

10 Individual differences in emotional reactions

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10.1 Introduction

Though essential to our understanding of human adaptation, the question of individual differences in emotional responses still appears to be largely unresolved. In spite of the considerable range of individual ways of responding that we can observe in everyday life emotional situations, and in spite of the essential relevance of this question to clinical practice in psychology, the scientific attack on it is only recent and the available concepts still remain rough and tentative.

One of the older and perhaps most basic distinctions existing in this field is the one contrasting repressors and sensitisers. Repressors, who have attracted the attention of clinically oriented psychologists since the end of the last century, are people who consistently report low emotionality, though their behaviour and physiology in the presence of emotional stimuli generally appear otherwise. Byrne (1964) contrasted this class of people with another one which he called sensitisers. Sensitisers are people who employ mechanisms that enable them to deal more or less directly with the emotional situation. They may even exaggerate the threat potential in a situation or take special pains to expose themselves to it. Their reported symptomatology for such situations generally is a rich one. It was recently, however, that studies initiated by Weinberger, Schwartz, & Davidson (1979) and extended by Asendorpf & Scherer (1983) offered scientific grounds for this distinction between repressor and sensitiser styles of emotional responding. In Asendorpf & Scherer's (1983) study, when exposed to an emotion-arousing situation, repressors indeed exhibited a discrepancy between low self-reported emotionality and high indices of physiological and expressive changes. By contrast, sensitisers, or high-anxious subjects as they were called by the authors, showed consistently high values on all three variables. Nevertheless, our knowledge about these two contrasting styles of emotional responding remains limited. For instance, it is not known whether repressors act in a self-deceptive or in an other-deceptive manner. Would they, or would they not, report that they strove to control their emotional arousal? Also, nothing is known about the social variables which

are associated with these styles, in spite of the many stereotypes. Indeed, naive psychology easily suggests that our educational standards lead males to be more prone to adopt a repressor style in emotional situations while females tend to adopt a sensitiser style. One would also guess that people from urban settings would repress their emotional responses more than people from rural settings. Moreover, we all share particularly strong ideas about cross-cultural differences in this domain. In Europe, one readily takes it for granted that people in northern countries – and perhaps especially the British – would adopt a repressor style, while people in southern countries – and perhaps especially the Italians – would react with a sensitiser style.

A second distinction about individual ways of responding emotionally, which was also introduced a long time ago, similarly had to wait until recently to be documented by research data. In 1935, Jones used the term externaliser to describe a person who was high in overt emotional reactions and low in physiological responses and the term internaliser to describe one who had little overt expression but experienced large physiological changes. His pioneering observations of this distinction were more recently supported by data by Buck, Savin, Miller, & Caul (1972), by Buck, Miller, & Caul (1974), and by Notarius & Levenson (1979). In this last study, internalisers or natural inhibitors, as selected on the basis of their facial responsiveness in a preliminary observational situation, were revealed as less facially expressive and more physiologically reactive than were natural expressors or externalisers in an emotion-arousing situation such as that induced by the threat of electric shocks. A recent study by Notarius *et al.* (1982) confirmed this observation using female subjects in another kind of emotional situation. However, apart from some data suggesting that male subjects would be more oriented toward internalisation and female subjects more prone to externalisation (Buck *et al.*, 1972), we know practically nothing about the correlates of this second bipolar distinction. As compared to internalisers, do externalisers experience emotional situations as more immediate or more intense? Do internalisers consciously attempt to control their emotional manifestations? Are they satisfied by their way of handling the emotional situation? Apart from sex, are there other classes of social variables which correlate with the internaliser–externaliser distinction? Such questions have not yet been documented by scientific investigations.

In the present European study of emotional reactions, it was possible to investigate some of the questions which have been raised here about the correlates of the two bipolar variables under consideration.

