state and/or trait anxiety was found to be associated with more preoccupation, taking less of an analytic attitude toward the situation, and performance denigration. Generally these results are in agreement with research with adults who are sensitizers or generally trait anxious (Fenz & Epstein, 1965; Houston, 1977; Pinto-García & Cook, 1977) and thereby lend construct validity to the measures of cognitive anxiety developed here. Somatic trait and state anxiety were found to be associated with preoccupation, which was contrary to expectations derived from research with adults on somatizers and repressors (Dahlstrom et al., 1972; Fenz & Epstein, 1965). Perhaps the cognitive behaviors manifested by children who exhibit somatic anxiety differ from the cognitive behaviors manifested by adults who manifest somatic anxiety. Further research concerning the cognitive behavior of adults who manifest somatic anxiety, as well as cognitive anxiety, seems warranted.

Reference Notes

References
Huguet, K. A. Worry and emotionality components of test anxiety in different sex and age groups of elementary school children. Psychological Reports, 1976, 39, 1327-1334.
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Emotional Responses to Other Persons in Everyday Life Situations
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Several times a day over a period of 4 weeks, 24 housewives recorded (a) characteristics of their momentary situation (place, activities, other persons present); (b) their mood states; and (c) their subjective explanations of those mood states. In addition to this time-sampling diary the subjects completed the 16PF test twice. The type of social situations and the frequency with which they occurred to the subjects were found to be significantly related to causal attributions of mood states, actualization, and satisfaction of motives proved to be dependent on characteristics of the person and the environment. The results are discussed in terms of interaction between person and social situation.

When we talk in a naïve way of emotions like joy, fear, and despair we know quite well what we mean, and we are convinced that others will understand us. But the psychological concept of emotion is rather elusive. As Strongman (1978) points out in a recent book, there is no agreement at all about which phenomena should be called emotions, let alone about how to explain emotions. So, without going into these conceptual and methodological controversies, I have to say first what my concept of emotion is.

I follow Lersch (1938/1970), who conceived of emotions as a person's primary, immediate evaluation of experience with respect to his or her motives. The quality of emotions depends on the kind of motive involved and on the time perspective, that is, on whether the person responds to present events with joy or distress, or hopes for or is afraid of imagined future events. Within Lersch's theory on the one side emotions are closely linked to cognitions, on the other side to motivation. Whereas emotions are evaluative responses to continuously changing experiences, mood relates to the basic tuning of the person, to a diffuse and global evaluation of the situation, an evaluation that integrates and preserves the emotional experiences of the past. Lersch's classification of emotions matches his classification of motives. In both he relies heavily on language, which in his view points to all the important facets of motivational and emotional experience. If we knew about a person's emotional response to a situation not more than that it was positive or negative, we could infer the specific quality of emotion (e.g., anger, anxiety, joy, excitement, love, pleasure with tasty food or sexual contact) if we were informed on which motive was affected.

Convinced of the central function of emotions in a person's life, I designed about 7 years ago a method by which it should be possible to get valid data on momentary mood states related to a representative sample of a person's situations, that is, the place, the kind of other persons present and the activities being performed at the moment, the causal attributions by the person of the mood states, and finally the motives involved. By referring to the momentary experiences, the method should rely less on memory and should be less affected by an individual's readiness to report emotional experiences of a given quality and intensity. Individual differences in memory and readiness to report may be responsible for the fact that Bradburn and Caplovitz (1965),
who asked their subjects to remember critical incidents of happiness and unhappiness for the last week, found the frequencies of positive mood states uncorrelated with those of negative states. The method should also allow for reliable estimates of the percentage of time spent in different categories of situations. Data analysis should be possible on the individual and collective levels (Brandstätter, 1977).

Up to now, seven time-sampling studies of emotional responses to everyday life situations have been performed, each comprising about 25 persons, the first with a class of students (Brandstätter, 1981), the second with faculty members (Ott & Brandstätter, Note 1), and the third with housewives (Brandstätter, Fünfg., & Barthel, Note 2). Another study was done by Schuler and Fünfg. (Note 3) with girls and boys in professional training within industry. Recently, data have been collected in a home for the elderly in Austria (Floss, 1982) and in two Italian military units in Northern Italy, one with German-speaking soldiers, the other with soldiers of Italian origin (Kirchler, in press).

Here I will report on some aspects of the study with 24 housewives, especially on their responses to social situations. What can be said about the influence of behavior settings (e.g., living room, shop) and activities (cooking, watching TV, etc.) on mood states, and about how interview data relate to diary measures is reported elsewhere (Brandstätter et al., Note 2). The social characteristics of the sample (age, number of children, income and professional status of husband, etc.) are presented there, too.

I did not start with specific hypotheses derived from an established or fashionable theory. Of course there were some very general preconceptions about the characteristics of the environment and the characteristics of the persons that were supposed to be related to emotional responses. These general assumptions are stated in terms of interaction between person and environment without being derived from a specific interactional theory, a general picture of which has recently been given by Lantermann (1980).

