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SELF-REPORTED FEARS OF AMERICAN, BRITISH AND DUTCH UNIVERSITY STUDENTS: A CROSS-NATIONAL COMPARATIVE STUDY

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Abstract — Studies specifically addressing self-reported fears cross-culturally have been scanty, and the few that have been conducted were seriously flawed methodologically. The present study set out to investigate this matter by comparing convenience samples of Ss from Great Britain, the Netherlands and the U.S.A. on a multi-scale robust measure of fear (the Fear Survey Schedule or FSS). Previously reported cross-national studies of neuroticism for the national groups considered here (Hofstede, 1976, 1980) found a mean score for the Netherlands which was higher than that for either Great Britain or the U.S.A., while the latter two nations had virtually identical scores. On the basis of this finding, and the empirical observation that neuroticism is meaningfully associated with phobic anxiety, it was hypothesised that at least some of the scales of the FSS would parallel the Hofstede pattern of neuroticism findings [(I) Social Fears, (II) Agoraphobic Fears, (III) Bodily Injury, Death and Illness Fears, (IV) Fears of Sexual and Aggressive Scenes, and (V) Fears of Harmless Animals]. However, the Dutch scored significantly lower than both their American and British counterparts on all measures, the most sizeable differences being the British Ss' higher scores on Fears of Sexual and Aggressive Scenes and on Agoraphobic Fears. The American and the British samples were comparable to each other in some respects (especially regarding social fears and fears of bodily injury, death and illness), while differing in other respects, in particular in the more pronounced fears of sexual and aggressive scenes in the British Ss. It was argued that these national differences may have emerged, at least in part, from national differences in higher-order conceptual (cognitive) strategies, a matter which remains to be empirically examined. Among other things, the need for nation-specific descriptive statistics and for specialised norms was emphasised.

"An anthropological reading of the literature in cross-cultural and international psychiatry reveals a strong bias of psychiatrists toward

*Reprint requests should be sent to Dr. W. A. Arrindell.

'discovering' cross-cultural similarities and 'universals' in mental disorder"

Arthur Kleinman (1987)

INTRODUCTION

Five decades ago, Hallowell (1938) argued that phobias are based on the individual's experience and his contact with the objects of fear in his environment. Hallowell (1938) also pointed out that cultural beliefs are important factors in conditioning members of a society to fear certain objects or situations; culture does not only define the objects and situations that arouse certain fears and anxieties, but also determines the degree to which responses may be regarded as abnormal.

While numerous empirical studies have investigated similarities and differences across national groups on such personality traits as neuroticism and extraversion-introversion (e.g. Eysenck and Eysenck, 1983; Butcher, 1985), and psychological states such as anxiety and depression (see, for instance, Spielberger and Diaz-Guerrero, 1976; Draguns, 1980; Marsella, 1980; Tseng and Hsu, 1980; Kleinman and Good, 1985), endeavours aimed at examining both pattern and level variation in self-reported irrational fears cross-nationally have been conspicuous by their absence. The reasons for this are not well-understood. Farley *et al.* (1978) suggested that in the 1970s the study of human fears was dominated by the therapeutic concerns of clinical and counselling psychology and psychiatry and that, beyond this focus, insufficient basic research has been conducted concerning the nature of fear in various groups identifiable by ethnic, national, socio-economic and other demarcations.

In addition to this observation, Guthrie and Lonner (1986) have recently noted a disappointing failure of cross-cultural research to influence theories of human behaviour, normal or abnormal, there being several reasons for this state of affairs. Two of these are of relevance to the present context. First, behaviourally-oriented thinkers have been insensitive to cultural differences in the reinforcement contingencies and models that confront people in different societies. Secondly, there has been a strong predilection of theorists and researchers to emphasise *inner* determinants of behaviour or dispositions and to pay scant attention to the *situational* determinants of behaviour.