10. 2 The assessment of individual differences in reaction tendencies

The assessment of individual differences in our study needs specific approaches. Whereas most of the analyses discussed in the other chapters compare reactions with regard to the different emotions, the individual differences were studied as general modes of experiencing emotions and reacting to them. Thus, the individual might be characterised as, for instance, reacting with *very many* or *very few* bodily symptoms independent of the specific emotion. General reaction tendencies like these, which are defined in detail later, are to be compared with regard to the influence of cultural background, socio-economic background, sex, etc. Furthermore, do people with, for instance, a strong tendency for reporting bodily symptoms experience generally more intense and longer emotions than other people, and would they behave the same way on another, similar occasion?

There are three areas for which individual response tendencies can be defined:

- modes of experiencing emotional situations;
- reaction tendencies;
- control and coping tendencies

Reaction tendencies

In order to assess individual differences in reactions, we used the notions of sensitiser–repressor, externaliser–internaliser, vocal, and body reaction type. These were assessed by combining the specific information given about non-verbal and bodily reactions.

Our procedure for defining these variables by reactions according to their frequencies in the self-report responses followed the act-frequency approach to personality (Buss & Craik, 1983). According to this approach, personality may be defined by the frequencies of the behaviours displayed by the individual in different situations. As may be seen from Figure 10.1, we define these reaction tendencies in a hierarchical way. Here externalising an emotional experience means that another person theoretically may observe the reported bodily or verbal/vocal reactions, whereas internalising means the experiencing of physiological symptoms or inner sensations. Both taken together represent sensitising tendencies, that is a tendency to react either non-verbally or physiologically. Repression by the subject, on the other hand, would mean that very few symptoms of *any* kind would have been reported.

One problem that arises from this kind of definition is that values may be dependent on the duration and, even more, on the intensity of experienced emotions. One could argue that more symptoms are reported when people

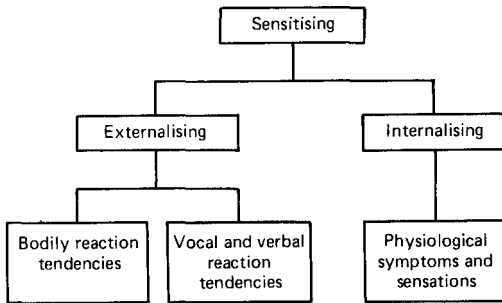


Figure 10.1 Theoretical structure of individual differences in reaction tendencies

experience the emotional situation more intensively or for longer periods. In this case, one could take into account the intensity as a moderator variable by using methods of correcting for covariation. On the other hand, it could also be the case that repressors not only report fewer symptoms but also repress the intensity of the experienced emotion. In this case, correcting by covariation would obscure a given general disposition for intensive subjective experiences and the reporting of many symptoms. Repression would then mean that at the subjective level as well as at the behavioural level there would be a lower readiness to report on experiences associated with emotions. We studied five reaction tendency variables.

Sensitising. The degree of sensitising is defined by the number of reactions across different behavioural aspects and emotions. Regardless of the kind of non-verbal or bodily reactions reported, a person who reports many symptoms and reactions will be regarded as a sensitiser in contrast to a repressor, who is supposed to name very few symptoms and reactions. Score values for sensitising ranged between 0 and 15, the median being 6. Since four emotions were combined into this score, there were on average about 1.5 named reactions for each emotion. This general score was further divided up as described now.

Internalising. Physiological reactions and bodily sensations can be seen as an internalisation of the emotional experience. Therefore, these symptoms are taken as an indicator for internalising tendencies. Score values ranged from 0 to 11, the median being 3. On average, 0.75 internalising reactions were mentioned for each emotion.

Externalising. Vocalisation and bodily reactions can both be regarded as an externalisation of the emotional experience. The two aspects were therefore

taken together. This yielded score values ranging from 0 to 11, the median being 3. On average, as for internalising, 0.75 externalising reactions were mentioned for each emotion.