A person's situation results from his or her motives and skills on the one side, and the incentives and barriers (difficulties) presented by the environment on the other side. The goals a person strives for in a specific situation are jointly determined by his or her motivational dispositions and by the environmental incentives as well as by his or her perceptions of personal competence and environmental difficulties. These cognitions depend on cognitive structures acquired by prior experience. The outcome of goal-directed behavior (success or failure) is influenced mainly by objective characteristics of the person and the environment, that is, by skills and task difficulties. But the emotional evaluation of the outcome is mediated by outcome perception and attribution; objective success and failure is only one factor among others in this process.

In the time-sampling diary (TSD) method, the subjects provide information on the environment, activities performed, and on emotional states for the randomly selected moments of self-observation. The motives relevant to each of the concrete situations observed, as well as the attributions of satisfaction/dissatisfaction, are indicated by the subjects in retrospect by coding of their diary notes, especially of what they have written about their subjective explanations of mood states.

The subject's self-concept is assessed by Cattell's 16 Personality Factor Test (16 PF; Cattell, 1965), which tells us what kind of person he or she thinks he or she is, and what kind of situations he or she prefers. What is missing is an objective measure of a person's skills in pursuing his or her goals under specific environmental conditions. The intelligence score of the 16 PF is too general to be useful in predicting success or failure in specific situations, which are very often social in nature. In fact, many of the 16 PF items express opinions about a person's skills in coping with specific social situations. Of course, only what a person thinks his or her social skills would be, not what his or her abilities really are, is given by the 16 PF. Nevertheless, we may assume that these judgments have some validity. If the personality scales should prove useful in predicting emotional responses to social situations, in part this might be so because in some way they also measure social skills.

Nisbett and Wilson (1977) have raised serious doubts about introspective reports (see also Sabini & Silver, 1981). In general, people would not be aware of those environmental characteristics that influence their behavior, and even if their reports were correct this would result from plausible hypotheses about how people in general behave in such a situation, and not from introspection. But what these critics of introspection really show is that there are situations in which the subjects can not tell or will not admit to the experimenter what influenced their behavior and not that people's behaviors are unaffected by effective motives and incentives, cognitions, and emotions. There are many conspicuous changes in a person's environment, many events that are perceived and interpreted consciously and in a specific way that only the person can tell and will tell if properly asked. As to the validity of the TSD measures, we can expect that increased self-awareness (Duval & Wicklund, 1972) induced by this method improves the accuracy of self-reports (cf. Jackson & Pau, nonen, 1980, p. 525). The strict privacy of records also helps in securing their validity.

Even if the subjects give descriptions or explanations not really based on careful introspection but on preestablished hypotheses, these ought not to be commonly shared ones but can be quite characteristic for and effective in his or her personal way of interacting with his or her environment. Of course, since he or she cannot tell what is going on under the surface of consciousness, all introspective information is incomplete, some biased, and some completely wrong in its causal inferences. But how could conscious experience be delusive most of the time if it has developed biogenetically as an adaptive system (Lorenz, 1973)? Whatever weakness this approach may have, one can reasonably expect that it will provide us with some new insight not accessible by more conventional methods.

Method

Subjects

For the study we chose a district of the city of Augsburg, West Germany, that seemed to be rather homogeneous and typical with respect to the social class of its inhabitants. From the telephone directory we selected 150 addresses at random, as yet not knowing if the selected households met the criteria, that is, that it was one of a married woman not working outside of the home and whose husband had not yet retired. A letter explaining briefly the aims of the study having been sent to the 150 households, two interviewers visited in order to check whether or not the household belonged to the sample we wanted to study and, if so, to gain the housewives cooperation. There were about 40 households meeting the criteria, and 25 housewives finally participated in the study. The data of one woman had to be excluded from the analysis because they were incomplete.

Diary Format and Questionnaires

At a first meeting the housewives were thoroughly informed of the procedure they should follow: to make notes in a booklet on their everyday experience each day at times randomly selected by the experimenter. The time samples were different for each day and each person. There were seven questions to answer at each time: (a) "Is my mood at the moment cheerful, indifferent, or rather negative?" (b) "How can I describe my momentary mood state using one or two adjectives?" (c) "Why do I feel as I have indicated?" (d) "Where am I?" (e) "What am I doing?" (f) "Who else is present?" (g) "To what extent do I feel free to choose to stay in or leave my present activity?"

Before leaving the first meeting the subjects answered a German version of Cattell's 16 PF questionnaire (Schneeb., 1974). After a few days' experience with the diary the housewives met again with the experimenters and discussed their problems with the method. The following day they started with the diary, which had to be kept during the 30 days from January 17 to February 15, 1979. During that period they were interviewed by two of the experimenters, a female and a male student, who asked them the questions selected by Prox (1976). At the end of the diary the housewives met again with the experimenters and discussed their problems with the method. The following day they started with the diary, which had to be kept during the 30 days from January 17 to February 15, 1979. During that period they were interviewed by two of the experimenters, a female and a male student, who asked them the questions selected by Prox (1976). After 4 weeks they answered the 16 PF questionnaire a second time. They also completed a quality-of-life inventory (an adaptation from Campbell, Deser, & Davis, 1976) and a questionnaire on their attitudes toward the study.

