

1 EMOTIONAL EXPERIENCE IN CULTURAL CONTEXT: A COMPARISON BETWEEN EUROPE, JAPAN, AND THE UNITED STATES¹

KLAUS R. SCHERER
University of Geneva and University of Giessen

HARALD G. WALLBOTT
University of Giessen

DAVID MATSUMOTO
Wright Institute, Berkeley

TSUTOMU KUDOH
University of Osaka

INTRODUCTION

A major problem in emotion research is gaining access to the phenomenon. Whereas different kinds of cognitive processes can be studied in the laboratory as well as in natural settings, there are both ethical and practical limits to emotion induction, in and out of the laboratory. Consequently, even though emotions are ubiquitous and almost everyone has extensive firsthand experience with a wide range and intensity of emotions, we have very little actuarial information on the incidence and the nature of emotional experiences in everyday life. No doubt empirical data on the patterns of emotional experience in representative groups would be most useful for emotion psychologists both with respect to direction and focus of future studies and for the difficult task of hypothesis generation in an era where there is little theoretical background to build on.

In 1979 a group of European researchers (see acknowledgement note) began to use an anonymous questionnaire method to gather preliminary data on everyday emotional experiences. Although the validity of questionnaires as instruments to collect *objective* data has been criticized, there

¹ The European data reported in this chapter have been collected in collaboration with H. Ellgring, Max-Planck-Institute of Psychiatry, Munich; A.B. Summerfield, University of London; P. Ricci-Bitti and D. Giovannini, University of Bologna; B. Rimé, University of Louvain; J. Cosnier, University of Lyon; V. Aebischer, LEPS, Paris; E. Baenninger-Huber, University of Zürich; E. Babad, Hebrew University of Jerusalem; and A. J. Fernandez and J. M. Dols, Autonoma University of Madrid. The authors would like to thank Ursula Hess and Erin Nishimura for their aid during data collection and coding.

is often no other way to gather information about the *subjective* experience of emotion—both feeling and perceived reactions—than by asking subjects (see Wallbott & Scherer, 1985a, for a methodological discussion). Furthermore, because the evaluation or appraisal of emotional stimuli is often considered primary in the elicitation and differentiation of emotions (Arnold, 1960; Lazarus, 1966, 1984; Scherer, 1981b, 1984a, 1986a), subjects' verbal reports concerning their assessment of the antecedent situations are necessary. Given the reticence of people to talk about their emotional experiences, the use of anonymous questionnaires appears to be a promising method.

The questionnaire method is also rather suitable for use in cross-cultural research. For example, while the importance of intercultural comparison is generally acknowledged, especially for addressing issues concerning biological versus cultural determinants of emotional processes, the number of cross-cultural studies addressing these issues is small; a reasonably extensive body of data exists only in the area of facial expressions of emotion (see Ekman, 1982; Izard, 1977). The comparison of questionnaire data across cultures can help pinpoint the areas in which more involved behavioral and observational measurement might yield interesting cross-cultural differences.

In the concluding chapter to the monograph publication of the results of the European studies mentioned above (Scherer, Wallbott, & Summerfield, 1986), Scherer (1986b) cautioned against broad generalizations of the data, given the fact that for most of the issues investigated no specific *a priori* hypotheses nor informal expectations had been advanced. The major patterns of results were therefore formulated as specific areas for further work. In addition, although there were a number of interesting cross-cultural differences, there was also a surprisingly large degree of correspondence among the reported emotional experiences in the various European countries (including Israel; for details compare Scherer, Summerfield, & Wallbott, 1983; Scherer, Wallbott, & Summerfield, 1986). Although one may interpret these data to mean that the emotions are primarily biologically based and only superficially subjected to cultural regulation, another argument could be that a comparison of Western European countries—in spite of the stereotypical notions about North-South differences—does not provide a strict test of cultural differences because these countries may be too similar in terms of cultural background.

The purposes of this study were twofold: (a) to further test the hypotheses that have been advanced on the basis of the earlier European studies; and (b) to provide a somewhat stronger test of the cultural differences versus universality hypothesis by including not only the United States but also Japan, a culture that is traditionally considered to be rather different from Western cultures. Because in our earlier work many dif-

ferent hypotheses concerning antecedents, reactions, and control of emotions have been postulated, we describe the respective hypotheses together with the appropriate section of the results in order to allow the reader to compare predictions and outcomes more readily.

METHOD

Subjects

Subjects from the United States were 165 university students participating in partial fulfillment of class requirements; these data were collected in Milwaukee and Berkeley. Subjects from Japan were 174 university students, also participating in partial fulfillment of class requirements; these data were collected in Osaka. To make the European sample collected earlier comparable, a random sample of $N = 171$ was drawn from a total of 779 subjects gathered in different countries of Europe (West Germany, Great Britain, Italy, Spain, Switzerland, France, Belgium, Israel) using the same questionnaire (see following section). All subjects were from a variety of social classes and fields of study, with their ages ranging from 18 to 35.

Questionnaire

We were interested in three issues concerning the emotions: (a) the antecedents and determinants of emotion; (b) the reactions of the subjects in these situations; and (c) the amount of control and coping attempts they used to regulate their reactions. Specific questions were designed to structure the subjects' descriptions of their experiences and to obtain as exhaustive a report as possible. In order not to bias the answer alternatives and to avoid prompting effects, we used an open-ended free response format throughout (except for three intensity ratings, where 9-point scales were used). Obtaining information on the determinants and antecedents meant we had to collect detailed descriptions of what really happened, who was involved in the situation, where the situation took place, when the situation happened, and how long it lasted. To provide data concerning symptoms and reactions subjects reported on their nonverbal reactions (i.e., facial expression, gestures, body posture changes, changes in voice and speech, etc.), their physiological symptoms and sensations, and their verbal utterances. Subjects also rated the overall intensity of their feelings. Finally, subjects rated the efforts they used to control their nonverbal, verbal, and physiological reactions.

Subjects were instructed to describe situations or events that led them to experience four different emotions, which were labeled as "joy/happi-

ness," "sadness/grief," "fear/anxiety," and "anger/rage," using the appropriate terms in the respective language. (While we do not deny the existence of a potential problem of semantic equivalence of emotion terms in different languages, we believe that the problem is minor in the case of these four major emotions.) Subjects were told they should recall not only situations in which emotional arousal was very obvious but also events in which they were emotionally aroused without anybody noticing it. The order of the emotions was randomized across subjects.

The main questionnaire was followed by a personal information sheet eliciting information about the subject's national, linguistic, and academic background (see Appendix A).

