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Abstract

While proponents of biological theories of emotion claim the existence of universal emotion and expression patterns, recent theories stress cognitive appraisal mechanisms as elicitors of emotion, thus suggesting the influence of cultural and social factors on emotional experience and emotional expression. Data from a large-scale questionnaire study with about 2400 respondents in 30 countries allowed us to test that notion in part. In this study, respondents had to describe in detail situations in which they had experienced the emotions of joy, sadness, fear, anger, disgust, shame, and guilt. The results indicate that emotional expression patterns do seem to be universal.

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while characteristics of the subjectively experienced emotion, in particular its duration and intensity, show a high variance across country samples. An attempt is made to link these differences to economic data for the different countries, specifically to the gross national product. The rather striking differences found between 'rich' and 'poor' countries are discussed in terms of the frequency of confrontation with emotion eliciting situations and the importance of such situations.

‘Let me tell you about the very rich.
They are different from you and me’ F. Scott-Fitzgerald (1896–1940.

An important topic in the psychology of emotion is whether emotional experiences and reactions result from innate biological patterns or whether such reactions and experiences are culturally determined. Charles Darwin (1872) was one of the most influential in this discussion, arguing for innate emotion 'programmes' and using an intriguing multitude of research tools now common in cross-cultural psychology, such as observations and questionnaires. Other theorists of emotion including Tomkins (1962/1963), Izard (1977) and Ekman (1984), followed his line of reasoning and succeeded in demonstrating cross-cultural equivalents of facial expression patterns for some ‘fundamental’ emotions. On the other hand, 'cultural relativists' like Birdwhistell (1970), have proposed that emotional experiences and reactions differ depending on cultural factors.

We have argued elsewhere (Wallbott and Scherer, 1985, 1986) that 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 expressions, subjective experience or feeling state of the person) and the regulation attempts used to control or manage the situation and the emotional reactions’ (Wallbott and Scherer, 1985, pp. 763–764). That is, in order to address the question of 'universality' versus 'cultural specificity' of emotion, one has to demonstrate conclusively that situations eliciting specific emotions are the same across cultures, that reactions and symptom patterns accompanying emotional experiences are universal, and that control and coping attempts used to regulate emotional experience are the same worldwide. This, of course, is a rather ambitious task, given that experimental research on emotion in the laboratory involves inducing specific emotions intensive enough to produce emotional reactions, while field observations of actually occurring emotional situations are often difficult to obtain or to measure (Wallbott and Scherer, 1986).

Such problems in gaining laboratory or field access to the phenomenon of emotion have led us to adopt questionnaires to study emotional experience. So far this approach, in which subjects report in detail on situations in which they experienced certain basic emotions like joy, anger, sadness, or fear, has been used in three major studies: The first was conducted in five European countries with about 600 subjects (Scherer, Summerfield, and Wallbott, 1983), the second study in eight European countries with about 800 subjects (Scherer, Wallbott, and Summerfield, 1986) and the third study in 30 countries worldwide with about 2400 subjects so far (for first results see Wallbott and Scherer, 1986). We will report here on some of the data of the third study.
Subjects in this study were asked to describe a situation in which they had experienced one of each of the following emotions — joy, sadness, fear, anger, disgust, shame, and guilt. Subjects had to answer 15 questions for each emotion (for details see Wallbott and Scherer, 1986) and to describe in some detail their emotional experiences (intensity, duration etc.), their evaluation of the situation, their reaction patterns (physiological, nonverbal, and verbal) and their coping attempts. The questionnaire was developed in English and after translation into each respective country's language, was back-translated to English to assure that no major changes in intended meaning had been introduced. Subjects in all countries were university students from different faculties. The sample sizes varied between 36 and 199 with an average of $N = 83$.

In Wallbott and Scherer (1986), we demonstrated that for the seven emotions studied, the data reveal differential reaction patterns and patterns of situation evaluation which are to a large degree unaffected by cultural differences. We found the average eta — the amount of variance explained by a certain variable — to be 0.27 for the factor ‘emotion’ (with a range between 0.85 and 0.03), while the eta for ‘country’ averaged across all variables was 0.12 (with a range from 0.24 to 0.05). This cross-cultural stability of data patterns was especially pronounced for physiological symptoms and nonverbal reaction patterns. There were still some pronounced differences due to countries, notably the intensity and duration of the emotions reported. Therefore, we attempted — *a posteriori* — to shed some light on the cultural differences in experiencing emotion and to identify some variables responsible for such differences.

In order to discover similarities and differences between the 30 country samples, a hierarchical cluster analysis was computed (average linkage between groups based on squared Euclidian measure). The biggest differentiator between countries proved to be the variable ‘emotional experience’ (see Wallbott and Scherer, 1986), including the recentness of the emotional experience, its intensity and duration, the amount of control, the number of symptoms, number of reactions, and attribution of responsibility either to oneself, other people, chance, or fate. In the cluster analysis, these data were entered for each of the seven emotions separately — joy, sadness, fear, anger, disgust, shame, and guilt. Data from Portugal were not used in this analysis because of missing information for the emotion ‘disgust’.

