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**How to cite**

SCHERER, Klaus R., TANNENBAUM, Percy H. Emotional experiences in everyday life: A survey approach. In: Motivation and Emotion, 1986, vol. 10, n° 4, p. 295–314. doi: 10.1007/BF00992106

This publication URL: https://archive-ouverte.unige.ch/unige:101898
Publication DOI: 10.1007/BF00992106

*Motivation and Emotion, Vol. 10, No. 4, 1986*

# Emotional Experiences in Everyday Life: A Survey Approach[1]

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*As part of a telephone survey, respondents were asked to report the most recent situation that evoked strong emotional feelings in them and to describe the pattern of their reactions. The majority of the situations reported had evoked negative emotions. Most of the emotion-antecedent events are connected to relationships with family and friends or to work-related situations. Only happiness and anger are reported as relatively pure feeling states; most others are emotion blends, with anger/sadness and sadness/fear occurring most frequently. Facial expression changes as well as heart and muscle symptoms are reported as the most frequent reactions across all emotions, whereas other nonverbal and physiological reactions are more specific for particular emotions. By the use of factor analysis, response patterns across various components of emotional state, including affect control, are explored.*

The psychology of emotion, in both theory and experimentation, has heavily emphasized emotional *reactions,* either physiological or overtly expressive. The *antecedents* of emotional experiences, the situations or events that have produced the emotional state, have been studied less frequently. Consequently, although we have some general notions as to how specific discrete emotions are elicited (e.g., anger often being aroused by frustration or injustice, sadness by the loss of a loved one, fear by a dangerous event, and so on),

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0146-7239/86/1200-0295$05.00/0 

we know very little about the relative frequency of such events. It would be interesting to find out whether different types or classes of emotion-producing situations have noticeably different effects on emotional reactions. For example, is our joyful reaction different when we receive a gift as compared to passing an examination? Furthermore, we know little about the way in which different life events affect individuals with different social backgrounds or different personality characteristics. Are certain types of situations—i.e., work- or family-related—more prone to happen to particular types of persons, and does that mean that they are more susceptible to certain kinds of emotional experiences?

In recent years there have been some attempts to elicit reports of emotional experiences as they occur in everyday life. In most cases, a recall procedure has been used in which respondents are asked to think of a situation that in the past has elicited one of a number of discrete emotions (e.g., Averill, 1982; Roseman, 1984; Scherer, Summerfield, & Wallbott, 1983; Scherer, Wallbott, & Summerfield, 1986; Smith & Ellsworth, 1985). In most of these studies, the central concern was with finding antecedent situations for specific basic emotions in an attempt to study the kinds of antecedents and the cognitive evaluation processes that give rise to specific emotional experiences. Requesting respondents to think of situations or events that elicited a specific discrete emotion, as labeled by an emotion word, represents a task that differs, in terms of memory retrieval, from one in which subjects are to report more freely any kind of emotional experience that first comes to their mind. The latter procedure is more likely to provide actuarial information—i.e., an indication of which kinds of situation occur with which frequency for particular groups of people and how the latter are likely to react. Furthermore, this procedure can be expected to yield recall of emotional situations that are less remote in time and thus might be remembered more accurately. In particular, subjects are free from the requirement to produce a situation that fits the label being used as a prompt by the researcher.

We have used this latter method in the present study by trying to elicit descriptions of the most recent—or, more precisely, the most readily remembered—emotional experience from a number of respondents in a telephone survey. The use of sample survey methodology allows us to study a wider variety of respondents, in terms of age, socioeconomic status, and social background, as compared to the earlier recall studies in which mostly college students were used.

Our main interest in this study was to obtain an acturial account of emotional experience from a fairly large sample of adult, nonstudent respondents. The focus was on finding out which kinds of emotion-eliciting situations occur how frequently and how various kinds of persons report reacting to the specific situations or events, in terms of both subjective feeling state and perceived physiological and expressive symptoms.

As in the case of written questionnaires, the use of the telephone survey methodology restricts us to studying *self-report* of emotional experiences. Given that the emotion-eliciting situations that the respondents recall happened in the past and in the private sphere of an individual, it is impossible to assess accurately the extent to which the self-report agrees with the *actual* situation and the actual symptoms and behaviors shown by the individual. It would be interesting, of course, to establish the degree of correspondence between subjective self-report and objectively measured emotional behavior. This is possible for some modalities of emotional responding that can be studied in laboratory experimental situations (see Pennebaker, 1982), albeit with great difficulty and only for emotional reactions mild enough to render experimental induction ethically acceptable. Many aspects of the emotion process cannot be studied in an objective manner, due to technical or conceptual constraints. This is particularly true for the cognitive evaluation or appraisal processes that produce a differentiated emotional state, for the subjective sensations or feelings accompanying the emotional arousal, for the action tendencies that are not visible in expressive behavior, and even for a number of physiological symptoms that are not easily amenable to direct psychophysiological study, such as stomach troubles. Therefore, quite apart from the methodological problem of being restricted to using self-report for at least some modalities that cannot yet be measured objectively, self-reported emotional experience is theoretically important in its own right because it allows an assessment of the *subjective representation of the emotion-eliciting event and the individual's reaction.*

## METHOD

This study was conducted as part of a larger omnibus telephone survey organized by the Survey Research Center at the University of California, Berkeley. This survey was conducted in January 1984 with a random sample of residential telephone subscribers in the San Francisco Bay area counties. It was primarily concerned with political and health issues, but, since it was an omnibus survey, other topics were included. Interviewers used an automated computer-assisted telephone interview (CATI) schedule, developed at the Berkeley Center (Shanks, 1983). It used a random digit dialing procedure, with respondents chosen from the respective cooperative households on a preestablished random schedule.