Procedure

Subjects were tested in groups. The complete task of answering the questionnaires took between 30 minutes and 2 hours, depending on the length of descriptions given and the time subjects needed to think about, formulate, and write down their descriptions. Before and again after the task subjects were assured that all information they gave would be handled anonymously and that no information in whatever form would be published or used if it might allow easy identification of the subject.

Coding of Questionnaire Items

Codes were developed for all open-ended questions, especially for the antecedents of emotional experiences and for the reported reactions and symptoms.

Antecedent Codes. An attempt was made to code themes applicable to all four emotions (e.g., "relationships with friends" or "achievement-related situations"; for details of the code development see Ellgring & Baenninger-Huber, 1986). Some categories specific to only one emotion, however, had to be introduced (see Appendix B). Reliability for antecedent coding was calculated using two coders in each of the participating European countries, who coded 20 questionnaires each. Overall, this reliability within and across countries are about 80%. The persons employed to code the Japanese and the U.S. questionnaires were trained on the basis of 80 sample situations to which an expert code had been assigned by several European coders. For later statistical analyses codings were grouped into larger, less specific categories.

Physiological Symptoms and Nonverbal Reactions. The open-ended reports on physiological symptoms and nonverbal reactions required a quite

extensive coding system. Using a modality approach we distinguished between vocal and nonvocal reactions, with further classifications for facial expression, gaze, and body part movements, and more specific subcategories within each of these modalities. Physiological symptoms were also classified using a hierarchical system with different modalities (skin symptoms, temperature symptoms, stomach symptoms, etc.), with more specific subclassifications. The total code included about five hundred single categories (for a detailed description see Scherer et al., 1986). Reliability studies here resulted in an average reliability of about 70%, which becomes larger when specific codes are combined according to modalities.

Coding of Other Responses. Other parts of the questionnaire required simpler coding systems, inasmuch as only a few categories were necessary for classification:

- Location of the event (inside, known: inside, unknown: outside).
- Other persons involved (group size: alone, dyad, small group, large group; familiarity with persons involved: familiar, unfamiliar).
- Duration of feeling (under 5 minutes, up to 1 hour, up to a day, longer than 1 day).
- Verbal behavior (saying nothing; affect exclamation; short utterance; long utterance; discussion).

Data obtained via scales (intensity of feeling, amount of control of verbal behavior and of reactions/symptoms) were used as reported by the subjects themselves.

RESULTS

It should again be noted that the data presented are based on subjective recall of situations and reactions. To what extent such reports reflect objective events depends on a number of factors. The initial storage of emotional events in memory as well as recall and report may be influenced by factors like ego-involvement or defense mechanisms. Furthermore, general inference tendencies, such as the "availability," "representativeness," and "vividness" heuristics may interfere (see Nisbett & Ross, 1980; Scherer & Tannenbaum, 1986; Tversky & Kahneman, 1974). Certain situations may be more "available" than others, depending on the subject's state when reporting or on situational factors. Subjects may report situations and reactions they consider as being "representative" for certain emotions. Some situations may be more "vivid" than others and thus more easily recalled.

While these potential sources of influence on the situations available for self-report are acknowledged, we believe not that the reports themselves are purposively falsified or inaccurate, given subjects' motivation in such studies (see Magnusson & Stattin, 1981), but that they largely reflect the respondents' subjective experience of emotion-eliciting situations and emotional reactions.

In order to sequentially discuss antecedents, reactions, and control attempts, we follow the order of the questions as they occurred in the questionnaire.

Relative Incidence of Different Emotions

Although we have no direct data concerning the relative incidence of joy, fear, anger, and sadness, subjects' responses to "How long ago did the situation happen?" allow us to speculate about the incidences of these emotions. It is not unlikely that the further back in time subjects need to go to recall a situation (in which a particular emotion has been experienced with an intensity high enough to remain in long-term memory), the less frequently this type of emotion occurs. On the basis of the European data, the following rank ordering of emotions in terms of most frequent to least frequent had been suggested: anger > joy > sadness > fear (Scherer, 1986b). Our data, however, indicate that this detailed ranking cannot be maintained, inasmuch as no significant linear trend was found within each of the cultures. Post-hoc comparisons did show, though, that anger and joy situations were significantly more recent than fear and sadness situation (see Table 1.1).

TABLE 1.1
How Long Ago

(means)	Europe	Japan	USA	mean	df	F	p	Newman-Keuls
Joy	3.83	3.26	3.48	3.52	2/502	13.38	.0000	JAP < USA < EUR
Sadness	4.07	3.31	3.93	3.78	2/492	22.16	.0000	JAP < EUR = USA
Fear	4.03	3.30	3.85	3.73	2/487	18.56	.0000	JAP < EUR = USA
Anger	3.68	3.19	3.42	3.43	2/497	10.12	.0000	JAP < USA < EUR
Average	3.80	3.16	3.61	3.44	2/507	31.55	.0000	JAP < USA < EUR
Across emotions:								
df	3/687	3/670	3/645	3/2010				
F	3.61	n.s.	7.57	10.00				
p	.0131		.0001	.0000				
Newman-Keuls				Joy = Anger < Fear = Sad				
				Joy = Anger < Fear = Sad				

				Anger < Sad				

Post-hoc analyses also indicated several interesting cultural differences. Across emotions, the situations reported by Europeans are longest ago, followed by the United States and Japan. This pattern was also repeated within each of the emotions separately. These data suggest that the Japanese need not go back into the past as far as the Europeans and Americans to find emotional situations with sufficient intensity for recall. These differences are particularly noticeable for sadness and fear.

The Nature of Antecedent Events

Although we had no formal hypotheses, we did expect that events that were important in Europe for certain emotions would be important in Japan and the United States as well. We also expected little difference in the rank order of antecedent events per emotion because there were few differences among the European countries in terms of the relative frequency of the various event classes. The data, however, show that the nature and pattern of antecedent events across our three cultures were quite different (see Table 1.2), with the major differences arising from the Japanese sample, the American and European samples being somewhat similar. In many cases certain types of situations that are very important in Europe and the United States are not very frequent in Japan. Yet some situations that frequently determine emotions in Japan are also important antecedents in Europe and the United States. Let us look at these differences in more detail.

Joy/Happiness. Cultural pleasures, birth of a new family member, and body-centered "basic pleasures," which were important antecedents for joy in Europe and the United States, are less frequently sources for joy in Japan. The relative insignificance of bodily pleasure seems to underline the stereotypical notion of the Japanese as a sober, hardworking, and at times somewhat ascetic people. Our finding that the birth of a new family member was less a source of joy for the Japanese subjects may be related to the observation that to older children, the birth of younger siblings threatens an already strong parent-child bond. Thus in Japanese society the birth of a younger sibling may represent an event that separates older children from their parents' care and love, much more so than in other cultures.