Time Sampling

The schedule for the time sampling, printed on a sheet of paper given to the housewives, was programmed by a computer program by dividing the 24 hours of the day into six segments of 4 hours each and choosing randomly one point of time within each segment. In the booklet the page was provided of which the 180 scheduled observation times (6 per day over 30 days). The time samples were randomly different for each person. The subjects had to watch their schedules in a way that secured quality samples without interfering too much with the natural flow of their activities: Whenever it came into mind that time for diary recording might have come, the subjects had to take their notes immediately if the prescribed time point was no more than half an hour later. In case a scheduled time point had been forgotten, the subjects had been instructed to take their notes just for the moment they became aware of their omission. In situations where they knew it was time for taking notes but were for some reason not able to do so, they had to memorize their answers to the seven questions immediately in order to write them down as soon as possible. They were not allowed to recall their answers, and if notes had been taken at all they had not been explicitly memorized. Since there were also times for recording scheduled during the night, the subjects had to mark the next morning those that were within their hours of sleep. The number of records per day was 4, resulting in a total expected number of 120 per person for 30 days. The actual number varied between days and persons owing
to a variation in hours of sleeping and in frequencies of
omissions.

Coding the Diary Records

Since we wanted to be sure that the participants trusted
our promise that all data would be completely anonymous,
and for preserving the personal structuring of experience,
the diary notes had to be coded by the participants them-

selves. The list of categories, a preliminary form of which
had been developed in a preceding study, was revised in
cooperation with the subjects, who then were trained in
using the coding schema.

There were categories for the following aspects of the
complex situations: (a) time of note; (b) mood state (neg-
active, indifferent, positive); (c) time perspective (present
mood state attributed to a past, present, or future event);
(d) sources of satisfaction/disatisfaction; (e) relevant mo-
tives; (f) behavior setting (e.g., living room, shop); (g) ac-
tivities (e.g., cooking, watching TV); (h) other persons
present (husband, children, etc.); (i) perceived freedom;
(j) adjectives describing the mood state.

In coding the sources of satisfaction/disatisfaction or,
as we may also call them, the causal attributions (Item
d), the subjects, after looking at the specific record, had
to answer the questions for each observation time: Who
or what, respectively, was the source of my mood state of
that moment, or who or what made me feel happy/un-
happy? Subjects had a list of sources comprising various
classes of persons (self, husband, children, etc.) and objects
(work equipment, clothes, mass media, etc.) at hand. The
most important source had to be put in first place; sources
of minor importance could be added in second or third
place.

The list of motives given to the subjects consisted of
statements indicating the frustration or satisfaction of spe-
cific motives. For each page of their diary, corresponding
to one point of time, they had to mark at least one and
no more than three. Examples of those statements are as
follows:

I feel rather bad because (a) I did not perform well in
my work [achievement], (b) my environment was too
boring [sentiment], (c) I was so lonely [affiliation], etc.

I felt rather good because (a) I was successful in my
work [achievement], (b) there were new and exciting
experiences [sentiment], (c) I was with people I like [af-
iliation], etc.

The adjectives used for describing the quality of mood
and emotions were not coded but were literally transferred
from the diary.

Each participant was finally paid DM 300 (about $170,
U.S., at that time). On the average the housewives had
spent about 50 hours during 2 months for attending the
meetings, taking interviews, keeping their diary records,
and coding the data.

Results

Outline

In a first paragraph the results of three AN-
OVS (two-way, random model) are reported
with mood scores as dependent on (a) subjects
by kind of other persons present; (b) subjects
by kind of other persons that are made re-
ponsible for the mood (causal attributions of
mood to other persons); (c) subjects by affected
motive. Then for each motive an ANOVA (one-
way) is performed (a) with motive occurrence
(motive actualization) as dependent on kind of
other persons present and (b) with mood score
as dependent on kind of other persons present.
Finally the results of several multiple regression
analyses are reported, each with four 16 PF second-order factor scores as independent
variables. The dependent variables are successively (a) occurrence and mood scores
of other persons present, (b) occurrence and mood scores of causal attributions, and (c)
occurrence and mood scores of motives.

Measures of Emotional Response

The emotional responses to the continu-
ously varying situations were measured in
three different ways. For each point of time
of observation the subjects noted in writing
whether their present mood state was rather
negative, indifferent, or rather positive ("mood
score"). At the same time they described their
emotional experience by one, two, or some-
times three adjectives. These adjectives were
coded on the value dimension as negative, in-
different, or positive, providing a second mea-
sure, which was averaged if there was more
than one adjective ("adjective value"). During
the coding stage of the study, after the end of
the 4 weeks of self-observation, the subjects
gave a subjective explanation of each of their
noted mood scores by pointing to the goals
(motives) that were fulfilled or frustrated in
the situation. From this a third measure could
be derived ("goal satisfaction"). The correla-
tions (N = 2,692) of the three measures across
all observations are r = .77 (mood score, ad-
dective value), r = .90 (mood score, goal sat-
isfaction), and r = .77 (adjective value, goal satisfaction). The variable mood score differs
from the variable goal satisfaction mainly by
virtue of the fact that all indifferent scores of
the former variable had to be transformed into
positive or negative values of the latter one.
This explains the high correlation between the
two variables. Goal satisfaction has been used
as the dependent variable in the analyses, since
its split-half reliability is slightly higher than
that of the other two. Where the expression
mood state or mood score is used in the report,
it is meant as a synonym of goal satisfaction.