### *Procedure*

Toward the end of the interview schedule, the interviewer switched to the present emotion section with the following introduction: "We're also con-

cerned with different types of emotional experiences that people have in everyday life. Please try to remember the last time you had something happen to you, either good or bad, that affected you emotionally. Think of a recent situation which aroused very strong feelings in you and try to describe the situation or event in a sentence or two."

In those cases where this was not sufficient to elicit an appropriate response from the interviewee, the interviewer prompted as follows: "It may not have been a major event in your life, but something that pleased you, upset or depressed you or excited you..."

The interviewer entered a verbatim description of the situation or event described by the respondent onto the computer response file and at the same time coded the emotional tone (negative or positive) as well as the content characteristics of the antecedent situation. The codes available to the interviewer are listed in Table I. These categories were developed during the pretesting phase of the survey, when the entire interview schedule was tested in the field situation. Verbatim transcripts were converted to code categories that appeared, on the basis of apparent face validity, to accommodate most responses, with disagreement among the original coders being resolved by mutual consultation. Since the intention was to have the interviewers do the coding in the actual study, these categories were then tried out by a sample of the potential interviewers. Because interviewers seemed able to handle the task with reasonable ease and reliability (on the order of .82 or better), this procedure was judged to be acceptable.

In the next part of the interview we were concerned with physiological and expressive reactions that the respondents might have shown in the situations described. The interviewer introduced this as follows: "Now I'll read you a list of things people say sometimes happen to them when their emotions are aroused. Please tell me for each of these whether you experienced it or not."

The following physiological symptoms were mentioned: breathing problems, stomach cramps, feeling cold or shivering, change in heartbeat, muscles tensing or shaking, sweating more than usual. In addition, the following expressive behaviors were assessed: voice change or problems in controlling the voice, making abrupt or jerky movements or gestures, laughing or smiling, crying or sobbing, facial expression change, screaming or yelling. In each case the interviewer coded the respondent's answer as "yes," "no," "don't know," "not sure," "refused," and "no answer." The questions for these symptoms and behavioral responses were worded in such a way as to remind the respondent that his or her response in the specific situation described before was requested.

Finally, we were interested in the verbal label that the respondents themselves would use to describe their emotional experiences. The item was

**Table I.** List of Codes for Content and Tone of Antecedent Situations with Examples of Events Reported by the Respondents

1. WORK—positive
   Getting a job or being promoted
   Getting positive feedback for one's work
   Passing examinations
2. WORK—negative
   Unjust or unfair treatment by superiors
   Devious or harmful behavior of co-workers
   Losing a job or being demoted
   A business deal falling through or failing
   Failing an examination
   Work results less successful than expected
   Work not rewarding
3. FAMILY—positive
   Birth of new members of the extended family
   Getting engaged or married, anniversaries
   Family members overcoming illnesses
   Enjoyable contact with family members
4. FAMILY—negative
   Death or severe illness of a close relative
   Unreasonable behavior of a family member (dishonesty, drinking problems, time allocation, conflict over money, ingratitude, etc.)
5. FRIENDS—positive
   Something nice happening to a friend
   Enjoyable social occasions
6. FRIENDS—negative
   Death or severe illness of a friend
   End of a relationship
   Unreasonable or disappointing behavior of a friend
7. MEDIA—positive
   Sport victories
   Positive political developments
   Interesting movies
8. MEDIA—negative
   Sport defeats
   News about wars or massacres
   Scary movies (*The Day After*)
9. HEALTH/SAFETY—positive
   Pulling through a severe illness
10. HEALTH/SAFETY—negative
    Personal illness
    Automobile accidents
11. BEHAVIOR OF STRANGERS—positive
    Friendliness and unexpected helpfulness
12. BEHAVIOR OF OTHERS—negative
    Rude, unreasonable, or aggressive behavior (playing loud music, abuse, dangerous driving, unfriendly arguments, aggressive acts, etc.)
13. POSSESSIONS—positive
    Receiving Gifts
14. POSSESSIONS—negative
    Losing material objects, theft
    Death of pets
15. VARIOUS OR UNCODABLE

phrased as follows: "People often have mixed feelings in such emotional situations. I will now read you a list of such feelings. Please tell me for each one whether you felt it a lot, a little, or not at all."

Respondents were then given the labels anger, sadness, happiness, fear, shame, pride, anxiety, guilt. In each case the interviewer coded the response into one of the three categories provided, or as "don't know," "refused," or "no answer."

The last item of the emotion part in the survey concerned the attempt at control or regulation of the emotional experience: "How much, if any, did you try to hide your feelings so that no one else would know how you felt?" Again, respondents were given the choice of the categories "quite a bit," "a little," or "not at all," or one of the various no-answer categories.

These questions were always presented in the same order. It is well known, of course, that serious order effects can occur in a fixed sequence of items. However, in this kind of research one is always faced with the dilemma that a systematic variation of item order is impossible since some orders will appear illogical or nonsensical to the respondents and since a systematic factorial analysis of all possible orders is not feasible owing to constraints related to the number of cases. Therefore, we chose to keep the invariant item order that is generally used in such surveys. We do not see much reason to believe that the distribution of symptoms or feeling states would change dramatically if item order were changed.