Achievement-related joy situations were also much more frequent in the United States and Europe than in Japan. As we shall see later, achievement seems to be equally important in the United States and Japan, but in Japan there is oftentimes more pressure for achievement, (for example, success in examinations)—and possibly higher expectations for success—both by the person and the social environment. Also in Japan there

TABLE 1.2
Major Antecedents Reported for the Four Emotions^a

(in %)	Europe	Japan	USA	Chi2	p
JOY					
News	9.9	4.6	10.3	4.61	.1000
Relationships	29.4	33.3	23.6	3.91	.1415
Social Institutions	4.7	.6	10.3	16.57	.0003
Temporary meetings	19.6	13.2	17.6	2.66	.2646
Birth	8.3	.6	6.1	11.69	.0029
Body	12.8	2.9	16.4	17.68	.0001
Achievement	16.0	13.8	26.1	9.49	.0087
SADNESS					
News	9.5	2.3	14.5	16.25	.0003
Relationships	27.1	36.2	20.0	11.14	.0038
Temporary separation	6.5	2.3	12.7	14.09	.0009
Permanent separation	8.9	2.3	12.1	12.04	.0024
Death	22.2	5.2	22.4	24.49	.0000
Body	10.1	5.2	10.3	3.76	.1525
FEAR					
Relationships	4.6	9.8	3.6	6.53	.0381
Death	6.5	6.9	4.2	1.25	.5346
Body	7.2	4.6	3.0	3.16	.2063
Strangers	14.9	5.2	20.0	16.84	.0002
Achievement	11.7	16.7	18.8	3.41	.1821
Supernatural	3.9	4.6	6.7	1.50	.4734
Risky situations	11.2	5.2	14.5	8.37	.0152
Traffic	20.0	14.4	11.5	4.88	.0871
Novel situations	14.5	17.2	13.3	1.07	.5848
ANGER					
Relationships	38.5	29.3	58.2	30.13	.0000
Strangers	19.9	52.3	14.5	69.20	.0000
Achievement	6.7	10.3	8.5	1.49	.4739
Injustice	20.9	4.0	20.6	25.15	.0000
Inconvenience	8.5	9.8	6.1	1.60	.4496

^a (listed only if at least 5% in at least one sample)

are implicit and subtle rules that inhibit joy reactions to personal success, (while supporting such reactions to group-oriented achievements).

Sadness/Grief. For sadness experiences we find significant differences among the cultures of almost every class of antecedent event. Most striking is the difference for sadness experiences provoked by the death of a family member or a close friend. Whereas both in Europe and in the United States such events account for about 1/5 of all sadness experiences, only one in twenty sadness situations in Japan is due to death. This striking difference may be traced back to differences in Japanese religious activities, particularly to the Shinto-Buddhist rules of veneration of ancestors,

and the different connotations death may have for the Japanese. Japanese, of course, mourn the loss of loved ones much the same way as people in other countries do. In the Japanese culture, however, while a person may die, the person's soul always remains with and is protected by his or her family. Thus the emotion of sadness in response to death is often replaced by the consciousness that the deceased is always with the family.

We find other cultural differences in emotions due to problems with relationships and temporary or permanent separation, with Japan and the United States at the extreme ends and Europe in the middle. Sadness due to relationship problems is particularly common in Japan. In contrast, the Japanese seem less frequently saddened by both temporary and permanent separation, particularly in comparison with Americans. A possible interpretation is that separations from persons with whom one is involved in a close relationship are most frequent in the United States, less frequent in Europe, and least frequent in Japan. This could be due both to more restricted geographical mobility in Japan and at least some parts of Europe (particularly outside of the big cities) and to differences in the closeness and permanence of relationships. While in the United States, particularly in California and certainly in Berkeley (i.e., for half of our U.S. sample), the breaking up of relationships and the forming of new ones are rather frequent phenomena, this may be much less the case in Japan and the small-town cultures of Europe. This would explain why sadness would tend to be based on events that happen *within* the relationships rather than due to a separation in the latter two cultures.

Another difference appears in the results for world news. Whereas the Japanese subjects are rarely saddened by world events, European and especially American subjects are. It is highly unlikely that this is due to a differential incidence of world news relevant for the different samples, although it may be the case that the number of hijackings, hostage crises, and crime reports are somewhat more copious for the American population than for Japan and Europe. Another possibility is that Americans tend toward higher empathy with the victims of catastrophes of various sorts. The general level of national participation and awareness in cases such as hostage crises (e.g., flying flags, candles in the windows) may provide some indication for this. This finding may also be influenced by the Japanese's heavy reliance on immediate personal relationships, given their group orientation, thus making the influence of the happenings of people outside their group less immediate.

Fear/Anxiety. The largest cultural differences in the antecedents for fear arose in three antecedent categories: stranger fear, risky situations, and relationships. For the American subjects stranger fear was the most frequent category, followed by fear of failure in achievement situations. For

the Europeans, too, it is a rather sizable category, second only to fear of traffic accidents. For the Japanese subjects, however, fear of strangers is almost insignificant, dwarfed by fear of novel situations, fear of failure in achievement situations, and fear of traffic. These findings are most likely related to the differential incidence of threatening events in each of our cultures. The incidence of crime is likely to be higher in U.S. urban areas than in many European countries and certainly than in Japan. In the original European study we found that this category differs rather widely depending on whether subjects live in a major metropolitan area or in small university towns (see Scherer et al., 1986). Given the relatively low incidence of crime and stranger aggression in Japanese society, it would seem reasonable to expect that this situation be less the cause of fear than in the United States or Europe.

Another interesting difference is the low incidence of fear following involvement in risky situations in Japan. In most of the situations reported this is related to events encountered during the pursuit of a rather risky activity, such as certain sports. Most likely Japanese students engage more rarely in risky activities than their European and particularly American counterparts, especially when alone or individually rather than when they are in groups.

One category for which there is a much higher anxiety incidence for the Japanese students is relationship-produced fear, for example, fear of hurting or angering one's parents or lover. This finding probably reflects the Japanese's constant monitoring and regulation of social relationships, particularly vis-à-vis social transgressions. Japanese are often overly concerned with the people around them, and this constant monitoring may easily be much more an antecedent of fear or, more specifically, anxiety, than in our other two cultures.

