**	.29**	.04
ITAS	−.18*	.46**	.52**	−.10
AIM	−.04	.61**	.52**	−.10
EIS	.04	.49**	.63**	−.06

Note. EES = everyday event sample; SRT = scenario rating task; ITAS = Intensity and Time Affect Survey; AIM = Affect Intensity Measure; EIS = Emotion Intensity Scale.
* $p < .05$. ** $p < .01$.

scores of unpleasant affect, which were more highly correlated with extraversion than with neuroticism. Nevertheless, the size of the correlations varied considerably: The correlations were low to moderate for the EES and SRT, but moderate to high for the other three measures. This finding demonstrates that the intensity of pleasant and unpleasant affect is related to neuroticism and extraversion; it does not imply that the affect intensity construct is superfluous. To demonstrate this, an additional analysis was carried out, in which extraversion, neuroticism, and importance (the average of the three importance measures shown in Table 8) were used as simultaneous predictors of the five affect intensity measures.

As shown in Table 10, different patterns were again obtained for the EES and SRT on the one hand and the AIM, EIS, and ITAS on the other hand. For the EES and the SRT, affect intensity was influenced primarily by importance. In contrast, the ITAS, AIM, and EIS showed significant relations to extraversion and neuroticism and only the AIM was also significantly related to importance.

Discussion

In Study 2, the major findings of Study 1 were replicated with scenario ratings and ratings of real-life emotional events: Individual differences in the typical intensity of emotional experiences were consistent across different types of affect, including pleasant and unpleasant ones. Only for real-life events did parallel analysis suggest the presence of two separable factors: a pleasant and an unpleasant affect intensity factor. These factors were, however, highly positively correlated. In addition, affect intensity scores were largely unrelated to affect frequency scores, underscoring the independence of the affect intensity construct from other individual differences in affect experience. In addition, EES and SRT intensity scores were positively correlated with pleasure–displeasure for positive events and negatively correlated for negative events. This finding supports the validity of the intensity measures and at the same time rules out a response set explanation because the computation of bipolar pleasure–displeasure scores eliminates the influence of an extremity response set.

Study 2 also provided evidence that individual differences in goal and event importance are one causal factor of affect intensity. Three different importance measures were positively correlated with affect intensity in the ratings of daily events and hypothetical scenarios. However, Study 2 also demonstrated that some factors influence only the intensity of subgroups of emotions, in that neuroticism was consistently found to be related only to the intensity of unpleasant affect, whereas extraversion was mainly related to the intensity of pleasant affect. Regression analyses showed that the different affect intensity measures were differently related to the three predictors, intensity, neuroticism, and extraversion. The intensity scores derived from event and scenario ratings were mainly related to the importance of goals and events, whereas the remaining three measures, AIM, EIS, and ITAS, were more consistently related to extraversion and neuroticism.

Understanding these differences between the affect intensity measures might help to illuminate the causal mechanisms leading to individual differences in affect intensity. A simple explanation could be that the EES and SRT differ from the other measures in that both of them use the new approach to the measurement of intensity. However, this methodological difference cannot account for the present finding, because both measures showed high correlations with the very differently scored bipolar pleasure–displeasure scores. This finding also rules out response set explanations. A viable explanation of the obtained findings is that the EES and the SRT rely less heavily on memories of emotional experiences than do the other intensity measures. Memory can influence the types of events on which the intensity judgment are based. Therefore, the ITAS, AIM, and EIS may measure the combined influence of people's dispositions and their environments on affect intensity. In contrast, the EES and SRT are purer measures of people's dispositions to experience intense affect because the events in which emotions are experienced are more controlled in these methods. If this explanation is correct, the influence of extraversion and neuroticism on affect intensity would be indirect, due to differences in the events typically encountered. For example, extraversion may lead to more intense pleasant affect because extraverts more often go to parties that elicit strong pleasant emotions. If the encountered events are controlled, as in the SRT, goal or event

Table 10
Results of the Regression of Affect Intensity Measures Onto Neuroticism, Extraversion, and Importance

Intensity measure	*R*	Neuroticism *β*	Extraversion *β*	Importance *β*
EES	.50	.06	.21*	.40**
SRT	.43	.14	.10	.36**
ITAS	.36	.29**	.23*	.10
AIM	.48	.25**	.39**	.17*
EIS	.59	.54**	.33**	.11

Note. EES = everyday event sample; SRT = scenario rating task; ITAS = Intensity and Time Affect Survey; AIM = Affect Intensity Measure; EIS = Emotion Intensity Scale.
* $p < .05$. ** $p < .01$.

importance becomes a more important factor in determining the intensity of people's emotional reactions.