Inspection of the clusters reveals a rather striking phenomenon: Most countries similar either in respect to geographical location or language seem to cluster together! After 20 steps of the cluster analysis, the following clusters of countries emerged:

1. Australia, New Zealand, U.S.A., India; i.e. most of the ‘English language’ countries, with the exception of India (a former British colony).
2. Italy, Spain, Brazil; the ‘Latin’ countries (excluding Chile).
3. Norway, Finland, Switzerland, Poland, Israel, Hong Kong; i.e. ‘European’ countries (Israel considered to be a European country) with the exception of Hong Kong clustering here.
4. Austria, West Germany; the ‘German language’ countries.
5. Zambia, Botswana, Malawi, Nigeria, Zimbabwe, Lebanon, and France; basically the ‘African’ countries with the exception of Lebanon and France.
6. Greece, Bulgaria, Sweden, Chile, the ‘South-East European’ countries, plus Sweden and Chile.

(This pattern proved to be rather stable; when computing the data averaged across emotions, a similar pattern was found.)
Three country samples cannot be connected to any of the clusters and stand alone even up to step 25 of the analysis. These countries are Japan, China (People's Republic) and the Netherlands. While one may have expected subjects from Japan and China to differ somewhat from those of other countries, the fact that subjects from the Netherlands responded so much differently from other subjects is difficult to account for.

As we mentioned before, these cluster analyses were computed without specified a priori hypotheses. Thus, the 'interpretation' of clusters is problematic. Such clustering procedures, however, may guide the future search for relevant criteria in studying cultural differences in the experience of emotion. In general though, (with admitted exceptions such as the Netherlands and Chile), similarities between reported emotional experiences can be largely accounted for by the 'closeness' of countries' geographical location or language.

Besides this descriptive attempt to group country samples into clusters, we looked for more specific variables to explain the differences found. The search for variables was guided by inspection of the data: When looking at duration of emotional experience across emotions, for instance, subjects from Botswana, Zimbabwe, Zambia, Malawi, Lebanon, Nigeria, and Brazil reported the longest duration of emotional experience, while the shortest duration was reported by subjects from France, the Netherlands, Finland, Sweden, and Switzerland.

Similar successions of countries can be found for other variables, like the intensity of emotional experience or the recentness of such experiences. On one extreme (very intense emotions of long duration, experienced in the past) we find African countries, generally, the 'poor' countries; on the other extreme (less intense, shorter, and more recent emotional experiences reported) we find more European countries or, in general, the 'rich' countries.

In order to test the assumption that the 'poverty/richness' of countries accounts for some variance in the data, economic parameters such as the average gross national product, mean life expectancy and average growth of population for the country samples were collected from statistical yearbooks. The highest and most significant correlations between economic parameters and characteristics of the emotional experience were found for the gross national product (GNP), with similar patterns for

<table>
<thead>
<tr>
<th>Emotion characteristics</th>
<th>Joy</th>
<th>Fear</th>
<th>Emotions</th>
<th>Anger</th>
<th>Sadness</th>
<th>Disgust</th>
<th>Shame</th>
<th>Guilt</th>
</tr>
</thead>
<tbody>
<tr>
<td>Recentness</td>
<td>-0.64</td>
<td>-0.42</td>
<td>-0.47</td>
<td>-0.31</td>
<td>(-0.20)</td>
<td>(0.02)</td>
<td>(-0.22)</td>
<td></td>
</tr>
<tr>
<td>Duration</td>
<td>-0.56</td>
<td>-0.63</td>
<td>-0.37</td>
<td>-0.33</td>
<td>-0.31</td>
<td>(-0.13)</td>
<td>-0.34</td>
<td></td>
</tr>
<tr>
<td>Intensity</td>
<td>-0.36</td>
<td>(-0.10)</td>
<td>(-0.02)</td>
<td>-0.36</td>
<td>(0.12)</td>
<td>(0.06)</td>
<td>(-0.21)</td>
<td></td>
</tr>
<tr>
<td>Attribution of responsibility for event to:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Self</td>
<td>-0.33</td>
<td>0.33</td>
<td>0.30</td>
<td>0.39</td>
<td>0.45</td>
<td>0.56</td>
<td>0.42</td>
<td></td>
</tr>
<tr>
<td>Other people</td>
<td>(0.24)</td>
<td>(-0.21)</td>
<td>(-0.05)</td>
<td>-0.39</td>
<td>(-0.22)</td>
<td>-0.38</td>
<td>-0.32</td>
<td></td>
</tr>
<tr>
<td>Chance</td>
<td>(0.04)</td>
<td>0.34</td>
<td>(-0.02)</td>
<td>(0.10)</td>
<td>(0.21)</td>
<td>(-0.02)</td>
<td>(-0.03)</td>
<td></td>
</tr>
<tr>
<td>Fate</td>
<td>-0.33</td>
<td>-0.39</td>
<td>-0.30</td>
<td>(-0.25)</td>
<td>(-0.18)</td>
<td>-0.38</td>
<td>-0.42</td>
<td></td>
</tr>
</tbody>
</table>

Correlations in brackets = not significant; others: \( p < 0.05 \).
the other parameters, which in turn are highly correlated with the gross national product. Table 1 reveals the direction of these correlations.