Mood as Dependent on Subjects and Kind of
Other Persons Present

The categories of "other persons present" are
ordered according to intimacy beginning with
"no other person present" and ending with
"strangers." "Family only" means that the
woman is together with the husband and at
least one of the children while no others are
present. The category "relatives/friends" does
not necessarily exclude children and hus-
band. Strangers may be present together with
relatives/friends, children, husband, or alone
with the subject.

Table 1 shows the relative frequencies and
the specific mood scores related to other per-
sons present.1 A 24 × 6 ANOVA with subjects
(A) and other persons present (B) as factors
(random model) gives significant results for
both main effects and the interaction effect,
F123, 106) = 3.84, p < .001; F(B, 106) = 4.63,
p < .001, and F(A × B, 106, 2709) = 1.84,
p < .07. The magnitudes of these effects (Hays,
1973, p. 550) are w2 = .04, w2 = .01, and
w2 = .06.

Mood as Dependent on Subjects and Causal
Attributions to Social Sources

In Table 2 only the first place attributions
have been considered. The self is made re-
ponsible for the mood state in 14% of the
recorded situations, followed by relatives/
friends, children, husband, and strangers.

Table 1

<table>
<thead>
<tr>
<th>Other persons present</th>
<th>Relative frequency</th>
<th>Average mood score</th>
</tr>
</thead>
<tbody>
<tr>
<td>No other person</td>
<td>.25</td>
<td>.25</td>
</tr>
<tr>
<td>Husband only</td>
<td>.21</td>
<td>.42</td>
</tr>
<tr>
<td>Children only</td>
<td>.14</td>
<td>.40</td>
</tr>
<tr>
<td>Family only</td>
<td>.15</td>
<td>.51</td>
</tr>
<tr>
<td>Relatives/friends</td>
<td>.14</td>
<td>.64</td>
</tr>
<tr>
<td>Strangers</td>
<td>.11</td>
<td>.38</td>
</tr>
</tbody>
</table>

Note. N = 2,808. The mood score is either −1 or +1.

When the subjects attribute the cause of their
mood state to themselves or to strangers, this
mood is quite often negative. Relatives/friends
and nonsocial sources are credited primarily
for positive emotional experience. The effects
of subjects (A), causal attributions (B), and in-
teraction (A × B) are significant: F(A, 23, 106) =
3.66, p < .001; F(B, 106) = 6.76, p < .001;
F(A × B, 106, 2709) = 2.30, p < .001. The mag-
nitudes of effects are w2 = .05, w2 = .02,
w2 = .06.

Mood as Dependent on Subjects and
Motive Sources

Table 3 presents the names, not the more
concrete statements given to the subjects,
the original list of motives with their relative
frequencies. The list of motives had been com-
piled from similar lists suggested by Murray
(1938) and Lersch (1938/1970). Since some
motives were scarcely mentioned (cf. Table 3),
the 19 motives were grouped intuitively ac-
cording to their phenomenological similarity
into six categories. We may assume that a
person will refer to a motive that is important
to him or her more often than to a motive that
is less important. The relative frequency of
distinguishes the following categories (of
other persons present, causal attributions,
motives, and positive emotional responses.
The results were essentially the same. Therefore only the raw score
calculations are reported.
person's motive coding can therefore be taken as a measure of motive importance or motive strength. As Table 3 displays, subjects indicate that the affiliation motive is quite often satisfied, whereas the needs for power and for physical comfort are more often frustrated. The results of ANOVA are for subjects (A), $F_{(2, 115)} = 2.27, p < .001$; for motives (B), $F_{(5, 115)} = 15.10, p < .001$; for interaction (A x B), $F_{(115, 2684)} = 3.50, p < .001$. The magnitude of effects are $\omega^2 = .02$, $\omega^2 = .09, \omega^2 = .12$.

### Relative Frequencies and Mood Scores of Motives as Dependent on Other Persons Present

The question arises as to which motives are activated and to what degree are the various motives satisfied in the presence of different kinds of people. Table 4 gives the answers. For each motive two one-way ANOVAs have been calculated, one for occurrence (motive actualization) and one for satisfaction. All entries, whether on first, second, or third place, have been considered.

The relative frequencies of motives, that is, the frequencies by which the subjects refer to a motive, whether positively or negatively, obviously depend on the kind of other persons present. This is especially true for "physical comfort" and "affiliation," the former being strongly tied to spending time with the husband alone, the latter being especially relevant in the presence of relatives/friends.