It should be noted that internalising and externalising are not considered as being two poles of a continuum. They are seen rather as variables on which individuals may be located, even in some cases with high values on both of these scales. In fact, internalising and externalising, as defined here, were moderately correlated in our sample ($r = 0.33$, significant).

Bodily reaction tendencies. All non-verbal visible behaviours (gaze, facial expression, body movement, etc.) are subsumed in this category. Score values ranged from 0 to 8, the median being 2. On average 0.5 reactions of this kind were mentioned for each emotion.

Vocal reaction tendencies. Codes for vocal reactions (speech and voice) were combined. Score values ranged from 0 to 5, the median being 0.8, indicating that on average 0.2 vocal reactions were mentioned for each emotion. In contrast to the other variables, which yielded a normal distribution of values, the frequency distribution of this variable was highly skewed to the left. More than one-third of the subjects (37%) reported only one vocal reaction for all four emotions. Therefore, in contrast to the situation for the other variables, no extreme groups as described below could be set up for this variable.

Comparison of extreme groups. For the statistical analyses and in order to get concise comparisons, extreme groups for the various reaction tendencies were formed. For this, 10–17% of the subjects in the whole sample for each variable were considered to be either high or low scorers. Table 10.1 gives the frequency distribution for sensitising tendencies as an example of this procedure.

In this case, from the total sample of $N = 779$, $n = 108$ subjects (= 14%) were classified as high scorers, $n = 121$ subjects (= 16%) as low scorers, the cutting points being 2.7 and 0.9 (average number of reactions per emotion) for low and high scorers respectively. The high and low cutting point values and the number of subjects, n , for each of the reaction variables are given in Table 10.2.

As can be seen, a rigid criterion of 10% for the highest and lowest values could not be adopted because of the peculiarities of the frequency distributions. As mentioned before, for vocal/verbal reaction tendencies, no high and low cutting points could be defined because of the extremely skewed distribution and the small range of this variable.

On average, about 110 subjects (14%) are located at each pole of the scales

Table 10.1. Frequency distribution of score values for sensitising tendencies

Value	Number of subjects, n	Cumulated percentage	Classification of score
5.5	1	0.1	High
4.5	3	0.5	
4.0	2	0.8	
3.8	11	2.2	
3.5	11	3.6	
3.3	14	5.4	
3.0	26	8.7	
2.8	40	13.9	
2.5	60	21.6	
2.3	74	31.1	
2.0	72	40.3	Low
1.8	92	52.1	
1.5	105	65.6	
1.3	79	75.7	
1.0	68	84.5	
0.8	56	91.7	
0.5	37	96.4	
0.3	21	99.1	
0.0	7	100.0	

Table 10.2. High and low values for reaction tendencies. The values indicate the average number of reactions per emotion

Variable	High values			Low values		
	Cutting point value	n	%	Cutting point value	n	%
Sensitising	2.7	108	14	0.9	121	16
Externalising	1.7	93	12	0.4	136	17
Internalising	1.7	113	15	0.4	99	13
Bodily reaction	1.2	126	16	0	81	10

in Table 10.2. Thus, on average, 28% of the subjects in each sample were taken for extreme group comparisons.

10.3 Factors determining individual reaction tendencies

Cultural background

In order to give an overview of significant effects of cultural background, we have listed the χ^2 values for the effects of various cultural factors on

Table 10.3. *Effects of external variables on reaction tendencies. The values are χ^2 values obtained by comparing high and low reaction scores*

Background	Degrees of freedom	Reaction type			
		Sensitising	Internalising	Externalising	Bodily reaction
Country	7	81.9 ^{a,b}	80.6 ^{a,b}	19.3 ^{a,b}	19.5 ^{a,b}
North-south countries	1	4.3 ^d	0.5	2.0	4.9 ^d
Main place of residence	2	9.8 ^b	13.2 ^{a,b}	0.2	0.3
Social class	1	2.1	0.1	0.3	0.7
Field of study	2	9.0 ^c	4.5	4.4	2.9
Sex	1	10.6 ^{a,b}	1.5	14.0 ^{a,b}	24.8 ^{a,b}
Age	2	1.2	0.8	1.0	1.0

^a Values are those for which the corresponding effect size amounted to $d \geq 0.30$.