Anger/Rage. The Japanese were again radically different from the Europeans and the Americans in their anger antecedents. In general, Japanese students are much more readily angered by strangers than by problems in relationships with known others, whereas the opposite is true for Europeans and particularly for Americans. The U.S. students experience almost 60% of their anger situations due to some kind of problem in their relationships. Anger due to the behavior of strangers, however, is limited to about 15%, in Europe 20%. But in Japan, more than half of the anger situations were produced by the behavior of strangers. One speculation to account for these findings might be that the social norms for behavior in relationships with relatives, friends, and acquaintances are more highly structured and readily obeyed in Japan, making it less likely that a breach of these norms leads to anger outbursts. Even in situations where a social transgression has been made in Japan, oftentimes the situation dictates

TABLE 1.3
Frequency of Antecedents Across Emotions^a

<i>mean</i>	<i>Europe</i>	<i>Japan</i>	<i>USA</i>	<i>F</i>	<i>df</i>	<i>p</i>	<i>Newman-Keuls</i>
News	.26	.10	.33	9.25	2/507	.0001	USA = EUR > JAP
Relations	1.00	1.09	1.06			n.s.	
Institutions	.11	.03	.16	6.94	2/507	.0011	USA = EUR > JAP
Temporary	.28	.16	.35	7.00	2/507	.001	USA = EUR > JAP
Permanent	.10	.02	.15	7.66	2/507	.0005	USA = EUR > JAP
Death/birth	.38	.13	.35	12.11	2/507	.0000	USA = EUR > JAP
Body	.32	.14	.32	7.10	2/507	.0009	USA = EUR > JAP
Strangers	.38	.59	.38	7.53	2/507	.0006	JAP > USA = EUR
Achievement	.42	.71	.64	7.01	2/507	.001	JAP = USA > EUR
Risky situations	.11	.06	.15	4.23	2/507	.0151	USA > JAP
Supernatural	.04	.05	.07			n.s.	
Traffic	.20	.14	.12	2.45	2/507	.0875	
Novel situations	.15	.17	.13			n.s.	
Inconvenience	.09	.10	.06			n.s.	
Injustice	.21	.04	.21	13.13	2/507	.0000	USA = EUR > JAP

^a (summed per subject: NEWS = JNEWS + SNEWS + FNEWS + ANEWS, etc.)

that one not get angry, or at least not show his or her anger (see results on emotion control attempts in a later section). Because relationships in the United States and Europe lack such firmly prescribed rules for the obligations of partners, relationships can more easily lead to anger, particularly if the solution of terminating the relationship is a viable one.

Another major difference concerns situations of injustice. Whereas these provoke anger in about 20% of the cases in both Europe and the United States, they account for only 4% of the Japanese anger situations. This could be due to the possibility that in Japan the rules of justice are more strictly applied in behavior, giving less rise to anger because of infrequent violations of the justice principle. Also, in actual anger-provoking situations of injustice, the actual expression of anger in Japanese society is often considered immature. Although our data do not allow us to address this point directly, the issue should be of major interest to researchers studying the social psychology of justice.

Because many classes of antecedents (e.g., relationships, achievement) were found as being important for all of the emotions, we examined these categories collapsing across emotions. We calculated the number of instances subjects mentioned these categories across all emotions (see Table 1.3). As one might expect, significant differences usually arose between the Japanese on the one hand and Americans and Europeans on the other. The Japanese mentioned significantly fewer news, separation, birth/death, and body-related but more stranger-related situations than subjects in the other countries. In only one category, achievement-related situations, did

TABLE 1.5
Other Persons Involved in the Situation

<i>Group Size</i>					
<i>(in %)</i>	<i>Europe</i>	<i>Japan</i>	<i>USA</i>	<i>mean</i>	
JOY					
Alone	11.6	10.9	20.2	14.2	
Dyad	47.7	60.3	43.6	50.5	
Small group	36.8	28.7	32.5	32.7	Chi2 = 19.79
Large group	3.9	—	3.7	2.5	p = .0030
SADNESS					
Alone	18.0	20.0	23.9	20.6	
Dyad	44.9	55.3	40.5	46.9	
Small group	33.8	24.7	34.4	31.0	Chi2 = 14.94
Large group	3.3	—	1.2	1.5	p = .0207
FEAR					
Alone	31.2	31.7	33.5	32.1	
Dyad	33.8	47.3	32.9	38.0	
Small group	29.2	21.0	28.0	26.1	Chi2 = 17.81
Large group	5.7	—	5.5	3.7	p = .0067
ANGER					
Alone	7.9	4.1	6.1	6.0	
Dyad	43.3	60.0	57.1	53.5	
Small group	44.1	35.9	34.4	38.1	Chi2 = 17.24
Large group	4.7	—	2.5	2.4	p = .0084
Mean across emotions:					
Alone	17.2	16.7	20.9		
Dyad	42.4	55.7	43.5		
Small group	36.0	27.6	32.3		
Large group	4.4	—	3.2		
Familiarity					
<i>(in %)</i>	<i>Europe</i>	<i>Japan</i>	<i>USA</i>	<i>mean</i>	
JOY					
Unfamiliar	19.0	12.6	31.9	21.2	Chi2 = 19.41
Familiar	81.0	87.4	68.1	78.8	p = .0001
SADNESS					
Unfamiliar	26.0	22.9	26.4	25.1	Chi2 = .64
Familiar	74.0	77.1	73.6	74.9	p = .7266
FEAR					
Unfamiliar	53.5	43.1	55.5	50.7	Chi2 = 5.89
Familiar	46.5	56.9	44.5	49.3	p = .0527
ANGER					
Unfamiliar	23.4	18.2	18.4	20.0	Chi2 = 1.83
Familiar	76.6	81.8	81.6	80.0	p = .4012
Mean across emotions:					
Unfamiliar	30.5	24.2	33.1		
Familiar	69.5	75.8	66.9		

and emotions (see Ekman, 1984). In the original European study we found very stable and highly significant differences in duration between the different emotions and a set of detailed predictions were developed, which we cite verbatim:

- Fear is predicted to last from a few seconds up to a maximum of an hour. The assumption underlying this hypothesis is that fear is an emergency response par excellence which is usually provoked by an immediate stimulus event requiring flight or submission to the aversive consequences. It is likely, then, that this very high intensity emotion will be rather short-lived and could not be endured for longer periods of time. Obviously, this is not true for anxiety. (For a discussion of the conceptual differences between fear and anxiety see Gaylin, 1979, pp. 16–19.)

- Anger is predicted to last from a few minutes up to a maximum of a few hours. The assumption is that this emotion is fairly transient, since it is mostly related to discrete events that require either coping or internal adaptation. It would seem unlikely that anger will persist if the person is no longer exposed to its object or constantly reminded of it.

- Joy is predicted to last from about an hour to a maximum of a day. It is expected that joy is a more lasting emotion because of the significant concerns relating to the self or to salient relationships.

- Sadness is predicted to last from about a day to several days, given the fact that in most cases important relationship concerns underlie the occurrence of this emotion, and that extensive “grief work” is required to adapt to the changed situation.