Study 3

In Study 3, data from a random-moment sampling study (Pavot et al., 1990) were reanalyzed. The main purpose of Study 3 was to distinguish between two types of affect, namely, moods and emotions, and to test the hypothesis that the affect intensity construct mainly applies to emotions. The distinction between moods and emotions is gaining in acceptance among affect researchers (see Chapter 2 in Ekman & Davidson, 1994; see also Isen, 1984; Oatley & Duncan, 1992; Thayer, 1989). This distinction is not only made by scientists, but also by laypeople (Schimmack & Reisenzein, 1994; Schmidt-Atzert, 1996). Laypeople and scientists alike use criteria such as the duration, intensity, or the intentionality (i.e., object directedness—"I am disappointed *about something*") of affective states to distinguish between emotions and moods. Emotions are intentional and tend to be more intense and of shorter duration. In contrast, moods are not intentional (i.e., "I am relaxed, but I am not relaxed about something") and tend to be less intense and of longer duration. Intentionality allows the sharpest distinction between emotions and moods because it is a qualitative criterion. Quantitative properties like duration and intensity do not allow a sharp distinction because moods can be very brief (e.g., in a mood-induction experiment) and emotions can be prolonged (e.g., grief about the death of a loved one). In sum, we define emotions as feeling states that are directed at something and mood states as feeling states that are not directed at something (cf. Clore, 1994).

Analyses of common affect concepts (Schimmack & Reisenzein, 1994) showed that some concepts are typically used to describe emotions but not moods (e.g., love, hate) and others are typically used to describe moods but not emotions (e.g., relaxed, grouchy). However, some affect concepts can refer to emotions and moods (e.g., sad, happy). Hence, even though Studies 2 and 3 comprised partly overlapping affect concepts, it remains possible that Study 2 predominantly sampled emotions and Study 3 sampled emotions and moods.

We believe that our event sampling procedure in Study 2 nearly exclusively sampled emotions, because the participants were instructed to report about an event that elicited an affective reaction. These instructions render it very likely that the affective reactions were directed at something, namely, the reported event. In contrast, a random-moment sampling procedure allows for the sampling of emotions and moods. That is, at some moments the participants were caught by the beeper when they felt happy about nothing in particular and at other moments they felt happy about something, such as a good grade.

As demonstrated above, the intensity of emotions is influenced by the importance attached to event outcomes, which accounts partly for the positive correlation between pleasant and unpleasant affect intensity. However, moods do not imply that a particular goal is at stake. Just feeling a bit blue on a rainy day does not involve appraisal processes (cf. Clore, 1994) and, therefore, the intensity of moods is largely independent of goal importance. Thus, we hypothesized that the correlation between pleasant and unpleasant affect intensity would be lower in Study 3 because it also sampled moods, that is, affective states that are less influenced by goal importance.

Method

Participants

One hundred thirty-six students (85 women and 51 men) at the University of Illinois at Urbana-Champaign participated in this study as a course requirement. Thirty-two participants were excluded from the following analyses because of missing data.

Material and Procedure

Using a random-moment sampling paradigm, participants completed a diary page two times a day for 2 weeks, whenever they were signaled to do so by an alarm watch. The diary page included 16 items. For each item, participants rated the intensity on a 7-point scale, ranging from 0 (*not al all*) to 6 (*extremely much*).

Results

Preliminary Analyses

A comparison of the frequencies across the 16 affects revealed that some affects were experienced rarely (shyness, envy, romantic jealousy, embarrassment). The fact that these items characterize typical emotions, supports our reasoning that emotions are experienced rarely during random moments. Many participants indicated that they did not experience these affects at any of the 28 random moments, and thus it was not possible to determine their typical intensities. As a consequence, these affects were eliminated from the subsequent analyses. Note that envy, romantic jealousy, and embarrassment were infrequent emotions even in Study 2 where emotional events were sampled (Table 3). Arousal was not included in the first set of analyses so that it could be used to test the relation between affect intensity and arousal. Hence, 11 items remained for the following analyses (see Table 11).