^b $p < 0.01$.

^c $p < 0.02$.

^d $p < 0.05$.

reaction tendencies in Table 10.3. As can be seen from these values, the most important effects stem from country and sex, followed by the place of residence and the field of study. No significant effects were observed for social class or for age.

Comparisons relative to the sensitising reaction type were the most informative ones, with significant χ^2 values for six out of the seven variables of cultural background. These data will now be considered in a more detailed manner.

Countries. There were markedly fewer reported physiological symptoms from the Spanish and Israeli subjects compared to the others. As can be seen from Figure 10.2, there was a high proportion of low scorers for these countries with regard to internalising tendencies.

The data shown in Figure 10.2 indicate the partitioning of the low and high scorers within each country. Thus, from the 34 extreme scorers in the Israeli sample, only 3 (= 9%) were high scorers, and 31 (= 91%) were low scorers for internalising tendencies. For the British, Belgian, Italian, and German samples, there was a much higher proportion of high-scoring internalising subjects (74–85%), whereas the Swiss and French samples contained a more even proportion of high and low scorers.

For externalising tendencies, the relative proportions were not so clear. Here the Italian sample, in addition to the Spanish and Israeli samples, had a high proportion of low scorers, whereas for the other countries the proportions of high and low scorers were quite even. Taking the whole

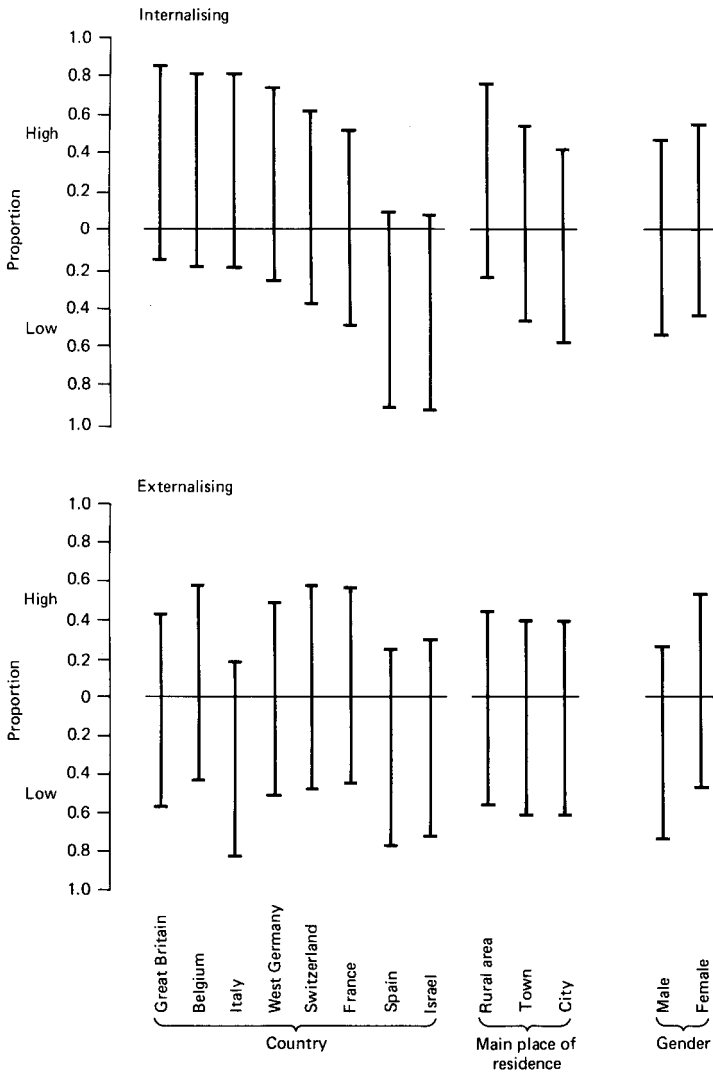


Figure 10.2 Differences in individual reaction tendencies by country, place of residence, and gender

sample into account, the analysis of variance yielded an effect of country for sensitising and internalising tendencies, but not for externalising tendencies and bodily reactions.