The data from the present study show that these predictions are rather well supported (Table 1.6); the rank order of the emotions in terms of duration—fear < anger < joy < sadness—is exactly as predicted. Furthermore, the parametric predictions in terms of the expected length in terms of minutes, hours, and days are also supported—grosso modo—by the results, with the possible exception of joy, which frequently seems to last longer than a day. These data support the notion that there is a definite time course for each emotion (see Scherer, 1986b, pp. 180–181). These data allow for interesting speculations concerning deviations from this “normal” time course in affective disorders or stress response (see Scherer, 1986c).

There were, however, some significant intercultural differences, with the American subjects deviating from the pattern of the European and Japanese students. American students, particularly for fear and anger, report consistently longer durations for their emotional feelings (see Table 1.6). In the next section we discuss these findings in more detail.

TABLE 1.6
Duration of Emotion

(means)	Europe	Japan	USA	mean	df	F	p	Newman-Keuls
Joy	3.12	3.31	3.41	3.28	2/501	2.87	.0574	---
Sadness	3.41	3.31	3.59	3.44	2/498	2.67	.0702	---
Fear	2.20	2.34	2.55	2.33	2/495	3.39	.0344	USA > EUR
Anger	2.61	2.85	3.14	2.87	2/498	8.13	.0003	USA > EUR = JAP
Average	2.78	2.89	3.13	2.93	2/507	11.18	.0000	USA > EUR = JAP
Across emotions:								
df	3/698	3/676	3/648	3/2030				
F	45.09	22.09	29.30	89.65				
p	.0000	.0000	.0000	.0000				
Newman-Keuls								Fear < Anger < Joy = Sad
								Fear < Anger < Joy = Sad
								Fear < Anger < Joy = Sad
								Fear < Anger < Joy = Sad

(1 = under five minutes, 2 = up to one hour, 3 = up to one day, 4 = several days)

Intensity of Emotional Feelings. It was hypothesized that anger would be experienced less intensely than the other emotions (see Wallbott & Scherer, 1985a, for a discussion of possible mediating factors for this finding). The data from this study suggest that, as predicted, anger is the emotion with the lowest overall intensity (Table 1.7). This finding is supported by recent results obtained by Dore and Kirouac (1986), who found

TABLE 1.7
Intensity of Emotion

(means)	Europe	Japan	USA	mean	df	F	p	Newman-Keuls
Joy	7.33	7.34	7.77	7.48	2/495	4.10	.0172	USA > EUR = JAP
Sadness	7.37	7.24	7.61	7.41	2/492	1.79	.1685	---
Fear	7.38	6.83	7.33	7.18	2/488	4.19	.0158	JAP < EUR = USA
Anger	6.97	6.71	7.54	7.07	2/495	9.37	.0001	USA > EUR = JAP
Average	6.93	6.86	7.42	7.07	2/507	8.08	.0003	USA > EUR = JAP
Across emotions:								
df	3/684	3/675	3/644	3/2011				
F	n.s.	4.42	n.s.	6.04				
p		.0044		.0004				
Newman-Keuls								Anger = Fear < Joy = Sad

								Anger < Joy = Sad
								Fear < Joy

that descriptions of anger-eliciting situations were judged as being of lower intensity than sadness situations, followed by fear and joy/happiness situations with the highest intensity. Contrary to what we expected, however, fear intensity was also somewhat lower than joy and sadness, particularly in Japan. In contrast, the American students differ from the Europeans and Japanese on joy and anger, where they reported consistently higher intensities. The lower fear intensities in Japan might be due to the fact that the fear of crime, which seems to lead to fairly high fear intensities, is less pronounced there, and that there might still be more of a feeling of being safe in a network of social support. It is difficult to see why American subjects report higher intensities throughout, particularly for joy and anger. These findings may be attributable to either a higher emotionality or emotional responsivity on the part of the American subjects.

Verbal Expression of Emotion. We predicted that joy and anger would be associated with more extensive verbal responses than sadness and fear, since joy and anger are often elicited by others and are often experienced in social settings that would encourage a greater degree of verbalization, contrary to sadness and fear. The present findings again support this hypothesis (Table 1.8), with anger and joy being significantly more verbal in comparison to sadness and particularly fear. The only significant intercultural difference is found for joy. Here the Japanese students seem to be much more verbal than either the American or European students.

Nonverbal Expressions of Emotion. We used an open-ended format to

TABLE 1.8
Amount of Verbal Behavior

(means)	Europe	Japan	USA	mean	df	F	p	Newman-Keuls
Joy	2.24	2.62	2.31	2.43	2/480	10.56	.0000	JAP > EUR = USA
Sadness	1.94	2.15	2.13	2.07	2/479	2.30	.1009	---
Fear	1.77	1.99	1.90	1.89	2/477	2.34	.0970	---
Anger	2.33	2.39	2.35	2.36	2/492	.18	.8323	---
Average	1.91	2.23	2.07	2.07	2/507	13.76	.0000	JAP > USA > EUR
Across emotions:								
df	3/655	3/675	3/625	3/1963				
F	9.88	14.69	8.53	29.36				
p	.0000	.0000	.0000	.0000				
Newman-Keuls								Joy = Anger > Sad > Fear
								Joy = Anger = Sad > Fear
								Joy > Anger > Sad = Fear
								Joy = Anger > Sad = Fear

collect information about the type of nonverbal behavior the respondents remembered to have shown. As one would expect with such a response format, the actual frequency of reported behavior patterns was rather low (about one reaction coded per emotion on the average). Because precoded answer alternatives were not used, subjects were not reminded of behavior patterns that do not come readily to mind; or, subjects may have been too lazy to write extensive descriptions of their nonverbal behavior. Another important possibility is that they did not readily find a convenient verbal label to use as a description of what happened.

Given the low response frequency, and the fact that no detailed predictions for nonverbal behavior had been made on the basis of the earlier studies, mainly because it was difficult to infer the specific nature of a nonverbal act from the questionnaire descriptions, we differentiated only fairly gross types of behavior, such as facial or vocal symptoms (discrete acts) or quality changes, without further specification. These data also show a pattern similar to the qualitative summary presented earlier (Scherer, 1986b, pp. 182-183). For example, as one might expect, we found laughing and smiling, and a little bit of crying for joy, and a lot of crying for sadness. Joy leads to approach behavior and expansiveness in nonverbal gesturing, whereas fear often leads to freezing of nonverbal behavior. Expressive hand movements can be found for all emotions except sadness, which seems to indicate the very passive nature of this emotion, with generally reduced nonverbal activity.