Table 11
Means and Standard Deviations of Frequency, and Intensity Components of Affects in Randomly Sampled Moments (Study 3)

	Frequency		Intensity		
Affect	*M*	*SD*	*M*	*SD*	*N*
Pleasant affect					
Happy	25.52	3.66	3.12	0.72	104
Pleased	20.98	6.12	2.81	0.79	104
Excited	16.52	6.50	2.62	0.83	104
Joyful	15.42	8.59	2.50	0.78	100
Unpleasant affect					
Anxious	15.01	8.22	2.35	0.80	102
Worried	13.26	6.96	2.10	0.73	104
Unhappy	9.34	6.51	1.83	0.66	101
Depressed	7.75	6.77	1.66	0.52	97
Sad	7.22	6.61	1.69	0.64	100
Fearful	6.09	6.44	1.88	0.73	92
Angry	4.82	4.59	1.98	0.79	93

Note. Frequencies range from 0 to 28; intensities range from 1 to 6.

Descriptive Statistics

Table 11 shows the means and standard deviations of the frequency and intensity scores of the 11 affects. A comparison with the intensity scores for the same affects that were included in Study 2 revealed that participants experienced all affects less intensely during randomly sampled moments than during emotional events (e.g., sadness, $M = 1.69$ vs. $M = 2.58$; joy, $M = 2.50$ vs. $M = 3.60$, respectively). As moods tend to be less intense than emotions, this finding is consistent with the idea that Study 3 sampled more moods and less emotions than Study 2. The standard deviations of the intensity scores, however, differed only marginally between random and emotional moments (e.g., sadness, $SD = 0.64$ vs. $SD = 0.84$; joy, $SD = 0.78$ vs. $SD = 1.00$, respectively). Thus, differences in the outcomes for the analyses of emotional events and random moments cannot be attributed to a restricted variability in the latter data.

Affect Intensity

As in Study 2, a principal-components factor analysis with pairwise exclusion of missing values was carried out and the reliability of the eigenvalues was tested by means of PA. Similar to the results for real-life emotional events in Study 2, PA suggested the presence of two factors (see Table 12). Again, the varimax-rotated two factors were highly interpretable, in that all unpleasant affects loaded on the first factor and all pleasant ones loaded on the second factor. Separately computed pleasant and unpleasant affect intensity scores were significantly correlated ($r = .25$, $p < .05$). However, the correlation was markedly lower than the one obtained for emotional events ($r = .69$). This finding supports the idea that the affect intensity construct is best conceived of as individual differences in the strength of emotional reactions to goal-relevant events rather than as individual differences in moods that are present in the absence of emotion eliciting events.

Affect Frequency

The frequency scores were also factor analyzed. Similar to the results for real-life emotional events, PA suggested the presence of two factors (see Table 12), and the two varimax-rotated factors could be easily identified as a pleasant and an unpleasant affect factor.

Table 12
Eigenvalues and Explained Variance of the Intensity and the Frequency Factors in Random Moments (Study 3)

	Eigenvalue			% variance	
Factor	Random	Intensity	Frequency	Intensity	Frequency
1	1.50	4.07	4.72	37	43
2	1.35	2.65	2.64	24	24
3	1.23	1.23	0.88	11	8
4	1.13	0.69	0.67	6	6
5	1.05	0.52	0.52	5	5
6	0.97	0.45	0.39	4	4

In contrast to previous results, the frequency of pleasant and unpleasant affect was not significantly correlated ($r = .15$, $p = .12$). This finding suggests that affect frequency is also influenced by the distinction between moods and emotions. As for the intensity of affect, the frequency of affect seems to be more highly correlated for emotions than for moods.

Relation Between Intensity and Frequency of Moods

As in Study 2, most (9 of 11) of the correlations between the frequency and intensity components of the single affects were positive. The correlation between frequency and intensity of pleasant affect was significant ($r = .41$, $p < .01$), but the correlation for unpleasant affect was not ($r = .16$, $p = .12$). Both correlations across valence were significantly negative (both $rs < -.27$, $ps < .01$).

Relation Between Intensity and Arousal

The correlation between the general intensity score and average arousal was low but significant ($r = .23$, $p < .05$). This finding is consistent with earlier findings (Larsen & Diener, 1987) that individuals high in affect intensity also have higher average level of arousal.