As to motive satisfaction, the presence of husband and family is conducive to the satisfaction of the need for physical comfort; the presence of relatives/friends fosters satisfaction of the affiliation motive; satisfaction of the sentiment motive is in some way connected with the presence of children, relatives/friends, and strangers. "Higher" motives are positively affected by the presence of husband and family.

### Social Emotions, Attribution, and Motivation Predicted by Personality Factors

Previously we have seen that subjects differ in their emotional responses to social situations. Now we will focus on these differences by taking into account personality measures. As Cattell (1965, p. 249) points out, the combined effect of personal and situational characteristics can be represented by multiple regression analysis. For each class of situations a separate multiple regression of average mood scores on personality variables can be computed. The regression equations may differ between situations, indicating that mood states result from an interaction between person and situation.

### Table 3

<table>
<thead>
<tr>
<th>Motives</th>
<th>Relative frequencies</th>
<th>Average mood score</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Original</td>
<td>Categorized</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note. $N = 2,828$. The mood score is either $-1$ or $+1$.

### Table 4

<table>
<thead>
<tr>
<th>Motive</th>
<th>Other persons present</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Physical comfort</td>
</tr>
<tr>
<td></td>
<td>Alone</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Physical comfort</td>
<td>.21</td>
</tr>
<tr>
<td>a</td>
<td>b</td>
</tr>
<tr>
<td>Power</td>
<td>.21</td>
</tr>
<tr>
<td>a</td>
<td>b</td>
</tr>
<tr>
<td>Affiliation</td>
<td>.13</td>
</tr>
<tr>
<td>a</td>
<td>b</td>
</tr>
<tr>
<td>Sentience</td>
<td>.25</td>
</tr>
<tr>
<td>a</td>
<td>b</td>
</tr>
<tr>
<td>Achievement</td>
<td>.19</td>
</tr>
<tr>
<td>a</td>
<td>b</td>
</tr>
<tr>
<td>&quot;Higher&quot; motives</td>
<td>.19</td>
</tr>
<tr>
<td>a</td>
<td>b</td>
</tr>
</tbody>
</table>

Note. $N = 2,785$. Mood scores: $-1, 0, +1$; a score of 0 is given if the motive is not mentioned at all in the moment of observation.

* $p < .05$. ** $p < .01$. 
order factors are derived.

Note. N = 24. The letters in parentheses indicate Cattell's first order personality factors (16 PF) from which the second order factors are derived.

* p < .10. ** p < .05.

Table 5
Relative Frequencies (a) and Emotional Responses (b) to Social Situations (Other Persons Present) as Predicted by 16 PF (Second Order, Standardized Partial Regression Coefficients)

<table>
<thead>
<tr>
<th>Predictors</th>
<th>Self</th>
<th>Husband only</th>
<th>Children only</th>
<th>Family only</th>
<th>Relatives/friends</th>
<th>Strangers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spontaneous (A, F, −G, −Qq)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>a</td>
<td>−.13</td>
<td>−.32*</td>
<td>−.03</td>
<td>−.13</td>
<td>.36*</td>
<td>.06</td>
</tr>
<tr>
<td>b</td>
<td>−.25</td>
<td>−.11</td>
<td>−.55**</td>
<td>−.40</td>
<td>−.40*</td>
<td>.05</td>
</tr>
<tr>
<td>Self-confident (C, H, −N, −O)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>a</td>
<td>−.04</td>
<td>−.22</td>
<td>.17</td>
<td>−.03</td>
<td>.17</td>
<td>−.07</td>
</tr>
<tr>
<td>b</td>
<td>.40*</td>
<td>.48**</td>
<td>.13</td>
<td>−.06</td>
<td>.41**</td>
<td>.30</td>
</tr>
<tr>
<td>Irritable (−I, L, Qq)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>a</td>
<td>−.07</td>
<td>.36*</td>
<td>.06</td>
<td>.08</td>
<td>.05</td>
<td>−.12</td>
</tr>
<tr>
<td>b</td>
<td>.04</td>
<td>−.22</td>
<td>.21</td>
<td>−.06</td>
<td>−.12</td>
<td>.02</td>
</tr>
<tr>
<td>Imaginative (M, Q, Qq)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>a</td>
<td>.38</td>
<td>.33*</td>
<td>−.27</td>
<td>.07</td>
<td>−.21</td>
<td>.01</td>
</tr>
<tr>
<td>b</td>
<td>.13</td>
<td>.07</td>
<td>.46**</td>
<td>.15</td>
<td>.17</td>
<td>−.19</td>
</tr>
<tr>
<td>Adjusted R²</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>a</td>
<td>.00</td>
<td>.32</td>
<td>.00</td>
<td>.00</td>
<td>.08</td>
<td>.00</td>
</tr>
<tr>
<td>b</td>
<td>.13</td>
<td>.28</td>
<td>.00</td>
<td>.14</td>
<td>.00</td>
<td>.00</td>
</tr>
</tbody>
</table>

Note. N = 24. The letters in parentheses indicate Cattell's first order personality factors (16 PF) from which the second order factors are derived.