As in our earlier study (see Scherer, Wallbott, & Summerfield, 1986), the most important nonverbal channels for emotional expression were the face and voice. In order to analyze intercultural differences, we combined the codes to major modalities or channels (Table 1.9). Gaze reactions are very rarely mentioned overall and will thus not be considered. Across all emotions the Japanese students reported many fewer body part reactions (mostly hand and arm gestures) and whole body reactions than the Europeans and Americans. These data indicate that the Japanese were less expressive in terms of gross motor activity and gesturing. Across all emotions, American subjects were somewhat more expressive in body part reactions (e.g., gesturing) than the Europeans and, of course, the Japanese, although this finding was statistically weaker.

Except for the case of joy, the Japanese also report fewer voice reactions than the Americans and Europeans, indicating that their emotional expressions tend to be generally more silent than in the other two cultures. There were, however, no differences in facial reactions between the Japanese students and the other two cultures for each of the emotions separately. But across all emotions we found that American subjects reported significantly more facial reactions than the Europeans, again suggesting a high degree of expressiveness.

TABLE 1.9
Combined Nonverbal Reaction Modalities

(mean no. mentioned)	Europe	Japan	USA	Chi2	p
JOY					
Voice reactions	.19	.16	.13	2.99	.5600
Face reactions	.48	.60	.62	14.11	.0284
Gaze reactions	.02	.02	.03	.70	.7036
Body part react.	.19	.12	.29	15.19	.0042
Whole body react.	.09	.05	.12	6.00	.1989
SADNESS					
Voice reactions	.19	.12	.16	3.64	.4569
Face reactions	.44	.35	.55	14.92	.0049
Gaze reactions	.03	.04	.04	.13	.9367
Body part react.	.09	.01	.12	16.84	.0021
Whole body react.	.04	—	.06	9.97	.0409
FEAR					
Voice reactions	.16	.02	.13	18.40	.0010
Face reactions	.16	.21	.21	6.81	.1463
Gaze reactions	.04	.04	.06	1.24	.5382
Body part react.	.14	—	.24	40.51	.0000
Whole body react.	.14	—	.14	27.28	.0001
ANGER					
Voice reactions	.33	.21	.30	8.97	.1752
Face reactions	.29	.32	.33	2.91	.8197
Gaze reactions	.04	.09	.07	3.60	.1651
Body part reactions	.28	.12	.29	19.45	.0035
Whole body react.	.08	—	.09	17.20	.0018
SUMMED ACROSS EMOTIONS					
Voice reactions	.85	.51	.73	19.37	.0358
Face reactions	1.39	1.48	1.72	16.46	.1709
Gaze reactions	.12	.18	.20	4.71	.7880
Body part reactions	.71	.24	.93	62.26	.0000
Whole body react.	.37	.05	.41	44.81	.0000

The general picture emerging from these data indicates that the Japanese students have a comparatively low degree of emotional expressiveness, manifesting their reaction mostly in the face except for instances of joy and anger, where there are some voice reactions (although much lower, particularly in anger than in the other two cultures). These findings are most likely attributable to Japanese people's tendency to control emotional reactions in social situations (cf. Ekman, 1973). Americans were highly expressive compared to the other two cultures, particularly in the visual domain, facial expression, and gesturing. Unfortunately, our data do not allow us to differentiate between different sources of these differences, that is, differential physiologically based response tendencies, culturally prescribed display rules for expressive behavior, or differen-

tial reporting tendencies. There can be little doubt, however, that factors related to the communication of emotion in terms of signaling function and the cultural frame provided for this are likely to play a major role.

Physiological Reactions to Emotional Arousal. Our data obviously cannot provide direct evidence relevant to the continuing debate concerning whether emotions are differentiated in terms of specific physiological response patterns. Nevertheless, it is still of interest to compare the findings from physiological studies with self-report of perceived physiological symptoms. Although there are reports of fairly low accuracy in the self-perception of physiological changes, (e.g., Pennebaker, 1982), these are difficult to evaluate because emotions induced in many of the laboratory studies are neither very intense nor very specific. Because it is possible that only fairly extreme physiological changes are accurately monitored and labeled by lay persons, it would seem that such studies do not yet settle the issue. In any case, it would certainly strengthen the argument for physiological differentiation of emotion if one were to find very similar patterns in self-report as in studies using physiological assessment.

In the concluding chapter in the monograph on the earlier studies, Scherer proposed a prediction table for differential physiological reactions for the four emotions studies, based on claims in the literature as well as the results of the European questionnaire study (Table 1.10). A + stands for a predicted increase, a - for a predicted decrease of the respective symptom group, with ? indicating that no prediction is ventured at this point. (The *A* and *J* characters in parentheses will be explained in the following paragraphs.)

Because we again had the problem of low response frequency in our physiological categories, we have combined a number of the more specific codes that we used in coding the responses (Table 1.11), rendering both the prediction and the data less specific than one might wish. Even at this degree of specificity, however, there is clear differentiation for the four emotions under study.

We first examined whether the American and Japanese data separately support the predictions. Given the low response rates, we considered

TABLE 1.10
Predictions of Physiological Changes for Emotions

Symptoms	Joy	Sadness	Fear	Anger
Cardiovascular activity	+ A	?	+ A	+
Striated muscle tone	+ A	- A	+ JA	+ A
Gastric disturbance	0	+ A	+ A	+ A
Skin temperature	+ J	0	-	+ JA

TABLE 1.11
Physiological Symptoms and General Sensations^a

(in %)	Europe	Japan	USA	Chi2	p
JOY					
Pleasant rest	19.1	2.9	15.8	23.23	.0000
Pleasant arousal	13.4	4.0	14.5	12.06	.0024
Feeling warm	7.4	5.2	8.5	1.50	.4718
Blood pressure	9.1	1.1	4.8	11.50	.0032
Stomach troubles	4.6	—	6.7	11.14	.0038
Muscle symptoms	9.1	—	9.1	16.85	.0002
SADNESS					
Unpleasant rest	14.4	14.4	17.0	.58	.7468
Unpleasant arousal	5.6	—	9.1	15.58	.0004
Stomach troubles	13.1	—	22.4	41.91	.0000
Muscle symptoms	17.7	—	20.0	37.82	.0000
FEAR					
Unpleasant arousal	14.4	3.4	16.4	16.55	.0003
Feeling cold	8.9	—	4.8	15.68	.0004
Perspiration	7.1	4.6	6.7	1.06	.5901
Blood pressure	18.9	—	16.4	35.25	.0000
Stomach troubles	20.5	—	21.2	42.14	.0000
Muscle symptoms	37.6	16.1	38.2	25.74	.0000
ANGER					
Unpleasant arousal	14.9	15.5	8.5	4.48	.1064
Feeling warm	9.8	4.0	10.9	6.21	.0448
Blood pressure	6.7	1.1	4.8	6.81	.0333
Stomach troubles	9.4	—	18.8	35.72	.0000
Muscle symptoms	19.8	—	20.6	40.55	.0000

^a (listed only if at least 5% in at least one sample)

response categories with frequency $\geq 10\%$ to be of interest. Using this criterion we entered either a *J* or *A* into the prediction table (Table 10) where the number of respondents mentioning the respective symptom indicated more than chance fluctuation. The American data support a large number of the predictions, whereas the Japanese data provide support in only three cases. This, however, is due to the fact that the Japanese report substantially fewer physiological symptoms across all emotions. The fact that the Japanese respondents only rarely indicated physiological responses formed the basis for our strongest intercultural difference.