In the most recent survey on the epidemiology of anxiety disorders and symptoms, Marks (1986, 1987) notes that anxiety disorders are common psychiatric problems (i.e. they are far more prevalent than used to be thought), community prevalence in most studies being, for all anxiety disorders, 2.9–8.4%, and, for particular syndromes, 1.2–3.8% for agoraphobia, 1.7% for social phobia, 4.1–7.0% for specific phobias, and 1.8–2.5% for obsessive-compulsive disorders. Marks further notes that phobic and obsessive-compulsive symptoms are even more frequent than the corresponding

disorders. Female preponderance is greatest for agoraphobia and least with social phobias and obsessive-compulsive disorders. The prevalence figures reported in Marks (1986, 1987) are based on studies that were conducted in different countries in the Americas, Europe, Asia and Africa. None of the studies had the particular aim of studying cross-cultural variations in the phenomenology of anxiety disorders and/or symptoms; therefore, not surprisingly, the *methods* used for obtaining the figures vary from study to study. Marks (1986) writes that the prevalence of anxiety disorders found across studies varies with many factors: the setting of the study (i.e. whether the sample comes from the community as a whole, primary care setting, general hospital, or psychiatric outpatients or inpatients), age and sex composition of the study's sample, and the criteria for case definition (i.e. the thresholds at which particular anxiety symptoms are taken to amount to a disorder vary widely across different diagnostic systems).

Thus, it is difficult to ascertain what part cultural, what part uncontrolled factors such as mentioned above, and what part elements emerging from an interaction between these two sets of factors play in the determination of the between-study differences in prevalence figures. Despite such uncertainty, Marks (1986) concludes his survey by pointing out that:

“The cross-cultural similarities in the prevalence of anxiety disorders as a whole across the globe are more impressive than the differences, though more detailed study may yet reveal fine-grain cross-cultural variations in the prevalence of particular anxiety syndromes” (p. 170).

That prevalence figures may depend on the national/cultural group being studied can be seen in a recent study by Chambers *et al.* (1986) when factors such as sex, age and diagnostic criteria were held constant. Chambers *et al.* (1986) compared 39 phobic patients from India with an equally large sample of similarly diagnosed age and sex matched patients from the United Kingdom. In order to do so, the authors used the outpatient and inpatient registers for 1976 through 1979 from a mental health institute in Bangalore, South India, to find the case files of all patients classified as suffering from phobias according to the International Classification of Diseases (ICD-8). The British part of the study took place at the Maudsley Hospital in London using phobic outpatients treated between 1972 and 1976. Sample matching was done randomly. It appeared that the British sample contained significantly more patients with agoraphobia and social phobia than the Indian group. Sudden death and illness phobias were more frequently observed in the Indian than in the British sample of patients. In addition, the Indian phobic patients evidenced more somatic and depressive symptoms than did the British patients. In acknowledging the limitations of their study (the retrospective hospital-based design and the relatively small sample size), Chambers *et al.* (1986) emphasised the role of the social structure of the two

countries in explaining the cross-cultural differences that were observed. They point out that social life in India is defined by a multiplicity of clearly demarcated roles of the individual in relation to his/her family and significant others (son, husband, father, grandson, neighbour, etc.) in contrast to the West, where the focus is on individuation and independence. Thus, due to the family and social structure, social pressures for the average Indian are probably less distressing than that for his or her Western counterpart. While the conclusion that can be drawn from this study is limited due to methodological problems, it might suggest that important differences seem to exist in the patterns of phobic neuroses in the Western and non-Western clinic populations. However, Chambers *et al.* (1986) confess that it remains unclear to what extent the differences they obtained were due to patterns of referral and/or help-seeking behaviour, and to what extent they pertained to differences in the patterns of the illnesses themselves.*

To clarify these questions, Chambers *et al.* (1986) propose to carry out large scale cross-cultural comparative studies of both hospital- and community-based phobic patients.

One way of bypassing or counteracting the problems raised by Chambers *et al.* (1986) is to conduct cross-national studies in which standardised methods of assessments are used in comparable non-patient populations. It is to the few studies that have been performed in the area of self-reported fears that we now turn.