These differences between countries were only slightly related to the north-south division we made (see Table 10.3). Moreover, the observed relations to this respect are opposite to the currently held notions of

stereotypes. Thus, for subjects from northern countries, the proportion of high sensitisers (53%) was greater than that of subjects from southern countries (38%). The data for bodily reaction were in the same direction.

Main place of residence. The more rural the place of residence, the higher was the proportion of high sensitisers. Indeed, this proportion was 38% for people living in cities, 49% for those living in towns, and 67% for those living in a rural environment. These figures should be considered together with the ones for internalising, as it is apparent that more rural areas also contain higher proportions of high-scoring internalising individuals, that is subjects reporting more physiological symptoms. As can be seen from Figure 10.2 this proportion rose from 43% for subjects living in cities to 77% for those living in rural areas. For externalising tendencies, the proportions of high and low scores were quite even.

Sex. As might be expected, there was a much lower proportion of highly externalising male subjects than of female subjects: 53% of the female subjects were high externalisers compared to only 27% of the male ones (see Figure 10.2). This considerable sex difference was also found for purely bodily symptoms, and for general sensitising tendencies. There was also a slight similar tendency for internalising: 48% of the male sub-sample and 57% of the female sub-sample were high sensitisers. However, this effect was not very strong.

Thus, in contrast to differences due to one's country of origin and main place of residence, sex had an effect mainly on externalising tendencies and not on internalising ones (see also Chapter 7).

Field of study. Compared to social and natural science students, there was a somewhat higher proportion of high sensitisers among psychology students. Whereas for natural science students this proportion was 39% and for social science students it was 35%, 57% of psychology students had high scores. However, the effect was not very strong in this case.

As with cultural and sex influences, the influence of the field of study was in accordance with the expectation that psychology students sensitise more than other students. The effect, however, was comparatively small.

Situational and coping aspects

The intensity with which one experiences an emotion as well as the ways of coping with the situation are related to sensitising and, more specifically, internalising tendencies. As can be seen from Table 10.4, high sensitisers and high internalisers experienced the situations significantly more intensely

Table 10.4. Differences in situational and coping aspects with regard to differences in individuals.

	Sensitising		Internalising		Externalising	
	Low	High	Low	High	Low	High
Situation						
Duration	2.8	2.7	2.9	2.8	2.9	2.8
Intensity	6.7	7.3	6.5	7.5	7.1	7.3
Control/coping						
Control of Symptoms	2.8	3.3	2.7	3.3	2.8	3.3
Control of Verbalisation	2.9	3.5	3.0	3.6	3.1	3.6
Handle situations differently	0.66	0.48	0.64	0.49	0.60	0.52

than those who scored low. They also had a greater tendency to handle situations differently on similar occasions.

We also found reportable effects for control tendencies. High sensitisers and, more specifically, internalisers tend to control their symptoms and verbal reactions more than low scorers. For externalising tendencies no clear effect was observed except that high externalisers tended to handle the situation differently on similar occasions.

It is noteworthy that the duration and intensity scores correlated moderately with one another ($r = 0.32$) and control of verbal behaviour correlated with control of reactions ($r = 0.56$). Both of these correlations were highly significant, possibly indicating a general tendency to control one's reactions and also, to a lesser extent, that the duration and intensity of the emotional experience are related to each other. With regard to internalising tendencies, however, intensity had a strong effect, as mentioned before.