The same pattern is true for the report of unspecific sensations, such as pleasant or unpleasant arousal or rest states. While the American and the European students are very similar in this respect (Table 1.11), the Japanese students, except in the case of anger, report such sensations much more infrequently.

In general we found that Japanese students report fewer physiological symptoms, whereas the European and American data are very parallel. These data are most likely not attributable to strong biological differences between the Japanese and the Europeans and Americans; it is also difficult to see how culturally prescribed display rules or feeling rules might affect the incidence of such physiological reactions. Thus we believe that these results are due to a differential reporting tendency, which in fact may be related to display rules in the sense of attempting to control the appearance of arousal (see results on emotion control in the next section).

The Control of Emotional Reactions. As predicted earlier (Scherer, 1986b), the respondents indicated that they attempted to control sadness, fear, and anger in the verbal, nonverbal, and physiological modalities, whereas they did not try to do so for joy (Table 1.12). This suggests that the negative emotions are much more culturally regulated than the positive emotions. Within the three negative emotions there is also a rank ordering in terms of the severity of control for verbal behavior, although these differences do not quite reach significance for the control of reactions: anger is controlled most, with sadness and fear following. We found a striking and significant difference in a post hoc comparison for anger. As in our earlier studies (see Scherer et al., 1986), we found that anger is strongly controlled in the verbal modality. This is not surprising, since anger is the most socially relevant of the four emotions, with a high amount of verbalization (see above), and given the possibility of an escalation of conflict upon verbal anger display.

In line with the stereotypical notions about Japanese society we had expected very strong differences for Japan in this respect. For joy, sadness, and fear, however, there are no significant differences at all between the three cultures. For anger there is a significant difference, but it separates Europe on the one hand from America and Japan on the other, control of anger being significantly higher in all modalities for the latter two cultures. It seems, then, that anger is only moderately controlled in Europe, particularly in the verbal channel (much less in the nonverbal and physiological areas), whereas it seems to be very strongly sanctioned in Japan and the United States.

CONCLUSIONS

The most immediate impression produced by the pattern of data in this study is the surprising degree of confirmation of the predictions based on earlier results. As far as self-report of emotional experience is concerned, the following findings were replicated in two European studies

TABLE 1.12
Control of Symptoms/Reactions and of Verbal Behavior

<i>Symptoms/Reactions</i>								
<i>(means)</i>	<i>Europe</i>	<i>Japan</i>	<i>USA</i>	<i>mean</i>	<i>df</i>	<i>F</i>	<i>p</i>	<i>Newman-Keuls</i>
Joy	1.58	2.07	2.13	1.89	2/496	2.23	.1086	—
Sadness	3.49	4.28	3.85	3.87	2/485	2.46	.0866	—
Fear	3.78	3.26	3.64	3.56	2/479	1.07	.3440	—
Anger	3.52	4.42	4.39	4.10	2/492	4.43	.0124	EUR < USA = JAP
Average	2.93	3.37	3.41	3.20	2/507	3.61	.0277	EUR < USA = JAP
Across emotions:								
df	3/684	3/666	3/639	3/1997				
F	21.59	21.36	16.20	52.43				
p	.0000	.0000	.0000	.0000				
Newman-Keuls	Joy < Fear = Anger = Sad							
	Joy < Fear = Anger = Sad							
	Joy < Fear < Anger = Sad							
	Joy < Fear = Anger = Sad							
<i>Verbal Behavior</i>								
<i>(means)</i>	<i>Europe</i>	<i>Japan</i>	<i>USA</i>	<i>mean</i>	<i>df</i>	<i>F</i>	<i>p</i>	<i>Newman-Keuls</i>
Joy	1.92	1.66	2.13	1.90	2/495	1.56	.2107	—
Sadness	3.99	4.25	4.39	4.21	2/472	.56	.5734	—
Fear	3.50	3.50	3.63	3.54	2/460	.06	.9377	—
Anger	4.45	5.14	5.57	5.05	2/494	5.61	.0039	EUR < USA = JAP
Average	3.19	3.49	3.76	3.45	2/507	4.09	.0173	USA > EUR
Across emotions:								
df	3/665	3/667	3/626	3/1966				
F	20.53	42.17	34.03	9070				
p	.0000	.0000	.0000	.0000				
Newman-Keuls	Joy < Fear < Sad < Anger							
	Joy < Fear < Sad < Anger							
	Joy < Fear < Sad < Anger							
	Joy < Fear = Sad = Anger							

(Scherer et al., 1983; Scherer et al., 1986) as well as in the American and Japanese samples investigated in the present study:

- Anger and joy situations recalled by the subjects tend to be more recent than sadness and fear situations.
- The differences in the nature of the respective eliciting situations tend to be rather stable. Furthermore, there is some replication for the rank ordering of the relative importance of subcategories of antecedent situations for each emotion (even though there are major differences for Japan, see following sections).

- There are clear differences in the average duration of the respective emotions: fear < anger < joy < sadness. Not only this rank order but also the magnitudes of average duration are well replicated.
- The intensity of subjectively experienced anger tends to be lower than that of fear, joy, and sadness.
- Anger and joy produce more verbalization, and may thus represent somewhat more "social" emotions as compared to sadness and fear.
- There seem to be highly differentiated patterns of self-perceived nonverbal reactions and physiological symptoms for the four emotions studied here. The amount of replication is all the more impressive given that open-ended questions without prompting were used.
- The effort to control the emotion is lower in joy than for the three negative emotions.

Although only self-report of subjective experience has been studied here, the strong degree of convergence of the data from many different cultures might well be considered as supporting the notion of universal, biologically based differences between individual emotions. At the same time, however, the importance of social-interactional factors in both the elicitation of and the reaction to certain emotional states cannot be emphasized too strongly.