### *Profile of Respondents*

A total of 223 respondents were included in the telephone survey, with 192 reporting an emotional experience and describing their reactions. Since it is impossible to determine reliably whether failure to report an emotional incident is due to inability to recall such a situation or to refusal, we did not attempt to analyze this issue further. With $N = 192$, there were 94 male and 98 female respondents and an age range from 18 to 83 years (mean age = 38.5). Seventy-two percent of the respondents said they were white, the remainder consisting mainly of blacks and persons of Asian origin. The respondents represented a wide variety of occupations and income levels. On all these variables, the sample was in general accord with the official Bay Area census data.

## RESULTS

It should again be noted that all of the results are based on self-report. For reasons of style and space we do not use "reported" or "recalled" to systematically qualify the emotional responses described in the results section. It should be understood, however, that we do not want to imply that these responses are equivalent to the assessment of actual behavior.

It must also be noted, of course, that the events reported may not be the most recent or the most intensive emotional situations that our respondents experienced in the last few days before the interview. The fidelity of the reports in relation to the actual events depends on a number of factors at various stages of the memory processes. The initial storage of an emotional experience in memory is likely to be affected by a large number of subjective factors, including ego involvement and defense mechanisms. Similar factors may determine the strength of the memory traces and the ease of recall (see Rapaport, 1950).

Furthermore, recent research has shown the importance of a number of general inference tendencies or strategies such as the "availability," "representativeness," and "vividness" heuristics (see Tversky & Kahneman, 1974; Nisbett & Ross, 1980). These processes may have selectively influenced the recall of particular situations in the survey. For example, the political and health issues on which the respondents were questioned in the survey may have rendered particular emotional content more "available," e.g., anger situations if the respondent disliked particular politicians he or she was asked about. Similarly, respondents may have recalled situations that they consider "representative" for certain emotion categories or those that are particularly "vivid" because of especially strong emotional interest, concreteness, or temporal, spatial, or sensory proximity of the information (see Nisbett & Ross, 1980, pp. 45–61).

Obviously, issues such as these cannot be studied in the context of a survey procedure such as the one reported here. First, the relevant factors concerning the heuristics used in inference and recall are unlikely to be accessible in memory recall of naturalistic events (i.e., those not manipulated in an experimental fashion). Second, the brief contact with the respondent in a telephone interview does not allow probing for potential biasing factors. While we acknowledge the potential influence of the recall strategies discussed above on the retrieval of the specific situation reported, we do not believe that recall or report is falsified or inaccurate. In comparison to other issues dealt with in the survey, the emotional experience report would seem rather innocuous, and it is highly likely that respondents refuse to answer or report that they are unable to think of any information (as 31 respondents did in this study) rather than give false information. Consequently, it is probable that the reports reflect the *subjective experience* at the time of the event rather reliably (apart from the inevitable losses and transformations in the storage and retrieval processes).

### *Type of Antecedent Situations*

In 67.6% of all cases, respondents reported a negative, and in 29.3% a positive, emotional experience. (In the few remaining cases, the affective value of the emotional experience was ambiguous and could not clearly be

coded by the interviewer.) Juding from this result, events that trigger negative emotional feelings seem to be remembered and reported more than twice as often as positively valued events. This result may provide an explanation for the preponderance of negative emotion terms in our affect lexicon, a phenomenon that has been frequently commented upon by psychologists studying emotional behavior (e.g., Averill, 1980). While the greater availability for recall of negative events can explain the strong concern with negative emotions, in terms of both lay psychology and a scientific psychology of emotion, it does not necessarily provide a clue for the greater semantic differentiatedness of the negative emotion descriptors. We will examine the situations reported in greater detail to pursue this issue.

In Figure 1, the relative frequency of positive and negative situations for eight major domains (see Method section) have been plotted. This plot not only shows the strong preponderance of negative versus positive emotions but also demonstrates the major role of work- and family-related situations for both types of emotional experience; e.g., relationships with friends are third in rank as a source of emotional arousal. These results clearly replicate earlier findings (Scherer et al., 1983, 1986) obtained in a series of intercultural questionnaire studies showing that established personal relationships are the most important source of emotional experience for the basic emotions, except for fear. As in these earlier studies using college students,

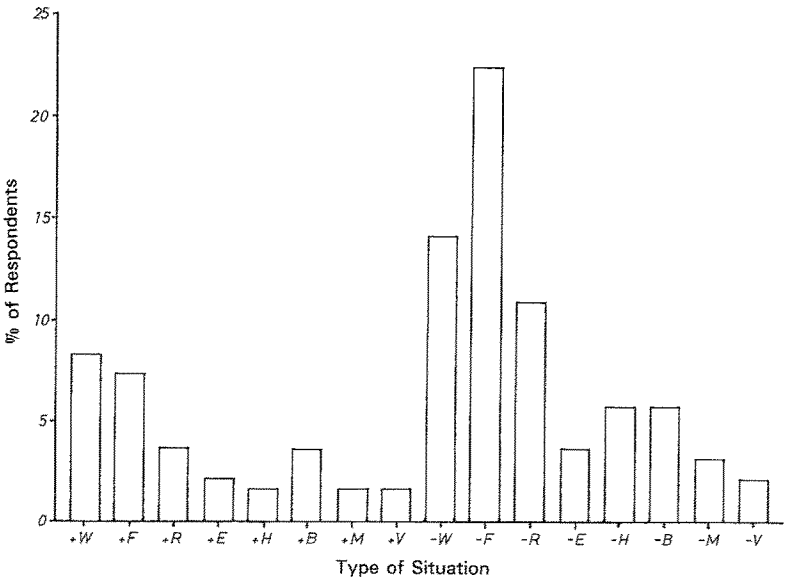


**Fig. 1.** Characteristics of emotion-eliciting situations. + = positive experience, − = negative experience, W = work, F = family, R = friends, E = media, H = health/safety, B = behavior of strangers, M = material possessions, V = various.

the present sample, with a wider range of adult respondents, also reveals that almost half of all emotional incidents reported are connected to relationships with family members and friends. In addition, work-related situations are of much greater importance in this study than in the earlier studies, which may indicate that holding regular job implies high ego involvement in work-related matters and consequently a stronger likelihood that the latter will evoke emotions.

