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determine the situations to which they respond. Some people actively seek challenge and look for new ways of doing things; other people are more comfortable with the familiar. But whether or not we seek challenge, there are times when challenge inevitably finds us. And when faced with potential misfortune, or even good fortune, we can all be more creative than most contemporary theories of emotion suggest. That, at least, is a hypothesis worth investigating.

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Changeability of mood

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Time sampling of emotional experience, several times a day over a period of several weeks (Brandstatter, 1977; Csikszentmihalyi, Larsen & Prescott, 1977; Diener, 1984), provides data which can be analyzed from many different perspectives. This paper focusses on the changeability of mood as a personality characteristic.

Everybody would agree that mood changes all the time and that people differ in the frequency of mood changes. This intuitive idea was supported by a number of studies (for example Larsen, 1987; Penner, Shiffman, Paty and Fritzsche, 1994). But how these individual differences in variability of mood relate to basic personality dimensions like those of Cattell's 16PF second order factors (Schneewind, Schroder & Cattell, 1986) is an open question, on which the present paper will focus.

Mood is a phenomenon of person-environment interaction. Emotions are conceived here as transitory deflections (ups and downs) from a person's characteristic level of mood. Thus, mood is not the stable background or the stage on which emotions come and go, but changes all the time in shorter and longer waves. The shorter waves of mood are called emotions, elicited by events (remembered, perceived, or anticipated) which are relevant to the person's motives in the specific situation. Emotions have cumulative after-effects which contribute to the longer waves of mood together with other influences like weather or illness. The after-effects of emotions are supposed to depend on their recency and intensity as well as on a person's disposition to 'ruminate'.

In the first place, variability of mood is affected by the variability of emotion arousing positive or negative events, as well as by the person's excitability or *Gefühlserregbarkeit* in the sense of Ludwig Klages (1910/1948, chap. 6), a German phenomeonological psychologist whose work is unfortunately little known to the present researchers on emotions. Any research on individual differences in the variability of mood has to try to separate the contribution of the environment to the mood change from changeability of mood as a personality characteristic. Otherwise we might take for a personal disposition that which in effect mirrors the high or low frequencies and intensities of change in emotion arousing events. Such a separation is, of course, always incomplete, because the person actively approaches positive events and avoids negative ones, thus being in part responsible for what happens to her or him.

In the present study, I differentiate between two kinds of transitions from one situation to another: transition to a similar situation, and transition to a clearly different situation. The first transition is the one from paid work in the morning (8:00 - 12:00) to paid work in the afternoon (12:00 - 16:00). The second transition is from paid work in the afternoon to recreation in the evening (16:00 - 20:00).

Hypotheses.

Hypothesis 1. The transition from afternoon work to evening leisure is connected with a higher rate of mood change (from positive to negative mood, and the other way around) than the transition from morning work to afternoon work, because the work-leisure transition goes into a widely different environment whith different meaning for different people.

Hypothesis 2. Personality, irrespective of the relative importance of specific personality dimensions, explains a larger portion of individual differences in mood change in transitions to

similar situations than in transitions to dissimilar situations. Since mood changes are a combined effect of variation in stimulation and individual dispositions, the latter will appear as more effective, if the environmental variance is reduced.

Hypothesis 3. The relevant literature tells nothing about which of the basic personality dimensions should be related to the changeability of mood. My prediction, however, is that emotionally unstable extraverts will have particularly high rates of mood change, because high arousability (emotional instability) implies stronger affective responses, and extraversion predisposes towards a higher sensitivity to external events.

Method

The time sampling diary (TSD). This technique (Brandstatter, 1977, 1983) asks the participants in the study about four times a day at randomly selected points of time to take notes about the momentary mood (rather negative or rather positive), to describe the mood by a few (self generated) adjectives, to give some subjective explanations (attributions) of the mood, and to indicate the place, the present activities, and who else is present, finally the degree of situational freedom. The diary entries are coded by the subjects themselves after each period of observation (usually every week) with respect to categories of places, activities, events or external circumstances and internal conditions (for example abilities, efforts) to which the momentary mood is attributed, of affected motives (activity/sentience, achievement, physical comfort, affiliation, power, and higher motives (need for cognition, order, beauty, good conscience, religion), and of time perspective (the emotionally relevant event is remembered, perceived, or expected). Usually, a preliminary coding list provided by the researcher is revised in cooperation with the subjects, in order to have it adjusted to the specific environment and roles of the study participants.

In addition to the TSD, some personality and attitude questionnaires are answered at the beginning and at the end of the observation period. The original (concrete) diary entries are not handed over to the researcher. This procedure, which is different from other approaches to experience sampling (cf. Hormuth, 1986) better warrants confidentiality as well as ideographic structuring of personal experience. With four weeks of self-observation about 110 records per person are collected.