* p < .10. ** p < .05.

Table 6
Relative Frequencies (a) and Emotional Responses (b) Related to Causal Attributions as Predicted by 16PF (Second Order, Standardized Partial Regression Coefficients)

<table>
<thead>
<tr>
<th>Predictors</th>
<th>Self</th>
<th>Husband only</th>
<th>Children only</th>
<th>Relatives/friends</th>
<th>Strangers</th>
<th>Non-social</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spontaneous (A, F, −G, −Qq)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>a</td>
<td>−.30</td>
<td>.04</td>
<td>.13</td>
<td>−.15</td>
<td>−.37*</td>
<td>.11</td>
</tr>
<tr>
<td>b</td>
<td>−.42*</td>
<td>.09</td>
<td>.01</td>
<td>−.44**</td>
<td>.09</td>
<td>−.17</td>
</tr>
<tr>
<td>Self-Confident (C, H, −N, −O)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>a</td>
<td>−.07</td>
<td>−.21</td>
<td>.09</td>
<td>−.05</td>
<td>.21</td>
<td>.25</td>
</tr>
<tr>
<td>b</td>
<td>.33</td>
<td>.10</td>
<td>−.13</td>
<td>.53**</td>
<td>.03</td>
<td>.52*</td>
</tr>
<tr>
<td>Irritable (−I, L, Qq)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>a</td>
<td>.10</td>
<td>.40**</td>
<td>−.05</td>
<td>−.01</td>
<td>.08</td>
<td>.32</td>
</tr>
<tr>
<td>b</td>
<td>.04</td>
<td>−.15</td>
<td>.21</td>
<td>−.08</td>
<td>.17</td>
<td>−.04</td>
</tr>
<tr>
<td>Imaginative (M, Q, Qq)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>a</td>
<td>.48**</td>
<td>.47**</td>
<td>−.26</td>
<td>−.03</td>
<td>.42*</td>
<td>−.09</td>
</tr>
<tr>
<td>b</td>
<td>.15</td>
<td>.30</td>
<td>.02</td>
<td>.19</td>
<td>−.41*</td>
<td>−.29</td>
</tr>
<tr>
<td>Adjusted R²</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>a</td>
<td>.21</td>
<td>.32</td>
<td>.00</td>
<td>.00</td>
<td>.17</td>
<td>.02</td>
</tr>
<tr>
<td>b</td>
<td>.06</td>
<td>.00</td>
<td>.00</td>
<td>.27</td>
<td>.04</td>
<td>.21</td>
</tr>
</tbody>
</table>

Note. N = 24. The letters in parentheses indicate Cattell's first order personality factors (16 PF) from which the second order factors are derived.

* p < .05. ** p < .01.

Table 7
Relative Frequencies (a) and Emotional Responses (b) Related to Motives as Predicted by 16 PF (Second Order, Standardized Partial Regression Coefficients)

<table>
<thead>
<tr>
<th>Predictors</th>
<th>Physical comfort</th>
<th>Power</th>
<th>Affiliation</th>
<th>Sentence</th>
<th>Achievement</th>
<th>“Higher” motives</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spontaneous (A, F, −G, −Qq)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>a</td>
<td>−.17</td>
<td>−.39*</td>
<td>−.13</td>
<td>.03</td>
<td>−.04</td>
<td>−.09</td>
</tr>
<tr>
<td>b</td>
<td>.10</td>
<td>−.44**</td>
<td>−.16</td>
<td>.10</td>
<td>−.20</td>
<td>−.59**</td>
</tr>
<tr>
<td>Self-confident (C, H, −N, −O)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>a</td>
<td>−.08</td>
<td>.43*</td>
<td>.38*</td>
<td>.08</td>
<td>−.38*</td>
<td>.21</td>
</tr>
<tr>
<td>b</td>
<td>.44*</td>
<td>.19</td>
<td>.12</td>
<td>.28</td>
<td>.32</td>
<td>.30</td>
</tr>
<tr>
<td>Irritable (−I, L, Qq)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>a</td>
<td>−.25</td>
<td>.51*</td>
<td>.40*</td>
<td>.27</td>
<td>.26</td>
<td>.27</td>
</tr>
<tr>
<td>b</td>
<td>.13</td>
<td>−.10</td>
<td>−.37*</td>
<td>.07</td>
<td>−.07</td>
<td>.12</td>
</tr>
<tr>
<td>Imaginative (M, Q, Qq)</td>
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<tr>
<td>a</td>
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<td>.13</td>
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<td>.32</td>
<td>−.19</td>
<td>.28</td>
</tr>
<tr>
<td>b</td>
<td>.02</td>
<td>.42**</td>
<td>−.09</td>
<td>.12</td>
<td>.42**</td>
<td>.05</td>
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<tr>
<td>Adjusted R²</td>
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<tr>
<td>a</td>
<td>.00</td>
<td>.40</td>
<td>.13</td>
<td>.01</td>
<td>.12</td>
<td>.02</td>
</tr>
<tr>
<td>b</td>
<td>.09</td>
<td>.24</td>
<td>.00</td>
<td>.00</td>
<td>.14</td>
<td>.21</td>
</tr>
</tbody>
</table>

Note. N = 24. The letters in parentheses indicate Cattell's first order personality factors (16 PF) from which the second order factors are derived.