CROSS-CULTURAL STUDIES OF SELF-REPORTED FEARS

The Findings

Suggestive evidence for national differences in fear levels, at least between American and Israeli samples, using a fear survey schedule comes from two studies: Goldberg *et al.* (1975b) and Farley *et al.* (1978). The study by Goldberg *et al.* (1975b) utilised the 97-item Israeli Fear Survey Inventory — specifically constructed for the Israeli situation (Goldberg *et al.*, 1975a) — for purposes of comparison with American data obtained about ten years previously by Manosevitz and Lanyon (1965), who used a different fear measure. Only 57 items appearing in both inventories were considered in the comparison. Goldberg *et al.* (1975b) computed mean fear scores across all items that

*In addition to this problem, the question of whether prevalence figures differ for the early 70's compared to the late 70's for each of the countries was not addressed in the Chambers *et al.* study. The samples differed in terms of the time period over which the data were gathered. Marks's (1986, p. 170) review suggests that there may be differences in prevalence. Furthermore, the samples differed in terms of composition. The Indian group contained both outpatients and inpatients, while the UK group comprised outpatients only. Prevalence figures may differ for outpatients and inpatients (Marks, 1986). Finally, the Indian group had more patients with higher educational attainments than the UK group. Since matching of groups did not occur on this variable, which may be related to the self-report of phobic symptoms (cf. Arrindell *et al.*, 1988a), this difference could have influenced the results.

indicated greater overall fear in both the male and female Israeli university students compared to their American counterparts. Since the comparability of the samples with respect to sex and age could not be checked — the American data were obtained from the article by Manosevitz and Lanyon (1965) — Farley *et al.* (1978) undertook an investigation into the replicability of the findings of Goldberg *et al.* (1975b) by comparing sex and age matched samples within the same study. A finding similar to that of Goldberg *et al.* (1975b) was found by Farley *et al.* (1978) who made comparisons at the item level only. It should be noted that, in the former study, the comparisons between the American and the Israeli sample on the six *a priori* categories of fears suggested by Wolpe and Lang (1964)* showed significant differences for both sexes on the “tissue damage, illness and death, and associated fears” *only*, suggesting that this category contributed dominantly to the overall intercultural difference. This difference may reflect the greater likelihood that Israelis have experienced wartime casualties among family and friends (cf. Margalit and Mauger, 1985) and the unique atmosphere created by the security situation in Israel where army service and periodic call-ups are part and parcel of everyday life, evoking fears of all kinds — particularly those of physical harm — not only in those on active service but in their immediate family and circle of friends as well (cf. Goldberg *et al.*, 1975a).

Methodological Problems Which Limit the Internal Validity of the Studies

Comparability — not only in terms of background demographic factors — is a prerequisite for valid cross-cultural comparison, and may be attained by demonstrating the *equivalence* of psychological concepts and data across national groups (Berry, 1979). That is, the local data from the cultures being compared must fall on some common baseline: there must be evidence of what Frijda and Jahoda (1966) have termed *dimensional identity* or what Eysenck and Eysenck (1983) have named *comparative dimensionality*. Thus, for observed differences between cultures to reflect corresponding differences in the psychological concepts taken to be measured by Fear Survey Schedules, the possibility that intergroup differences can appropriately be ascribed, at least partly, to ‘bias’ or ‘lack of equivalence’ of the scores should be ruled out as a plausible alternative explanation. Bijnen *et al.* (1986) define bias as an intergroup difference on an observed score variable for which there is no corresponding difference in respect to the hypothetical construct(s) or domain(s) of behaviour about which inferences are made. Or, put somewhat differently,

“If an instrument is seen as a representation of a psychological domain or trait, bias refers to score differences that are peculiar to that representation rather than characteristic of the domain or trait” (Bijnen *et al.*, 1986, p. 5).

*The categories are: “animal”, “tissue damage, illness and death, and their associations”, “other classical phobias”, “social or interpersonal stimuli”, “noises”, and “miscellaneous”.

To identify bias effects several psychometric conditions have been described that are presumed to be satisfied by unbiased score variables but that are not met by biased data (e.g. Berk, 1982; Poortinga, 1975, 1983; Malpass and Poortinga, 1986). Bijnen *et al.* (1986) have pointed out that, although the various conditions are not independent, it seems useful to distinguish two categories.