Samples. For testing the hypotheses, I reanalyzed the data of those subjects of two TSD-studies who had a full-time employment. The participants of study 1 (Brandstatter & Wagner, 1994), who kept the diary during consecutive 28 days, were 34 middle class married couples, most of them with children, from three Upper Austrian cities, aged between 20 and 59 years. About half of the subjects had 9 years of schooling followed by an apprenticeship, the others had graduated from high school and some of them have earned a university degree. For the present analysis, only the husbands' data were used, because the majority of the wives were not full-time employed. Study 2 (Brandstatter & Gaubatz, 1994) comprises 17 men and 13 women who had just started a new job, 8 of them had 9 years of schooling and an apprenticeship, 7 had graduated from high school, and 15 had earned a university degree. The age varies between 20 and 4o years with a majority under 30. The diary was kept during the first ten days each in the first, second, third, and sixth month on the new job in their office.

Index of mood changes. In each of the three four-hour-periods of 28 days (8:00-12:00, 12:00-16:00, and 16:00-20:00) there was one randomly selected time for each person. Missing data were omissions and those occasions when the person did not report a work activity in the morning and in the afternoon, or when he/she did not report a genuine leisure activity in the evening. The observations of early morning (4:00-8:00) and late evening (20:00-24:00) were not included in the

present analysis. For each person a mood stability index was calculated (Cohen's kappa) for the transition 'work in the morning' to 'work in the afternoon' (k[M/A], and for the transition 'work in the afternoon' to 'leisure in the evening' (k[A/E]). A low kappa means high changeability of mood.

Results

Correlations between k(M/A) and k(A/E). The changeability of mood is to some degree indeed a stable personality characteristic, as among others Larsen (1987) and Penner et al. (1994) have shown. The correlation between the subjects' two mood stability indices is, with r(kM/A ,kA/E) = 0.37 and $p<0.01$, of moderate size and significant. The correlation would probably be higher if both transitions were from one kind of situation to a similar kind of situations.

Testing hypothesis 1. The pattern of results is as predicted ("The mood is more stable when the following situation is similar than when it is dissimilar"). However, the difference is statistically not significant (Table 1).

Table 1 Stability of mood (kappa) in transitions to similar and dissimilar situations

	Study 1	Study 2
	n = 32	n = 29
Situation similar: k(M/A)	0.34	0.29
Situation dissimilar: k(A/E)	0.29	0.24

Testing hypothesis 2. In order to test hypothesis 2 ("The stability of mood is more dependent on personality structure in transitions to similar situations than in transitions to dissimilar situations"), four types of subjects were identified according to the second order factor scores (median split) of emotional stability (QII) and extraversion (QV) (Schneewind et al. 1986). Separately for study 1 and study 2, a 4 x 2 multivariate analysis of variance (4 personality patterns as between-subject-factor and 2 categories of situation similarity as within-subject-factor) was performed, with a person's stability of mood (measured by kappa) as dependent variable.

Table 2 Stability of Mood (k) dependent on personality patterns

			Study 1	Study 2
	QII	QV	n=32	n=29
Situation similar: k(M/A)	+	+	0.23	0.23
	+	-	0.29	0.10
	-	+	0.36	0.55
	-	-	0.50	0.28
Situation dissimilar: k(A/E)	+	+	0.33	0.13
	+	-	0.32	0.21
	-	+	0.22	0.41
	-	-	0.27	0.21

Effect Size

Situation similar: k(M/A)	0.45	0.81
Situation dissimilar: k(A/E)	0.16	0.37

Note: trans = transition. Measure of effect size is the standard deviation of the average mood stability scores (k's) in the four personality patterns divided by the pooled standard deviation of k's within the personality patterns.

As predicted, the influence of personality structure (configurations of emotional stability and extraversion) on the stability of mood is stronger in transitions to similar situations (work in the morning to work in the afternoon) than in transitions to dissimilar situations (work in the afternoon to recreation in the evening). The interaction between personality patterns and situation similarity is significant ($p<0.05$). The effect size (influence of personality pattern on stability of mood) is remarkably high (0.45 in study 1 and 0.81 in study 2), if the situations are similar (Table 2).

Testing hypothesis 3. This hypothesis ("Emotionally unstable extraverts have a higher mood variation in transitions to similar situations than stable introverts") is definitely contradicted by the data (again Table 2). A 2x2x2-MANOVA (emotional stability by extraversion by situation similarity) with repeated measures in the last factor, separately performed for study 1 and study 2, shows that in study 1 the emotionally unstable introverts, in study 2 the emotionally unstable extraverts have the highest mood stability. Combining both studies, we find high stability of mood (in transitions to similar situations) connected with low emotional stability.

Discussion

Quite unexpectedly, emotionally unstable persons remain longer in their negative or positive mood than emotionally stable persons who respond more flexibly to the everyday occurrences. Emotionally stable persons seem to be more responsive to the continuously changing reward potential of the situation.Their thoughts and feelings focus on the presence, and not on the past or the future. Emotionally unstable persons, however, seem to depend more on endogenous causes and/or to ruminate more on past emotions or to anticipate the emotions of future situations. This could mean that emotionally stable persons (in the sense of the 16PF second order factor) can better rely on their feelings in dealing with the demands and opportunities of the daily life. Perhaps their emotions are in some sense more valid, give a better feed-back of how the continuously changing situations promote or hinder their strivings. A semantic fallacy (emotional stability !)may have caused the wrong predictions. Of course, such a post hoc explanation needs further tests with new data before one can generalize the congruent results of two studies and add some new features to the construct of emotional stability. The construct of state vs. action orientation (Kuhl, 1992) might be useful in this context.

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