* p < .05. ** p < .01.

Table 5 gives significant results for the motives “power,” “affiliation,” and “achievement.” The power motive is important to reserved, self-confident, and irritable women; the affiliation motive is prominent with self-confident and irritable women. Achievement motivation is negatively related to self-confidence. Self-confident women tend to feel physically comfortable; reserved and imaginative women enjoy satisfaction of their power motive; self-confident and imaginative women are proud of their achievements, and reserved women experience fulfillment of “higher” motives.

Discussion

The main question examined in this study is emotional responses to other persons in everyday life situations. We have looked at this in three different ways: by relating mood states (a) to objective characteristics of the social environment, that is, the social roles of other persons present; (b) to social attributes of mood states; (c) to motives activated in social situations. The discussion deals with these points one by one.

Mood Related to Other Persons Present

Social roles of other persons present may be conceived rather as causes than as effects, of mood states. In fact, many situations cannot be avoided, and when there is a choice, they are approached or avoided not so much according to the present mood state but according to the expected satisfaction, which, of course, is perceived as a possible amelioration or deterioration of the present state. As yet the TSD is not quite suitable as a basis for separating the different causal chains connecting mood with other persons present, or both with a third variable.2 Some of the TSD data (not presented here) reveal that perceived freedom of choice to enter or to leave the situation is closely related to mood (Brandtstätter et al., Note 2). In future studies it may be worthwhile to have the subjects give an account of mood states preceding recorded situations. We may then find pleasure of anticipation in freely chosen situations and apprehension in situations the subject could not avoid.

Being alone is significantly less rewarding than being with others, especially with relatives/friends (Table 1). This points to a problem resulting from the role of a housewife, who on the average spends a quarter of her time alone. What the women miss when they are alone is not only the company of others (affiliation) but also a stimulating and activating environment (sentence), as Table 5 shows.

It cannot reasonably be assumed that the person present would affect the mood state independently of other situational character-

2 Time series analyses have evidenced that mood states at time t predict mood states at time t + 1 to a certain degree, but do not predict the kind of other persons present at time t + 1 (Brandtstätter, Note 4).
Mood Related to Causal Attributions

The statistical interaction between subjects and other persons present seems to be less conspicuous than that between subjects and causal attributions. Subjects differ not only in relative frequencies of specific attributions but also in mood states related to these attributions. Some mention the husband mainly as a source of positive emotions and children as a source of rather negative ones, and others perceive it the other way around. Average mood states attributed to self, husband, children, relatives/friends, and strangers are scarcely correlated across subjects. Subjects differ less in their pattern of emotional states related to other persons present than they differ in their pattern of emotional states related to the kind of people they make responsible for their mood state. On the one hand, this could mean that attributions can be perceived as being in part a result of prior rewarding or frustrating experience with other persons and as being the cause of further rewarding or frustrating social interaction. On the other hand, one has to consider that the mere presence of other persons is neither a necessary nor a sufficient condition for causal attributions. Of course, there are significant positive correlations between presence/absence of other persons and causal attributions to these other persons, as a more detailed data analysis not presented here reveals. But we may reasonably assume that causal attributions of mood to other persons are tied to remembered, actually experienced, or anticipated specific social interactions with others, and not simply to their presence. Therefore we could get further insight into the attribution process by relating motives separately for each subject not only to kind of other persons present but also to causal attributions.

Mood Related to Motives

Motives differ greatly in the degree of satisfaction (Table 4). Relatively often the subjects feel powerless and physically uncomfortable. In the case of physical comfort we may generally assume that deprivation extends over a longer period of time than satisfaction, which soon leads to a state of indifference by satiation or adaptation. The frustration of the power motive could be specific to the motives affiliation and achievement, can be predicted from the 16 PF questionnaire in a plausible way. Which motives tend to be satisfied and which not depends not only on specific abilities but also on temperament traits to a certain degree, as temperament traits are shaped according to quality and intensity of motive satisfaction. A person has to be in some way restrained (A-, F-, G, Q1, i.e., reserved, sober, conscientious, and controlled), in order to get satisfaction from striving for “higher” goals, that is, order, understanding, aesthetic, ethical, or religious values. On the other side, rewarding experiences reinforce those behavior styles that were conducive to this kind of satisfaction.