The kind of situations that have been reported for each of the major content categories are illustrated in Table I. The interviewer coding categorized the emotional tone and content of the experiences reported by the respondents in a fairly gross manner. However, as described in the Method section, we also asked the respondents to indicate which types of subjective feelings they experienced in the situation. Since the respondents were given a list of several feeling states, they could indicate the presence of several different emotional states.

The data show that respondents made frequent use of this possibility. The data testify to a rather high complexity of subjective feeling state, with a relatively large number of different states that were apparently experienced in each emotion. At times, even somewhat incompatible feelings, such as happiness *and* anxiety, were reported for a particular event. Examining some of the respective situations provides some clues as to why a number of rather unusual combinations might actually have been experienced. In one case, for example, an elderly man apparently experienced *ambivalent* feelings as a response to retirement. In other cases, the emotional feeling states checked by the respondents might have occurred in sequence rather than simultaneously. For example, a person having lost his wallet reported anxiety (presumably because of the negative consequences of a permanent loss), anger (presumably because of not having watched it more carefully), and happiness (after it was returned to him).

Looking at the emotional situations in this way, it would be necessary to take every case on its own, interpreting each set of combinations of feeling states one by one, thus vitiating an aggregate analysis. We therefore decided to concentrate on those cases where a predominant feeling state was reported. The respective variables were coded in such a way as to include only those responses where the respondent had indicated that he had experienced a particular feeling "a lot." This procedure provides some degree of "intensity control" to ensure that we are not comparing trivial experiences in some respondents with profound affective upheavals in others. Cases in which clearly incompatible feeling states were likely to have occurred sequentially or in an ambivalent situation were disregarded. However, we did allow for mixed affect states where the ingredients seemed generally compatible. Another concern in the recoding of this variable was the relative frequency of particular combinations to ensure reasonable cell sizes for the statistical analysis.

Figure 2 shows the relative frequency of the combined feeling state categories. It is surprising how rarely fear as a pure feeling state occurred. On the contrary, happiness occurs as the most frequent relatively pure emotion. (Actually, in many cases where happiness was checked, pride was also indicated as having been experienced. But, since pride was generally ubiquitous and did not seem to differentiate between experiences, this variable was not specifically included in the recoding.) As far as anger and fear are concerned, it is interesting to note that they tend to occur more frequently in combination with one another than singly. This seems to indicate that many negative emotion-producing situations are quite complex and produce more than one emotional state. A significant theoretical question is whether these blends are indeed mixtures of pure affect or whether the emotion process can be more adequately considered as a sequential patterning of different components (see Scherer, 1984). The fact that combinations of discrete emotion labels are used does not settle the issue since it may be related to the linguistic codability of emotion states in which discrete emotion labels dominate.

Since the frequencies in some of the categories shown in Figure 2 are too low for statistical analyses, we further combined the categories in such a way that feeling state descriptors combining angry and sad (categories 1

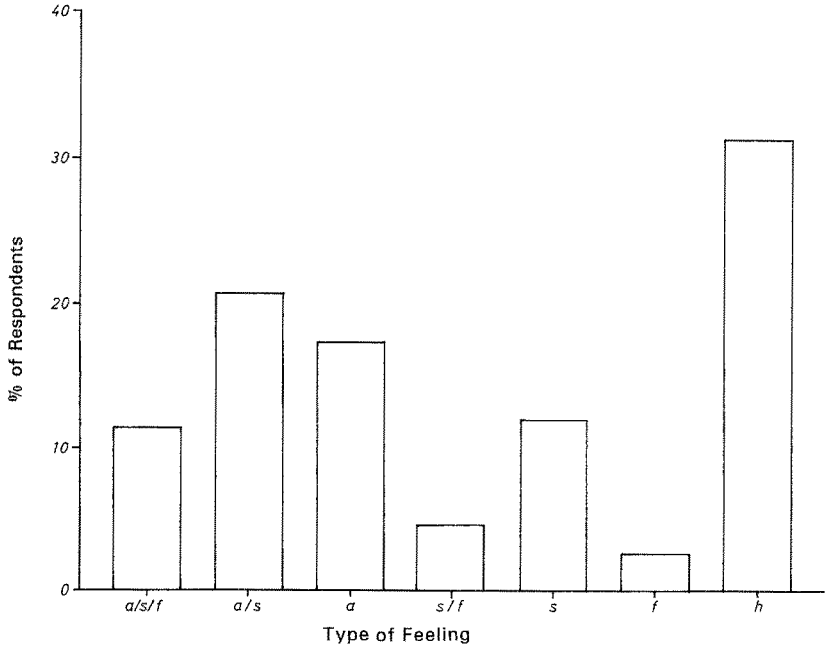


**Fig. 2.** Frequency of different types of feelings. a = anger, s = sadness, f = fear, h = happy.

and 2 in Figure 1) and descriptors combining sadness and fear (categories 4, 5, 6 in Figure 1) were respectively combined. The data show that the anger component is very prominently involved, occurring in almost 50% of the cases. Given that anger very frequently involves blaming some other person for unreasonable,inconsiderate, or unjust behavior (see Averill, 1982; Scherer et al., 1986), this suggests that many of our daily emotions are related to interaction with other people—an impression that is further supported by the major role of family and friend relationships among the emotion antecedents.