Discussion

The major finding of Study 3 was that the positive correlation between intensity of pleasant and unpleasant affect dropped considerably when measures of affect were sampled at random moments. As pointed out above, a random-moment sampling procedure is likely to sample experiences of emotions and moods. Hence, the sampling of moods decreases the positive correlation between intensities of pleasant and unpleasant affect. We attribute this finding to the fact that moods can be elicited by other processes than event appraisals. In this way, the absence of a high positive correlation between intensities of pleasant and unpleasant affect in Study 3 corroborates our hypothesis that this positive correlation is at least partly driven by individual differences in goal importance.

Study 3 sampled moods and emotions, and a low positive correlation between intensities of pleasant and unpleasant affect was obtained. This finding poses the interesting question of what the correlation would be like if only pure mood states (i.e., affect not directed at something) were sampled. Future random-moment sampling studies should determine for each experience whether it was an emotion or a mood. This could be done by directly asking the participants (Oatley & Duncan, 1992), or by a question about whether the experience was directed at something.

General Discussion

The General Discussion focuses on three major implications of the present set of studies. First, the implications for Larsen and Diener's (1987) affect intensity construct are discussed. Second, different measures of affect intensity are compared. Third, the findings concerning the frequency component are discussed briefly. Finally, directions for future research are pointed out.

On the Validity of the Affect Intensity Construct

Diener et al. (1985) argued that frequency and intensity of affect experiences are conceptually separable components of average affect. With regard to the construct of affect intensity, it was proposed that people who experience one type of affect intensely also experience other affects intensely, and that this holds even for affects of opposite valence. In this article, a new way to differentiate these two components in repeatedly measured affect was proposed and tested. The application of the new method to four data sets (and two additional ones mentioned briefly in footnote 5) revealed strong support for the affect intensity construct. In three data sets, in which the intensity of emotions was studied, the intensity scores of distinct emotions formed a homogeneous scale. When separate intensity scores of pleasant and unpleasant emotions were computed, the intensity scores were positively correlated. In Study 3, the possibility of a response artifact explanation of affect intensity was ruled out because the new intensity measures correlated positively with the degree of pleasure–displeasure in positive events and negatively with the degree of pleasure–displeasure in negative events. Because pleasure–displeasure was measured in a bipolar fashion, response sets cannot account for this finding.

The relation between the intensity and frequency component varied across studies. The two components were negatively correlated in the first scenario rating study, but positively correlated in the SRT in Study 2 as well as in the ratings of emotional moments. However, irrespective of the direction, the correlations were low to moderate and lower than the high correlations among the intensity components of different affects. This pattern of results supports the hypothesis that the disposition to experience intense emotions is separable from the disposition to experience emotions frequently.

Replicating earlier findings, extraversion was found to be correlated mainly with the intensity of pleasant affect, and neuroticism with the intensity of unpleasant affect. In addition, extraversion and neuroticism were negatively correlated. As a consequence, extraversion and neuroticism cannot explain the positive correlation between the intensity of pleasant and unpleasant affect, and it is not tenable to simply define people high in affect intensity as neurotic extraverts.

Sonnemans and Frijda (1995) demonstrated that an individual experiences more intense emotions when an important event occurs. The present study extends this finding to the trait level. People who attach more importance to their goals and event outcomes typically experience more intense emotions. Hence, the positive correlation between intensity of pleasant and unpleasant affect is predicted by theory, and the theory received empirical support in Study 2.

Finally, it was found that the intensities of affects were more highly intercorrelated when they were measured during emotional events rather than during random moments, presumably sampling experiences of emotions and moods. This finding is additional support for the hypothesis that the positive correlation between pleasant and unpleasant affect intensity is partly due to individual differences in goal and event importance because emotions are usually elicited by goal-relevant events, whereas moods can be experienced in the absence of such events. Because sampling mood experiences reduces the positive correlation between intensities of pleasant and unpleasant affect, *emotion intensity* may be a more precise label for the construct than *affect intensity.*

The present study found intensities of various emotions to be highly correlated, and two out of three factor analyses suggested a single factor. However, this does not necessarily imply that affect intensity is a truly unidimensional construct. As for the AIM (cf. Weinfurt, Bryant, & Yarnold, 1994), more rigorous analyses with bigger samples might detect reliable homogeneous subgroups of affects. For example, the ratings of real-life events suggested that the experience of intense pleasant and unpleasant emotions shows some specificity. It is also possible that the intensity of some emotions is influenced by factors that are irrelevant for the intensity of other emotions. For example, people with a tendency to attribute failures to themselves might experience intense guilt but not anger, whereas people with a tendency to attribute failures to others might experience intense anger but not guilt. The affect intensity construct allows for such differences and does not claim strict unidimensionality. Rather it claims that some factors such as goal or event importance will lead to positive correlations between the intensity of different affects, and some support for this prediction was obtained in the present studies.