First there are conditions based on correlational techniques, including factor analysis. These pertain to patterns of relationships between variables. For example, if two variables show a lower correlation in one culture than in another, this can be taken as an indication of bias. Apparently, a somewhat different dimension of behaviour is reflected by at least one of the variables. In the opinion of Bijnen *et al.* (1986), the logic of comparison requires dimensional identity of the variables in terms of which a comparison is made. The violation of this condition is referred to as *qualitative* bias (Bijnen *et al.*, 1986, p. 6). The second kind of condition is relevant to *quantitative* aspects of metric identity. Quantitative bias in a data set exists when the hypothetical trait score is not the same for subjects with equal observed scores who belong to different groups. To illustrate this, Bijnen *et al.* (1986) offer the following example. They observe that quantitative bias would result if temperature readings on a Celsius scale were compared with readings obtained elsewhere on a Fahrenheit scale. In this case bias can — in their view — be averted by the specification of identical measurement procedures.* Bijnen *et al.* (1986) state:

“In psychology, where the subject forms part of the measurement procedure, such identity cannot be guaranteed by using formally identical instruments and administration procedures” (p. 6).

Unfortunately, neither Goldberg *et al.* (1975b) nor Farley *et al.* (1978) provided evidence of the metric identity of their data and concepts across national groups. In addition to this, the *a priori* categories of Wolpe and Lang used by Goldberg *et al.* (1975b) were not validated factorially. Thus, data with respect to the construct validity of the scales used were not available and nor were reliability figures pertaining to these scales. As to the study of Farley *et al.* (1978), the authors focussed on straightforward item-level comparisons only, which is also unfortunate since it is because of the unreliability of individual items that scales are constructed (e.g. Zuckerman, 1983). These failures seriously limit the conclusions which can be drawn. It is partly with the background of such limitations, and others previously noted, that the present study was set up to shed some light on the subject of intercultural differences in fear expression.

*Most psychometric conditions for detecting quantitative bias are found in the tradition of item bias analysis (cf. Malpass and Poortinga, 1986). In such an analysis, the items of a test are taken as separate variables that should meet certain stipulated criteria.

STUDY

Background and Aim

While comparisons across culture lines have found results pointing to the specificity of both qualitative and quantitative cross-cultural differences in different psychological states and traits, we are not aware of any cross-cultural studies on self-reported *irrational fears* ('phobic anxiety') in which a robust multi-scale measure has been utilised. This is peculiar in the light of: (1) the view that the existence of cultural differences is an obvious truism (e.g. Endler and Magnusson, 1976; Iwawaki *et al.*, 1977; Peabody, 1985), although this judgment is not shared by all cross-cultural theorists (see the General Discussion); (2) the increased interest in both empirical research comparisons and theoretical activity concerning the influence of culture on personality (e.g. Butcher, 1985); and (3) the increased adaptation of (all sorts of) measures cross-culturally for the practical purpose of providing usable clinical assessment techniques in the second culture (Butcher, 1985), and for the scientific purpose of making clinical research findings obtained in research centres in one country comparable to those obtained in others elsewhere in the world (cf. Marks and Mathews, 1979).

The purpose of the present study is to examine intercultural variations in fear expression within the self-report mode by performing a cross-national survey in which intercomparisons are made between groups of American, British and Dutch university students. Studies of this kind are of importance since they may help fulfil the goals of cross-cultural psychology, which can be stated in terms of three successive endeavours (cf. Berry, 1979), namely, the wishes to:

- (1) transport present understanding (knowledge, hypotheses, and laws) to other cultural settings, to test their applicability and generalisability;
- (2) explore new cultural systems to discover behavioural variations and differences which we have not experienced within our own cultural context; and
- (3) compare our prior understanding with our newer knowledge obtained within diverse cultures to generate more universal generalisations about human behaviour.