Of particular interest is the anger/sad blend. Looking at the respective situations, we often find instances where an event has happened that had rather negative implications for personal relationship (often beyond repair) and in which one of the partners in the relationship (sometimes oneself) is blamed for the event. It is tempting to speculate that the feeling of sadness may be most strongly determined by the nature of the *consequence* of the event causing the emotion—e.g., an unalterable negative change in social relationships due to death or separation (see Scherer, 1986). Anger, on the other hand, might be more strongly determined by the nature of the *cause* of the event, particularly the kind of agent and the motivational basis rather than the consequences, as such. If this were so, we would expect the two emotions to show a different time course and different reaction patterns (assuming an adaptive function of emotional behavior). Thus, it would be of theoretical interest to further study the anger/sadness blend in greater detail to examine the interaction of these two emotions.

Any differential effect in the frequency of the particular types of emotion-arousing situations or of particular feeling states also merits attention. As indicated in the Method section, an extensive set of background characteristics for the respondents—sex, age, education, religion, race, income, home, etc.—were available. The antecedent categories, as well as the feeling states, were cross-tabulated with these background variable in a search for possible differences in the frequency with which specific situations or feelings might occur for subgroups of the sample. However, none of the Chi-square tests showed a significant relationship, and only few tendencies were apparent in the data. This essentially conformed to earlier results, showing that both antecedents and reactions were highly similar for different groups of people and even across different cultures (Scherer et al., 1983, 1986).

### *Emotional Reactions*

The respective overall frequencies of the emotional reactions reported by the respondents, in terms of both physiological symptoms and expressive behavior, are shown in column 1 of Table II. In terms of the total response

**Table II.** Frequency of Different Symptoms by Type of Feeling Reported (in Percent)

| Symptom | Total sample | Respondents reporting feelings | | | | $\chi^2$ significance |
|---|---|---|---|---|---|---|
| | | Happy | Angry | Angy/sad | Sad/fearful | |
| Breath | 19.30 | 10.60 | 23.10 | 20.80 | 10.30 | n.s. |
| Stomach | 15.60 | 8.50 | 19.20 | 27.10 | 6.90 | [a] |
| Cold | 23.40 | 10.60 | 7.70 | 37.50 | 27.60 | [b] |
| Hot | 28.30 | 28.30 | 46.20 | 31.30 | 20.70 | n.s. |
| Heart | 65.80 | 59.60 | 72.00 | 79.20 | 58.60 | n.s. |
| Muscles | 43.20 | 23.40 | 53.90 | 64.60 | 51.70 | [c] |
| Sweat | 24.10 | 14.90 | 26.90 | 29.80 | 17.20 | n.s. |
| Voice | 44.30 | 27.20 | 69.20 | 56.30 | 44.80 | [b] |
| Move | 21.90 | 12.80 | 34.60 | 35.40 | 13.80 | [a] |
| Smile | 36.10 | 93.60 | 19.20 | 10.60 | 10.30 | [c] |
| Cry | 35.10 | 17.00 | 11.50 | 55.30 | 58.60 | [c] |
| Face | 85.40 | 82.60 | 80.80 | 91.10 | 96.30 | n.s. |
| Yell | 21.90 | 12.80 | 30.80 | 39.60 | 6.90 | [b] |

[a] $p < .05$.
[b] $p < .01$.
[c] $p < .001$.

pattern, independent of feeling specificity, it is interesting to look at the relative importance of the different reaction modalities. Facial expression change seems to be by far the most important emotion indicator, with mention by 85.4% of the respondents. Thus, the claim that the face is the primary site of the emotions made by some theorists (Tomkins, 1962; Izard, 1977; Ekman, 1984) is supported by these subjective report patterns. It is, of course, impossible to decide whether our respondents reported actual behavior changes or somewhat stereotypical response tendencies provoked by the questions of the interviewer (see below). In addition to facial expression, 65.8% of the respondents report some kind of heart symptoms (again supporting the traditional metaphor that the heart is the internal seat of the emotions). Voice changes are next, closely followed by muscle symptoms. The remaining modalities are less important as *general* emotion indicators, and some of them, as we shall see, are quite specialized for particular emotions.

Table II contains a breakdown of the relative frequency of symptom reports by feeling state. In the first column, the relative frequencies for all 192 subjects that reported an emotional incident are shown, whereas in the remainder of the table a breakdown over the different feeling states is shown for those 150 respondents for whom a predominant feeling state could be identified (see above). The differences between the various types of feelings were tested by Chi-square tests in 2 × 4 tables (reaction presence/absence × feeling types). The most differential reaction patterns found were smiling and crying, the former being almost exclusively present in happiness (although there seems to be some amount of polite smiling in anger as well), the latter mainly occurring in relation to sadness (although there is some crying in happiness).