We find mostly significant negative correlations of GNP with recentness of emotional experience, duration, and intensity. These correlations indicate that the poorer the country is, the longer lasting, the more intense, and the further in the past the emotions are. Subjects from poorer countries seem to report 'more important and more severe' emotional incidents. The correlations between the GNP and the attribution of responsibility for the emotion eliciting events reveal some other differences. People from poor countries attribute the cause of emotional experience to fate and others much more than subjects from rich countries who more often see their emotional experiences as caused by themselves.

These results are confirmed when comparing the 15 richest countries with the 15 poorest countries via t-tests. Emotional experiences in poor countries are significantly less 'recent' than emotional experiences in rich countries ($t(27) = 2.64; p = 0.013$); the emotions in poor countries are also experienced as being of significantly longer duration than in rich countries ($t(27) = 2.70; p = 0.012$). Subjects from rich countries attribute their emotional experiences much more to themselves ($t(27) = 2.90; p = 0.007$), people from poor countries significantly more often to fate ($t(27) = 2.26; p = 0.032$). Thus, characteristics of the reported feeling state and the attribution of responsibility for the event are significantly related to economic factors, specifically the GNP or 'the relative wealth' of the countries studied.

We then attempted to integrate some of the findings in a path-analytic approach, relating economic characteristics to characteristics of emotional experience (averaged across the seven emotions). This model, exemplified here for the intensity of emotional experience, states that economic characteristics, like the GNP, are associated with different attributions of the cause of emotional experience (Figure 1). In richer countries, this cause is mainly the person reporting, while in poorer countries, fate and other people more often cause emotion eliciting events. Such attributions seem to influence in turn the number of emotional reactions reported as well as the experience of the intensity of the emotion. While fate and other people as elicitors of emotional experience are accompanied by stronger emotional expression, more physiological symptoms, and greater experienced intensity, attributions to self are associated with less emotional expression, fewer physiological symptoms, and less intensity.

It has not been established whether or not the relationships found are causal. Emotional experience may depend on economic factors, which is basically the Marxist model: 'It is not the consciousness of man that determines their being, but, on the contrary, their social being determines their consciousness' (Marx, 1904, p. 11). On the other hand, it may be that cultural factors, including ways of experiencing emotion, determine economic development, or that cultural factors not identified in this study influence both emotional experience and economic development.

However, it seems at least plausible to argue that emotional experiences attributed to fate or to other people will result in stronger emotions than experiences attributed to oneself. The poorer the countries are, the more often fate and other people are seen as causes of emotional experiences, resulting in more intense, longer, and less recently reported emotional experiences. Emotions caused externally (by fate and other people) are stronger and 'more severe'.

One speculative explanation for the relationships between variables may be that in poorer nations people are confronted with more important and more severe events
mostly caused by external sources, which cannot be influenced to any degree, thus resulting in intensely experienced emotions. People from 'richer' countries, on the other hand, may be more frequently confronted with emotion arousing situations (indicated by the higher 'recentness' scores) but these seem to be events most often caused by the persons themselves — 'everyday hassles' — which are less important and thus result in less intense emotional experiences.

Of course, other distinguishing cultural factors besides the GNP may interfere. An interesting attempt in this direction has been recently reported by Gudykunst and Ting-Toomey (in press), who distinguished cultures with respect to 'individualism–collectivism', 'high–low uncertainty avoidance', 'masculinity–femininity', and 'power distance', and were able to demonstrate interesting relationships to the data reported in Scherer et al. (1986). At least, however, in our present analysis of the data from 30 countries, we have been able to show that besides 'universal' components of the emotion process — symptom/reaction patterns or general evaluation patterns — cultural factors, such as a country's wealth, have to be considered. Of course, more theory-based research is urgently needed to follow up these _a posteriori_ findings.
REFERENCES


RéSUMÉ

Alors que les partisans des théories biologiques de l'émotion postulent l'existence d'émotions et de patterns d'expression universels, d'autres théories récentes mettent l'accent sur les mécanismes d'évaluation cognitive, suggérant de ce fait une incidence des facteurs culturels et sociaux sur l'expérience et l'expression des émotions. Les données d'une vaste étude par questionnaire (2400 sujets dans 30 pays), nous ont permis de tester cette hypothèse. Dans cette étude, les sujets ont décrit en détail les situations au cours desquelles ils ont ressenti les émotions de joie, tristesse, peur, dégoût, honte et culpabilité. Les résultats montrent que les patterns d'expression émotionnelle seraient universels, alors que les caractéristiques de l'expérience subjective de l'émotion, principalement la durée et l'intensité, varieraient d'un pays à l'autre. Nous tentons de lier ces différences aux données économiques de chaque pays, notamment au produit national brut. Les différences observées entre les pays "riches" et les pays "pauvres" sont analysées en terme de fréquence et d'impact des situations inducrices d'émotions.

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