An important basic feature of the cross-cultural method, which is addressed in this study (see the Methods section), is the search for *comparability* between groups (in the sense pointed out by Bijnen *et al.*, 1986), one route being to carry out local (*emic*) studies from within a culture (goal number 2 — see above), and then to integrate the findings until a valid framework for comparison has been achieved (termed a *derived etic*; goal number 3); avoidance of an external, culturally inappropriate concept, test, or method (termed an *imposed etic*) is essential. As noted earlier, the problem with this approach is that to integrate *emic* studies, the local data from the cultures

being compared must fall on some common baseline: that is, there must be evidence of equivalence of data across groups (Berry, 1979; Eysenck and Eysenck, 1983; Barrett and Eysenck, 1984; Malpass and Poortinga, 1986). The reason for establishing such equivalence is that different cultural groups cut the pie of experience somewhat differently. Thus, it has been argued that while there is evidence that there are natural categories, prototypes for concepts, and 'basic objects' which fix the categorisation process, it is still true that the boundaries of categories are shaped differently in different cultural environments (cf. Triandis, 1980). What is defined as agoraphobia in one culture may not be the same in another culture. Certainly, the meaning of certain actions, attitudes or experiences canvassed in measures may change completely as one moves from one country, and one culture, to another (Butcher and Pancheri, 1976), so that the meaning of scale scores — which are readily enough obtainable — may not always be apparent, and any straightforward interpretation of results may be of doubtful psychological value (cf. e.g. Lojk *et al.*, 1979; Eysenck and Eysenck, 1983).

Studies of the kind presented here are important for yet other reasons. According to Triandis (1980), it is important to know the frequency of particular behaviour or particular incidents in different cultural populations. Studies obtaining mean fear levels for the populations of different countries are both a source of interest in themselves and also raise intriguing questions about the causes of national differences in dimensions assessing different kinds of irrational fears (cf. Lynn, 1981, p. 264). Furthermore, the availability of summaries of (standardised) descriptive statistics for fear dimensions for different cultural groups might aid in understanding cross-cultural divergence in patterns of correlations between fear components themselves, and between these components on the one hand and devices assessing aspects of normal or abnormal psychological functioning on the other hand.

Hypothesis and Justification

It is widely believed that there are marked national differences (see, for example, Peabody, 1985). According to Iwawaki *et al.* (1977), these differences usually refer to personality traits, such as extraversion or neuroticism. Iwawaki *et al.* (1977) also note that, while supported by casual observation, these beliefs have little empirical foundation, there being considerable difficulties in providing acceptable evidence (compare Peabody, 1985). We are not aware of any existing beliefs specifically addressing variations in fear levels across the national groups considered here. There are empirical data, however, from which possible differences between the national groups considered here can be inferred. While cross-national empirical data for dimensions of phobic fear are lacking, there is the important work of Hofstede (1976, 1980) which is concerned with neuroticism. Since self-reported fears

correlate substantially with state and trait neuroticism (Farley and Mealiea, 1972; Arrindell, 1980; Emmelkamp, 1982; Arrindell *et al.*, 1988a), it was deemed justifiable to use the Hofstede data as a base from which to make inferences, i.e. derive hypotheses.

Hofstede's work (1976, 1980) is considered to be, in some respects, the most ambitious work to date using the questionnaire method to examine national differences in neuroticism (cf. Lynn, 1981, pp. 266–269). Hofstede collected his data from approximately 70,000 subjects employed in a multi-national organisation in 40 different nations. He required his subjects to answer the question: "How often do you feel nervous or tense at work?" on a five-point scale (1=always, 5=never), a question which is clearly related to neuroticism–anxiety. Admittedly, as a one-question questionnaire, the instrument is a little on the short side, but this — as has been observed by Lynn (1981, p. 267) and Eysenck (1982a) — is to some extent compensated by its good face validity, its high test–retest reliability* and the large numbers of subjects from which the mean scores were derived. In addition, the samples used by Hofstede are more closely equated for socio-economic status, academic ability, and other variables than are most samples in this field (Eysenck, 1982a). It is important to point out that there is evidence of the construct (convergent and congruent) validity of Hofstede's neuroticism–anxiety measure as well. Lynn (1981, p. 272) and Eysenck (1982b) have shown that there is quite good agreement between Eysenck's neuroticism scale scores, as obtained in comparable international projects on cross-cultural differences in personality (e.g. Eysenck and Eysenck, 1983), and the Hofstede measure. Further, the latter measure has also been correlated with demographic indices for the measurement of national differences in neuroticism, a quite different approach that has been advanced by Lynn (1971; see also Lynn and Hampson, 1975). This approach consists of taking demographic phenomena such as national rates of suicide, alcoholism, accidents and so forth and treating these as manifestations of the underlying trait of neuroticism or anxiety in the population (Lynn, 1981, 1982). Lynn (1981) writes:

"The phenomena taken are well known as correlates of neuroticism or anxiety among individuals and hence it seemed a reasonable hypothesis that high prevalence rates in certain nations might reflect a large proportion of neurotic individuals and a high mean level of neuroticism for the total population" (p. 269).

The theory was first worked out and published in *Personality and National Character* (Lynn, 1971), using seven demographic manifestations of national anxiety level: rates of suicides, alcoholism and accidents, as indices of high anxiety; and rates of chronic psychosis, coronary heart disease, the *per capita*

*In the case of 32 nations, data were collected in two separate surveys in 1967–1969 and 1971–1973 and for these it was possible to estimate the question's test–retest reliability. The rank correlation was +0.94, indicating a highly reliable instrument (Lynn, 1981, p. 267).

calorie consumption and *per capita* cigarette consumption as low anxiety indices.* Of relevance here are the findings that, in spite of the very different measures used by Eysenck and Hofstede on the one hand, and the demographic data on which Lynn has relied on the other hand, there are unexpectedly high correlations between them when these measures are utilised on identical populations. Lynn (1981, p. 272) has reported a correlation of 0.75 ($P < 0.01$) between the Hofstede data and his demographic set of variables relating to neuroticism, and a correlation of 0.70 ($P < 0.01$) between his demographic data and the Eysenck neuroticism measure.

One weakness of the Hofstede (1976) data should be mentioned, namely that no evidence of data equivalence across national samples has been presented. However, since it is evident that "Hofstede's work represents a major contribution to the data on national differences in neuroticism" (Lynn, 1981, p. 267), and "(is) considered to be in general valid" (Lynn, 1981, p. 269), the results which are of relevance to the present context will be summarised here. These are set out in Table 1. In this table the figures given are the mean scores across two studies (1967-1969 and 1971-1973) for Great Britain and the Netherlands. For the United States of America the neuroticism score is based on one study only (1967-1969). A so-called *reversed stress score* which is derived from the mean neuroticism score is depicted for each national group in Table 1 as well.

Table 1. Mean Neuroticism Scores and Reversed Stress Scores for Hofstede's Stress Question for Great Britain, the Netherlands and the United States of America*

| | Mean neuroticism score (a) of 1967-1969 and 1971-1973 | Reversed stress score = $100 \times (4 - a)$ |
|--------------------------|---|---|
| Great Britain | 3.33 | 67 |
| The Netherlands | 3.23 | 77 |
| United States of America | 3.31† | 69 |

*From Lynn (1981, p. 268). Low (a) scores indicate high neuroticism.

†Figure based on one study only (1967-1969).

It will be seen from the table that the *mean neuroticism score*† for the Netherlands is higher than that for either Great Britain or the U.S.A., while the latter two nations evidence virtually identical scores. Correspondingly, the reversed stress scores of Great Britain and the U.S.A. lie close to each other, and are lower than that observed for the Netherlands. Hence, it was

*For a detailed marshalling of the evidence showing that the demographic phenomena in question are functions of anxiety or neuroticism among individuals the reader is referred to Lynn (1971) and Lynn and Hampson (1975).

†Mean scores on the question were computed from seven occupations in each of the countries (Lynn, 1981, p. 268).

hypothesised that at least some of the scores on the measures of irrational fears would parallel this pattern of neuroticism scores in that, compared to the Dutch, lower mean fear scores would be obtained for the British and the American samples, with the latter two groups being fairly comparable to each other. It should be borne in mind that some concepts of irrational fears are more strongly correlated with neuroticism than are others (cf. Arrindell *et al.*, 1988a).