Qualities of Emotions

It may appear questionable to look at emotional responses only as positive-negative, neglecting their multidimensionality (Traxel & Heide, 1961; Wundt, 1910) or their discrete variety (Izard & Buechler, 1980). Indeed, we would give away too much valuable information from the diary records if we did not try to differentiate further. By relating motives to mood states we did just that. If a woman tells us “I am in a rather negative mood state because I expect (time perspective: future) the others will not respect me as I want,” we would guess that the emotion is less likely to be sadness, anger, disgust, contempt, or guilt than fear or shame/shyness. The adjectives by which the subjects described their mood states give some further information on the complex qualities of emotions. In a total sample of 2,852 recorded situations almost 600 different adjectives were used. Smallest space analyses are underway in order to arrive at a comprehensive descriptive system of emotions based on actual word usage in randomly sampled life situations. Existing adjective checklists (Ekman, 1957; Heckheljen & Mertesdorff, 1973; Janke & Debus, 1978; Kristof, 1964; Nowlis, 1970) are based either on semantic similarity judgments or on judgments of experimentally provoked mood states. However, comparing the psychological meaning of the personality factors with that of motivational factors, one would intuitively expect that there are correlations between the two domains. So it is not surprising that the strength of the power motive, and to a lesser degree the strength of the motives affiliation and achievement, can be predicted from the 16 PF questionnaire in a plausible way. Which motives tend to be satisfied and which not depends not only on specific abilities but also on temperament traits to a certain degree, as temperament traits are shaped according to quality and intensity of motive satisfaction. A person has to be in some way restrained (A-, F-, G, Q1, i.e., reserved, sober, conscientious, and controlled), in order to get satisfaction from striving for “higher” goals, that is, order, understanding, aesthetic, ethical, or religious values. On the other side, rewarding experiences reinforce those behavior styles that were conducive to this kind of satisfaction.

Interpretations of Variance Explained

Calculation of proportions of variance explained by subjects, situations, and interactions may be questioned for several reasons. First, those percentages are heavily dependent on the categorizing of situations; using many narrowly defined categories would result in a higher percentage of explained variance than using only a few broadly defined categories comprised of rather heterogeneous situations. Second, the proportion of variance explained is drastically increased if the analysis is based on a person’s average mood score for each type of situation. Taking an odd–even partition of a person’s observations within each category of social situations (i.e., other persons present), and calculating for each half sample of observation a person’s average mood score leads to 10% variance explained by social situations and 22% explained by subjects. If the observations had been extended over 2 months instead of 1 in order to arrive at more reliable odd–even scores for each person and situational category, the error variance would have been still lower, leading to higher percentages of explained variance. Obviously, predictability largely depends on the level of aggregation (cf. Epstein, 1980). In addition, variance of emotional responses to specific situations during a prior time period may be useful in predicting emotional responses to these situations at a later time period. Therefore, combining 16 PF measures with information on past emotional responses may also increase the predictability.

Interaction Between Personality and Social Environment

Personality measures proved to be differential predictors for the subject’s emotional responses to specific social situations. Most studies on the interaction between person and environment dealt with a person’s perception and evaluation of verbally described situations or with retrospective reports on previously experienced situations (cf. Argyle et al., 1981). The TSD tried to overcome these restrictions and to go beyond a mere demonstration of a Person × Environment interaction by explaining which personality characteristics are relevant for what kind of social situations. Unfortunately, by making data collection time...
Personality characteristics are not only determinants of people's reactions to given social situations but also of people's activities in approaching or avoiding specific social situations. Some of the results presented here fit well with these reports by Argyle et al. (1981, p. 103) for an inventory containing a personality questionnaire, a list of activities, and a list of social situations. However, correlations between different parts of an inventory, that is, between personality measures on the one hand and reported frequencies or preferences of activities and social situations on the other, could be the result of common method variance from asking the same question with different words. Only if the occurrence of and responses to real social situations in a person's life are related to personality measures in a theoretically meaningful way can the analysis of interaction between person and environment be appropriately undertaken. In future studies, self-observation should be complemented by unobtrusive external observation. Techniques of observation focusing on meaningful units of goal directed behavior (Newton, 1976; see also Cranach, Kalbemmet, Indermühle, & Gugler, 1980) have to be adjusted to allow for matching with self-reports.

Final Comment

Emotional responses are a joint function of a person's goals and skills on the one side and of characteristics of the environment facilitating or impeding a person's striving for goals on the other side. This very general statement says nothing about the different levels of trans situational and transpersonal generality and of temporal stability of conditions. There is a hierarchy of goals in the sense that the more stable higher order goals to which the concept of motive may be related become concrete and effective, but also less stable, through specific incentives given by the environment. The environment itself is hierarchically ordered in the sense that there are superordinate structural components that determine the characteristics of the environment on the lower hierarchical levels.

When we register the kind of situations a person encounters and how often, what his or her emotional responses and attributions are, and so on, we get valuable insight into a person's proximal situation. But without taking into account the broader social context of a person's life the psychological descriptions and explanations of a person's goal orientations and emotional responses to life events are highly restricted in generality. Here it becomes evident that a thorough scrutiny of a person's emotional responses to social-life events needs to be related to research on personality structure and personality development on the one hand, and to research on social structure and social change on the other hand.

Reference Notes

References