Somewhat more surprising is the differential role of muscle tension changes, which seem to be mainly related to negative feeling states. A very similar pattern is seen for voice changes. We also find rather emotion-specific patterns for felt temperature differences (paralleling recent findings by Ekman, Levenson, & Friesen, 1983; Scherer et al., 1983, 1986): Whereas anger and happiness seem to be hot (even though the result are not significant for hot), sadness and particularly fear are seen as cold (for discussion of the psychological mechanisms that could account for this fact, see Scherer, 1986). The remaining differences in Table II all point toward a special role for anger for some of the reaction modalities: Whenever an anger component is involved, there are likely to be more stomach symptoms, more abrupt movements, and more yelling—a pattern of findings that sounds familiar both from a psychosomatic and from a nonverbal communication perspective.

As for the antecedents, we tested the presence of differential effects for subgroups of the sample as defined by the background variables. Since the large number of the Chi-square tests found fewer significant effects than one would expect by chance, we concluded that there are no differential antecedent effects of any strength in the report of emotional reactions. This is consistent with the claim that emotions are biological adaptation mechanisms with a high degree of cross-cultural universality and maybe even phylogenetic continuity (see Scherer, 1984).

### *Control of Emotion*

We had also asked our respondents whether they had tried to hide the emotion. In the sample as a whole, 21.9% said they tried quite a bit, and 26.6% only a little, to disguise their feelings. Table III shows a breakdown of the relative frequencies by the type of subjective feeling reported. A test of statistical difference shows that there are strong differences ($\chi^2 = 20.54$, $p < .003$) between the different types of feelings. As one might expect, happiness is rarely, and, if so, not very strongly, controlled. Also, somewhat surprisingly, pure anger is not reported as very frequently hidden, and only very rarely is an attempt made to control this emotion strongly. Apparently, in those cases where pure anger is felt, it is also expressed freely (probably

**Table III.** Relative Frequency of Attempts to Hide Feelings (in Percent)

| | Type of feeling | | | |
|---|---|---|---|---|
| Hide | Happy | Angry | Angry/sad | Sad/fearful |
| Not at all | 75 | 58 | 46 | 45 |
| A little | 19 | 34 | 19 | 34 |
| Quite a bit | 6 | 8 | 35 | 21 |

often for the benefit of the person who had provoked the anger reaction). By contrast, anger/sadness blends are controlled very strongly, more strongly than sadness/fear blends. The reason for this might be that one does not want to show to the person who has caused the event (and about whom one is angry) that one is feeling sad (often as a result of a problem with relationships). In comparison, the desire to hide the sadness/fear blend is low, possibly due to the fact that one is counting on outside help by letting others see at least a glimpse of how one is feeling.

We also examined the possibility that the attempt to mask a feeling state might be related to the kind of emotional reaction produced. As one might predict, smiling was not strongly controlled ($\chi^2 = 8.4, p < .02$), while much stronger attempts were made to hide the emotion in the case of crying ($\chi^2 = 10.7, p < .005$). Quite naturally, very few attempts at disguise were made in those cases where one had already started to yell or shout at someone else ($\chi^2 = 6.9, p < .05$). A final result of interest is a significant greater tendency to hide the emotional reaction for people who show a lot of sweating in the emotional event ($\chi^2 = 6.4, p < .05$). It might be interesting, in future studies, to check whether increased psychogalvanic skin responses correlates with repressive defense strategies (as part of particular coping styles).

### *Patterns of Emotional Experience*

So far we have dealt with the major components of the emotional experience—antecedent situation, reactions, i.e., symptoms and expressive behaviors, and control—separately, mostly using cross-tabulation to examine the nature of the responses. While we have tried to break down the reactions and the control attempts by looking at the combined feeling categories, this does not allow the assessment of the existence of major patterns or clusters of specific aspects of the emotional experience across all components.

In this section, a multivariate analysis method, factor analysis, is used in order to look for such overall patterns or syndromes. First, we have to examine the legitimacy of using interval-scale-based coefficients, such as the Pearson *r*, given that the respondents' answers were coded on ordinal scales, sometimes even on dichotomous scales. We cross-tabulated all of the variables studied ($2 \times 3$ and $3 \times 3$ tables) and computed a number of ordinal association measures, such as Cramer's V, the contingency coefficient, and different versions of Kendall's tau, as well as Pearson *r*'s. On a theoretical basis one would expect Kendall's tau to be the appropriate measure. A comparison of the various coefficients for the cross-tabulations of the present data showed that the Pearson *r*'s were located in all cases very close to the Kendall coefficients (in over 90% of all cases between Kendall's tau b and tau c) and, in most cases (except for very unequal margin distributions), equally close to

Cramer's V and the contingency coefficients. We feel justified, therefore, in using a Pearson correlation matrix for the multivariate analysis mentioned above.

Table IV shows a submatrix of the total correlation matrix, namely, the correlations between the feelings and the tone of the antecedent situation, the reactions, and the control attempt. It is instructive to examine the reactions and control attempts associated with the individual feelings before moving on to the factor analysis. Cases in which the feelings of anger, fear, and anxiety were reported show the most pronounced pattern of physiological symptoms and expressive reactions. For all three feeling states, stomach, heart, and muscle symptoms, as well as sweating, tend to be reported. A differentiation is found on the hot–cold dimension, with anger tending toward feeling hot, and fear and anxiety toward feeling cold, given the high incidence of shivering. Breathing changes also seem to accompany fear and anxiety. Expressive activity, particularly as far as voice changes and movement are concerned, is most pronounced for anger and anxiety.