On the Validity of Affect Intensity Measures

Two classes of measures of affect intensity must be distinguished: (a) those measures that derive intensity scores from repeatedly measured affect in diary studies and (b) questionnaire measures. First, approaches to the measurement of affect intensity in diary studies are considered. The seminal approach taken by Diener et al. (1985) may have produced artificially high correlations between pleasant and unpleasant intensity scores. Furthermore, it did not allow the measurement of affect intensity and frequency for specific affects. As an alternative, Cooper and McConville (1993) proposed to use the average of all repeated measures as a measure of affect intensity. However, this approach neglects the important distinction between frequency and intensity of affect. Study 1 demonstrated that average affect is a poor measure of affect intensity because the average is mainly determined by the frequency and not by the intensity of the experienced affect. Hence, average affect cannot be used to measure affect intensity.

The present article introduced a new approach to the separation of frequency and intensity in repeatedly measured affect. This approach allows for distinguishing frequency and intensity of single affects, and the intensity scores of different emotions are computed independently of each other. The application of this new approach to real-life events showed significant relations with other affect intensity measures and theoretically derived criteria such as pleasure–displeasure in emotional situations and individual differences in goal and event importance. Thus, the new approach can be recommended for future studies of affect intensity in diary studies.

Often it is not feasible to carry out a diary study to measure affect intensity. In this situation, it is desirable to have a valid questionnaire measure of affect intensity at one's disposal. In Study 2, several affect intensity questionnaires were adminis-

tered to the same participants so that the validity of the measures could be compared. All measures showed positive and significant correlations with each other and with affect intensity during real emotional events. But the measures also showed different patterns of relations to other variables. The SRT was most strongly correlated with respondents' typical intensity of emotions in real-life events. It also showed consistent positive correlations with the importance of events and goals. The only other questionnaire that showed this theoretically predicted relation was the AIM. In contrast to the SRT, the AIM, EIS, and ITAS showed substantial correlations with neuroticism and extraversion.

One possible difference between the SRT and the other three questionnaires might be that the SRT standardizes the situations in which affect is experienced, whereas the other questionnaires require the participants to sample events from their memories. Hence, it is possible that the SRT measures the disposition to experience intense affect and the other measures assess the affect intensity during past experiences, which is influenced by dispositions and encountered situations. However, it is also possible that the latter measures are more susceptible to biases in the heuristics used to judge the typical intensity of emotional experiences (Thomas & Diener, 1990). At present, the use of an SRT appears to be the best validated way to measure affect intensity in a one-time assessment.

Are People Who Experience Frequent Happiness Also Frequently Sad?

With regard to the frequency component in repeatedly measured affect, the analyses showed a similar pattern to the intensity findings. In the SRT in Studies 1 and 2 and in the ratings of emotional events, the frequency of pleasant and unpleasant affect was significantly positively correlated, although the correlation was low for the SRT in Study 2. In the ratings of random moments, the correlation was low and nonsignificant. The finding that the positive correlation between frequency of pleasant and unpleasant affect in random moments was lower ($r = .15$) than the one in emotional events ($r = .55$) suggests that the distinction between moods and emotions is also important for research on the frequency of affect. Future research should explore this possibility.

Conclusions

Three main conclusions can be drawn from the present set of studies: The affect intensity construct (a) is valid, (b) cannot be reduced to extraversion and neuroticism, and (c) is related to the importance of goals and event outcomes. Furthermore, we demonstrated that our new approach to the separation of frequency and intensity in repeatedly measured affect produces meaningful and replicable results and overcomes weaknesses of earlier attempts. Hence, the new approach is recommended for future research.

Finally, we showed that ratings of hypothetical scenarios predict participants' typical intensity of affect in everyday life better than previous affect intensity questionnaires. As a consequence, ratings of hypothetical scenarios are recommended as the method of choice for the questionnaire-based assessment of affect intensity.