These social factors, while present in all of the national samples studied, become more pronounced when intercultural differences are examined. Whereas the earlier studies of eight European countries yielded surprisingly few cultural differences, the comparison between Japan, the United States, and Europe suggests some rather pronounced differences. Many of these distinguish Japanese experiences from European and American, which tend to be more similar. This is particularly true for the nature of antecedent situations: Japanese subjects reported less body-related joy, fewer death- and separation-induced sadness episodes, less stranger-induced fear but much more stranger-induced anger, and fewer anger episodes produced by perceived injustice. The origins of these differences can only be guessed at the present time. Possible causes implicate cultural values, norms, and interactional practices but also demographic and socio-economic factors, as well as the frequency of certain types of events, such as crime.

Apart from elicitation factors, differential reaction patterns are another major domain of intercultural differences. Here we find a spread between all three cultures on a continuum from low to high emotionality/expressiveness. Whereas Americans are very high on this dimension, especially as far as the intensity of the subjective feeling and the expressive nonverbal response is concerned, the Japanese are very low, both in terms of

nonverbal behavior and, surprisingly, frequency of physiological symptoms.

Again, the reasons for these differences are far from obvious. As far as nonverbal expressive behavior is concerned one might argue that cultural "display rules" for emotional expression (Ekman, 1973; Wundt, 1905) are at the root of the phenomenon. Such an explanation would bring the findings in line with our stereotypes concerning the "inscrutable Oriental," hiding emotions between an impassive or politely smiling face, on the one hand, and the free expression, if not accentuation, of emotion that seems to have become popular in at least some United States youth subcultures after the sixties. Although normative pressure to control the public display of emotion may certainly play a role in explaining the phenomenon, it is clearly not sufficient.

If the control of expressive behavior on public display were the decisive factor, we would expect corresponding differences for the perceived intensity of control attempts. This is not the case, however. On the contrary, we find almost no intercultural differences for this variable, except for anger. Here, interestingly, the Americans and Japanese, who are at the opposite ends of the emotionality/expressiveness continuum, are more like each other in reporting stronger control attempts than Europeans. Furthermore, a mere *display* control explanation could not account for the stronger felt intensity in the Americans and the very low incidence of physiological symptoms in the Japanese. Although the former could be explained by a feedback amplification notion (e.g., proprioceptive somatic system feedback increasing intensity of feeling; see Gellhorn, 1967; Tomkins, 1963), the latter could not. One could argue that the low level of nonverbal and physiologic responding in the Japanese is due not to conscious display control attempts but rather to deep-seated unconscious regulation of affect that might after all have been produced by appropriate cultural socialization practices. Even if this were the case, however, it would be hard to argue that such tendencies are not related to an "emotionality" dimension.

The difficulties in accounting for the intercultural differences found, ranging from not finding an explanation at all to finding too many, almost always accompanied by an uneasy feeling about the amount of speculation involved, show one of the major drawbacks of intercultural research. We believe that in the long run only an interdisciplinary approach can help to overcome these problems. The issues raised in the discussion of the data from this study show clearly that emotion is not an exclusively psychological phenomenon. Sociologists, anthropologists, economists, historians, and political scientists, as well as physiologists and medical scientists, could contribute significantly to our understanding of the patterns of emotional experiences found in these studies. Their contribu-

tion could render more plausible a number of explanations that are little more than vague hunches at the present time. This would also help to settle a major problem of intercultural questionnaire studies—the role of differential response tendencies. It could be argued, of course, that all of the differences we find are due, for example, to the reticence of Japanese students to report the death of relatives or their physiological symptoms on a questionnaire, albeit anonymous. Unfortunately, the problem of response bias is present whenever we ask a person to report information, quite independent of the form questioning takes (Nisbett & Wilson, 1977).

As we have pointed out, subjective experience cannot be studied in any other way than by asking the person to report the information. We believe that the anonymous questionnaire method is highly preferable to personal interviewing as far as the intimate sphere of emotions is concerned. We believe that we would not have been able to elicit many of the situations reported by our subjects, which are not always very flattering to themselves, had it not been for the anonymity of the questionnaire method. We believe that the differentiation of the data pattern and the convergence of differential findings across many cultures render it difficult to interpret these results as reflections of cultural stereotypes of emotional experience.

The open-ended questionnaire format used has been very complicated and time-consuming for subjects and researchers alike. However, it was a necessary first step to collect a store of information without biasing the data through prompting or preconceived categorization. We now have sufficient data and patterns of results that are stable enough to move to a research stage where precoded questionnaires can be used where the categories are based on the empirical results of the studies so far. These precoded questionnaires, which are more economical and require much less effort and motivation from the subjects, can now be used in a large-scale intercultural study comparing a greater number of very diverse cultures as well as a greater number of different emotions. A major effort of this sort, involving researchers in more than 20 countries on all continents, is now under way (Wallbott & Scherer, 1986a; compare Chapter 2). We hope that the combined results of these questionnaire studies on subjective experience can provide a rich basis for hypothesis formation in the psychology of emotion, which may help in the design of field and laboratory studies on *objective* antecedents and correlates of different emotion states.

2 HOW UNIVERSAL AND SPECIFIC IS EMOTIONAL EXPERIENCE? EVIDENCE FROM 27 COUNTRIES ON FIVE CONTINENTS

HARALD G. WALLBOTT
University of Giessen

KLAUS R. SCHERER
University of Geneva and University of Giessen

ARE EMOTIONAL EXPERIENCES AND REACTIONS UNIVERSAL AND SPECIFIC TO DISCRETE EMOTIONS?

In 1872 Charles Darwin published his work on "The expression of the emotions in men and animals," claiming that emotional reactions, particularly facial and vocal expression, are innate and thus universal as well as specific for at least some basic, discrete emotions like joy, sadness, fear, and anger. His work, now considered as a milestone in the psychology of emotion (Ekman, 1973), gave rise to a long debate between "universalists" and proponents of the "culture specific view" of emotional expression. Whereas universalists like Tomkins (Tomkins & McCarter, 1964), Izard (1977), or Ekman (1972) argued for innate "emotional programs" (as illustrated by discrete facial expression patterns) that are universal and differentiate emotions, a number of cultural relativists such as Landis (1924), Klineberg (1938), or Birdwhistell (1970) shared the view that emotional experiences and reactions differ depending on cultural factors. Although there is increasing evidence that at least the recognition of facial expressions of emotion is universal (Ekman, 1972; Ekman & Friesen, 1982; Izard, 1977, 1980), there has been little cross-cultural research on other modalities of emotion responses.

Yet, research on emotion should consider at least the following aspects: the nature of the emotion-eliciting situation, the reactions shown by a person when confronted with the emotion-eliciting situation (in particular physiological symptoms), nonverbal reactions like facial or vocal expression, the subjective experience or feeling state of the person, and the regulation attempts used