Sadness and happiness show fewer and highly differentiated reaction patterns. While muscle symptoms are reported for both feelings, the differentiation occurs mostly in the expressive behaviors, with a very high association of smiling with happiness and crying and voice changes with sadness. Relatively few reactions are reported for shame and guilt feelings, with the exception, perhaps, of stomach problems and feeling hot. Except for smiling, pride is the most symptom- and expressionless feeling. As far as anger, fear, sadness, and happiness are concerned, these findings generally strongly replicate earlier results obtained in cross-cultural questionnaire studies of emotional experience (see Scherer et al., 1986). As far as control attempts are concerned, there is a general tendency for all negative emotions to be hidden, a tendency that is particularly pronounced for sadness and anxiety.

As shown in earlier sections of this article, the feeling states were often reported in combination, and we now turn to an investigation of major patterns or syndromes of feelings, reactions, and control attempts. Table V shows the results of a factor analysis in which seven factors with an eigenvalue $>$ 1 were retained for Varimax rotation. In the table, we have underlined the loadings of those variables that we consider useful to interpret the factor based on the relative size of the loading (usually $>$ .3, except in some cases of generally very low loadings on a factor). (We are using only positive loadings, reflecting the report of the *presence* of a particular component of emotional experience.) We consider this analysis as a rather speculative, heuristic attempt to generate hypotheses concerning potential emotion syndromes. Thus, we do not interpret the factors as orthogonal *dimensions* of emotional experience but only as convenient summaries of the association patterns between the different components of the experiences reported.

**Table IV.** Correlations Between Feelings and Reported Symptoms, Expressive Behaviors, and Control Attempts[a]

| | Anger | Sadness | Happiness | Fear | Shame | Pride | Anxiety | Guilt |
|---|---|---|---|---|---|---|---|---|
| Tone | −.58[c] | −.59[c] | .81[c] | −.23[b] | −.28[c] | .36[c] | −.33[c] | −.24[b] |
| Breath | .12 | .12 | −.02 | .22[b] | .18 | .06 | .21[b] | .16 |
| Stomach | .24[b] | .14 | −.04 | .18 | .19[b] | .01 | .20[b] | .21[b] |
| Shiver | .15 | .28[c] | −.08 | .39[c] | .13 | −.014 | .21[b] | .19 |
| Hot | .22[b] | .04 | .02 | .07 | .20[b] | .11 | .10 | .19 |
| Heart | .27[c] | .15 | −.01 | .20[b] | .15 | .06 | .27[c] | .17 |
| Muscles | .33[c] | .35[c] | −.28[c] | .35[c] | .17 | −.13 | .45[c] | .17 |
| Sweat | .18 | .05 | −.09 | .23[b] | .19 | .08 | .23[b] | .16 |
| Voice | .33[c] | .19 | −.18 | .13 | .08 | .00 | .24[b] | .19 |
| Move | .26[c] | .19 | −.08 | .15 | .19 | −.02 | .22[b] | .13 |
| Smile | −.48[c] | −.50[c] | .74[c] | −.26[c] | −.22[b] | .43[c] | −.28[c] | −26[c] |
| Cry | .12 | .47[c] | −.11 | .22[b] | .11 | −.13 | .13 | .21[b] |
| Fact | .01 | .20[b] | −.09 | .12 | .11 | −.05 | .15 | .14 |
| Yell | .25[c] | .10 | −.05 | .13 | .12 | .09 | .19 | .14 |
| Hide | .19 | .33[c] | −.18 | .18 | .11 | .00 | .31[c] | .20[b] |

[a]Pearson $r$'s, $N = 173$.
[b]$p < .001$.
[c]$p < .0001$.

**Table V.** Varimax Rotated Component Loadings from Factor Analysis of Tone, Symptoms, Expressive Behaviors, Feelings, and Control Attempts

| | Factors | | | | | | |
|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| Tone | .883 | −.056 | −.033 | −.150 | −.050 | −.080 | .019 |
| Breath | .091 | .552 | .102 | .181 | −.157 | .067 | .187 |
| Stomach | .015 | .102 | .581 | .222 | .270 | .005 | −.106 |
| Shiver | .038 | .443 | .482 | .100 | .231 | −.309 | .016 |
| Hot | −.007 | .101 | .197 | .214 | −.093 | .640 | .207 |
| Heart | .056 | .511 | .028 | .096 | .025 | .256 | .309 |
| Muscles | −.259 | .617 | .301 | −.076 | .056 | .049 | −.018 |
| Sweat | −.034 | .463 | −.066 | .110 | .077 | .462 | −.072 |
| Voice | −.208 | .067 | .385 | −.137 | .362 | .272 | .453 |
| Movement | −.058 | .274 | .602 | .048 | −.119 | .002 | .204 |
| Smile | .831 | .005 | −.086 | .126 | −.158 | .059 | .069 |
| Cry | −.101 | −.032 | .116 | .139 | .750 | −.131 | .283 |
| Face | .015 | .137 | .055 | .081 | .100 | .009 | .833 |
| Yell | −.038 | .033 | .785 | .036 | −.040 | .191 | .044 |
| Anger | −.632 | .209 | .300 | .159 | .077 | .345 | −.059 |
| Sadness | −.573 | .263 | .074 | .338 | .379 | −.199 | .158 |
| Happiness | .917 | −.125 | −.013 | .028 | −.012 | .019 | −.045 |
| Fear | −.203 | .604 | .112 | .303 | .151 | −.272 | −.009 |
| Shame | −.207 | .161 | .089 | .807 | −.054 | .089 | .029 |
| Pride | .550 | −.020 | .109 | −.057 | .129 | .475 | −.213 |
| Anxiety | −.359 | .631 | .125 | −.016 | .175 | .083 | −.003 |
| Guilt | −.121 | .093 | .119 | .748 | .227 | .139 | .058 |
| Hide | −.150 | .333 | −.287 | .054 | .641 | .178 | −.139 |
| Variance | 3.732 | 2.518 | 2.110 | 1.700 | 1.601 | 1.451 | 1.318 |