Future research on the affect intensity construct should move in two directions. First, a better theoretical understanding of the causes of affect intensity seems desirable. The present study showed that goal importance is an important variable. Previous research (Dritschel & Teasdale, 1991; Larsen, Billings, & Cutler, 1996; Larsen, Diener, & Cropanzano, 1987) already identified two other cognitive processes that increase affect intensity, namely, the cognitive styles of personalization and generalization. As the present study found event importance to predict the intensity of emotional experiences, it becomes an interesting question whether these cognitive styles influence affect intensity directly or whether this effect is mediated by the importance attached to the appraised event.

Another important cognitive factor influencing affect intensity could be individual differences in coping styles (Carver & Scheier, 1989), or secondary appraisal (Lazarus, 1991). That is, individual differences in the regulation of affect could influence affect intensity. For example, some people might try to distract themselves after an unpleasant emotion was elicited, whereas others might focus on the causes and consequences of the emotion. Affect regulation might influence the intensity of pleasant and unpleasant emotions differently: People might use cognitive dampening to reduce the intensity of unpleasant affect and cognitive amplifying to increase the intensity of pleasant affect. However, Diener, Colvin, et al. (1991) showed that use of either strategy often spreads involuntarily to other types of affect. Hence, individual differences in the regulation of affect might be another important cause of individual differences in the intensity of pleasant and unpleasant emotional experiences.

The present studies provided only modest support for the hypothesis that people high in affect intensity also tend to have a higher average level of arousal. Nevertheless, the relation between affect intensity and arousal deserves attention in future research. An important question is whether affect intensity leads to a heightened arousal level, or whether a habitually high arousal level is a disposition to react more emotionally. If a habitually higher level of arousal is a disposition to experience affect intensely, high affect intensity people should be more aroused even in nonemotional situations. Blascovich et al. (1992) found no relation between AIM scores and (cardiac) arousal in nonemotional situations. This suggests that the causal direction might go from goal importance to affect intensity and from there to arousal. This would be consistent with functional analyses of emotions (cf. Lazarus, 1991). Accordingly, arousal mobilizes an individual to take action if a relevant goal is at stake. However, it remains a question of future research whether the arousal level in neutral situations is a disposition to experience affect intensely because Blascovich et al. (1992) investigated only cardiac arousal.

Another line of worthwhile research is the relation between extraversion, neuroticism, and affect intensity. How do extraverts manage to increase only the intensity of pleasant affects without suffering from more intense unpleasant affects? One possibility could be that they tend to seek out more pleasantly arousing situations than introverts. And why do neurotics suffer from intense unpleasant affects without the benefit of intense pleasure? It could be that neurotic persons have a selective

tendency to attend more to negative information (e.g., MacLeod & Hagan, 1992), which in turn increases the intensity of unpleasant affect (cf. Diener, Colvin, et al., 1991).

More research on the consequences of affect intensity is also important. For example, Bachorowski and Owren (1995) showed that affect intensity influences the vocal expression of emotions, but Keltner and Ekman (1996) found affect intensity to be unrelated to the facial expression of emotions. More research is needed to explore the relation between individual differences in the intensity of emotional experiences and the expression of emotions.

Affect intensity might also influence preferences and choice behavior. For example, Rusting and Larsen (1995) found that people high in affect intensity prefer high activation states more than people low in affect intensity, whereas Sheldon (1994) found artists to experience affect more intensely than scientists. A study by Blankstein, Flett, Koledin, and Bortolotto (1989) found that people high in affect intensity have stronger affiliative motives.

Furthermore, affect intensity might be an important moderator variable in the relation between mood and cognition. Several studies (Basso, Schefft, & Hoffmann, 1994; Haddock, Zanna, & Esses, 1994) demonstrated that mood influences on cognition differed for people high or low in affect intensity as measured by the AIM. The present article suggests that the SRT might be a better way to measure affect intensity in this type of research.

Finally, this article has demonstrated that it is useful to distinguish between different types of affects, namely, moods and emotions. The affect intensity construct has been shown to explain people's intensity of emotional reactions but not the intensity of moods in the absence of goal-relevant events. Different findings with regard to the frequency component were also obtained. Therefore, future studies on trait affect might benefit not only from paying closer attention to the distinction between frequency and intensity of affect but also from the distinction between moods and emotions.

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Received July 18, 1996
Revision received December 9, 1996
Accepted December 11, 1996 ■