The immediacy aspect of the situation, which would be of interest here, could not be evaluated because it lacks differentiation. For example, 71% of the situations were reported as being the subjects' own experience; similarly, 87% of the situations were reported as being real as opposed to imagined. The low proportion of empathic experience or imagined situations did not allow comparisons with other variables.

10.4 Conclusions

Individual differences in the reporting of physiological or non-verbal vocal or non-vocal symptoms in connection with the experience of emotion can be traced to cultural and sex differences. It has been shown that females are better at decoding non-verbal cues (Hall, 1978), but this is also dependent on age and thus socialisation (Blanck *et al.*, 1981). In our study,

sex seemed to influence non-verbal bodily reactions in that there was a higher proportion of low externalisers among the males. Thus, males seemed to hold back on these reactions, at least in their reports, more than females.

Tendencies to report physiological symptoms and bodily sensations, on the other hand, that is to internalise the experience, seemed to be influenced more by the general cultural background. There were more high internalisers from rural areas than from towns or cities. Low internalisers came specifically from Israel and Spain. It might be the case that students in these countries were not as used to reporting on these kinds of symptoms. Unexpectedly, the Italian sample contained a high proportion of low externalisers. We cannot decide if this result is some evidence against a cultural stereotype of the non-verbal active, gesticulating southern people. Other explanations are also possible. People know about this stereotype and, when asked to write down these symptoms, try to put their own case against this stereotype. It is also possible that they do not attend to this kind of behaviour that much because of its general frequency, and, therefore, do not report on reaction tendencies which nevertheless might be observed by others. Still another explanation is the fact that this part of the study was conducted in northern Italy and that a southern sample would behave differently as is suggested for the decoding of non-verbal cues by Giovannini & Ricci Bitti (1981).

The trend for psychology students to report more symptoms than other students was significant but not as strong as expected. Generally, the strongest effects for internalising tendencies came from country-specific cultural differences, whereas for externalising tendencies, sex effects were stronger.

As an open question, there remains the problem of defining the various forms of reaction tendencies. Sensitising, for instance, is traditionally defined as a coping strategy with regard to anxiety. Repressors are persons who defensively avoid the experience of anxiety, whereas sensitisers are hyper-vigilant against anxiety-linked cognitions (Byrne, Barry, & Nelson, 1963). These individual differences in coping with anxiety are also to be seen in relation to social desirability. Male repressors, for instance, exhibit a discrepancy between low self-reported anxiety and high heart rate and facial display of anxiety (Asendorpf & Scherer, 1983).

In our study, the situation was quite different since emotions other than anxiety were considered. Moreover, self-reported reactions were taken as an indicator for sensitising or repressing tendencies. It has been shown in other studies that repressors tend to react more strongly to anxiety-provoking stimuli despite their lower anxiety values (Weinberger, Schwartz, & Davidson, 1979). In our study, sensitising correlated with the intensity of the experienced emotions. So, the relation between intensity and sensitising

might be spurious. On the other hand, it might be argued from averaging over the emotions that the intensity of the experienced emotion is indeed associated with more self-observed reactions. Moreover, there could even be some kind of interconnected feedback loop, whereby the perceived reactions intensify the emotional experience, as has been proposed by Tomkins (1980) for facial feedback.

Interestingly, there was a moderate correlation between internalising and externalising reaction tendencies. This might indicate that they are not totally independent of one another on the one hand and cannot be seen as contrasting poles of a continuum on the other hand.

Our approach in defining and assessing sensitisation, internalisation, and externalisation by the use of self-reported physiological, bodily, and vocal reactions is in accordance to the act-frequency approach to personality (Buss & Craik, 1983). In our study, individual differences in these variables could be traced to cultural and sex differences and also, where associated, with different coping and control strategies. Problems arising from the nature of self-reports are still open to discussion. In order to study these reactions further, one would need direct observations of the reactions.