Factor 1 represents a very clear happiness/pride pattern, reflecting the positive tone of the antecedent situation and characterized by a smiling reaction. It is quite remarkable that no other symptoms or expressive behaviors load on this factor. Factor 2 represents a well-defined fear/anxiety pattern, with pronounced physiological symptoms (breathing changes, shiver, heart and muscle symptoms, sweating) and a strong tendency to hide the emotional state. It is possible that the strong control tendency is responsible for the lack of expressive reactions in this pattern.

The pattern shown in Factor 3 could be called "open, explosive anger," characterized particularly by strong expressive reactions in voice, including yelling, and movements, with correspondingly weak attempts to control or hide this state. In terms of symptoms, this open anger pattern contains stomach and muscle symptoms, as well as shivering. The latter two could be related to elevated muscle tone in the service of expressive movement.

A very different anger pattern, which, interestingly, is combined with feelings of pride is seen in Factor 6. It is not open or very expressive, the major symptom being feeling hot. In order to understand this pattern, we

examined the specific situations reported by respondents indicating that they had felt both anger and pride. It turned out that almost all of these emotions involved a threat to the respondent's self-esteem, such as being demoted, treated unfairly by one's boss, a son getting fired, one's work and effort not being appreciated, unjust criticism or blame, and feeling not trusted. Clearly, many respondents answered positively to the interviewer's question concerning the experience of pride when their sense of self-esteem or pride was *affected,* often negatively, and not only when they were genuinely proud. It is interesting to note that feeling hot seems to be associated with negative experiences involving one's self-esteem, since shame and guilt also seem to be associated with feeling hot (see Table IV). This tendency is also visible in Factor 4, which shows a pattern of shame and guilt with very little symptom or expressive reaction.

Factor 5 represents a very clear sadness pattern, with voice changes and crying as predominant reaction patterns. Surprisingly, there are no consistent reports of physiological symptoms here, except, possibly, for a slight association with stomach problems and shivering. Factor 7 reflects a pattern of facial/vocal reaction without any relationship to a particular feeling state (due to the absence of strong face correlations with the feelings in Table IV). It is possible that facial reactions are equally likely for all emotions and that the report of facial reactions depends more on individual differences or the absence of control attempts.

While this attempt to isolate particular patterns of components of emotional experiences in our data set is highly conjectural, it may help to look for stable syndromes of this sort using more stringent methods in further studies. Even the rather preliminary patterns reported here seem to indicate that particular combinations or blends of feeling states with a highly differentiated pattern of reactions (including differential involvement of physiological symptoms and expressive behaviors) and control attempts can be identified and do show a high degree of face validity.

## CONCLUSIONS

The major purpose of the present study has been to obtain some sort of inventory of the frequency of particular types of reported emotional states and the situations that produce them, using sample survey methodology. Rather than eliciting instances for specifically labeled emotional states, we asked our respondents to report the most recent event that had led to some emotional involvement for them. The responses given by the interviewees seemed to indicate that this strategy generally worked rather well. The large majority of the respondents reported a recent emotional incident quite spontaneously and without much prompting. They were also able to describe the

nature of their subjective feeling state as well as the kind of emotional reaction they had consciously experienced.

While these kinds of data have certain limitations in terms of their validity for an accurate assessment of emotional reactions, they do provide useful information about the kinds of events and reactions that people retrieve from memory and/or report in relation to emotional arousal.

Most of the situations that produced emotional feelings were rather mundane, related to daily work activities and particularly to interpersonal relationships. However, in spite of the mundaneness and the apparent insignificance of some of the events described, they all had a rather strong impact of the individuals questioned since they all reported "a lot" of at least one specific feeling. This fact again underlines the important role of *cognitive evaluation processes* that are highly individualistic in nature. In other words, events that seem trivial to one person may be evaluated as highly ego-involving by another. Particularly, a major role is played by personal motives in relationship to the event, which determine the degree of concern of the individual that seems to be central for emotional arousal (see Frijda, 1986; Scherer, 1986).

The present data have supported results obtained in earlier questionnaire studies on emotional experience, even though the latter were conducted with different groups of respondents in many different countries, using a rather different methodology. It is true, of course, that all of these studies rely on self-report of recalled emotional experiences, rather than actual observation. This recall procedure is admittedly fraught with the possibility of response bias, stereotypical notions, or defense strategies. Yet it is hard to imagine that people's recall of emotional experiences is totally unrelated to the nature of the actual emotional process. Furthermore, given the important role of the subjective feeling component in emotion, a component that can be assessed only by directly questioning the experiencing subject, it would seem that the kind of methodology proposed in the present study is likely to yield interesting and useful results concerning the nature of day-to-day emotional behavior. Furthermore, some of the theoretical issues raised above, which were suggested by the pattern of the self-report results, could be profitably studied in more experimental paradigms. Data such as those reported in this paper may help researchers to achieve greater ecological validity in selecting emotion-provoking situations for experimental induction or for systematic study of specific situations and events in the field.

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