METHODS

Subjects and Procedures

The American sample comprised 571 students, 245 males and 314 females, and, in addition, 12 *Ss* who failed to provide information with respect to their sex. Questionnaire data were obtained in the context of a study on the relationship of television viewing time to scores on the Fear Survey Schedule (Bridges *et al.*, 1987). A subsection ($N=460$) of the sample used here is described in the study by Bridges *et al.* (1987). The total sample comprised undergraduates from different academic departments enrolled in introductory psychology at the Pennsylvania State University, New Kensington, Pennsylvania, U.S.A. The British data used here is based on a study by Kartsounis *et al.* (1983) on the factor analytic structure of British university students' responses to the Fear Survey Schedule. These 547 students, over 95% being undergraduates, were from various academic departments of Bedford College, University of London, England. They consisted of 303 females, 195 males and 49 *Ss* who withheld their sex. The Dutch sample was made up of 416 students, 145 males, 194 females and 77 *Ss* who preferred to give no data with respect to their sex. The Dutch *Ss* were enrolled as undergraduate students at various faculties of the University of Groningen, The Netherlands. These *Ss* completed questionnaires mostly as part of larger mental health projects which were conducted with the purpose of developing and evaluating psychometrically a number of sound psychopathology measures (Arrindell *et al.*, 1984). As to age, across all samples, most students fell in the age groups of 18–19 years (mean = 20 years; median = 19 years; range 18–35 years). All participating *Ss* were volunteers, most of whom completed their questionnaire set anonymously. A subset of *Ss* was allowed to opt for complete anonymity. This entailed withholding background demographic information as well as one's name. It is important to point out that multivariate analysis of variance comparing the three groups — (1) 'completely anonymous' (no name + no demographic data); (2) 'anonymous' (no name only); and (3) 'name stated' — indicated no systematic between-group differences on the FSS subscales (Arrindell *et al.*, 1984; see also Speltz, 1976). Most *Ss* completed their questionnaire set individually; in a small number of cases, the questionnaire

set was group-administered, there also being no differences in mean scale scores between these groups. In all instances, confidentiality was emphasised; also, all measures were completed prior to the Ss' participation in any other studies or experiments. Details about these studies or experiments were worded in general terms and were revealed only after the completion of the questionnaires. Usually, a number of different multi-scale questionnaires (already implied by the use of the term 'questionnaire set') were given to the Ss. In doing so, the different schedules were presented in a random order. Finally, the American, British and Dutch data were gathered between 1980 and 1985.

The Fear Survey Schedule (FSS)

The FSS was designed to identify and quantify patients' responses to a variety of sources of maladaptive emotional reactions. Originally developed to assess change in phobic behaviour and generalised anxiety in experimental studies of systematic desensitisation, revisions and extensions of the original FSS have been designed for clinical use as well (Wolpe and Lang, 1977). The stimulus situations and objects that make up the inventory are those to which it is unadaptive for a person to have more than mild anxiety. A persistent habit of responding with considerable anxiety in such situations or to such objects is, by definition, neurotic (cf. Wolpe and Lang, 1977, p. 2).

A number of different versions of the FSS are obtainable (see Wolpe and Lang, 1977; Bamber, 1979, pp. 63-64). Bridges *et al.* (1987) used the 108-item version described by Wolpe and Lang (1977); Kartsounis *et al.* (1983) utilised an 88-item variation as described in Wolpe (1973), while Arrindell *et al.* (1984) employed a 76-item schedule as introduced by Wolpe and Lang (1964). While it may seem that we are dealing with different measures here, such is actually not the case: there is an enormous overlap between measures and the many variations of the schedules that exist have mostly been derived from one another. The three measures used here have 75 items in common, 51 of which are distributed across five robust scales*: (I) Social Fears, (II) Agoraphobic Fears, (III) Bodily Injury, Death and Illness Fears, (IV) Fears of Sexual and Aggressive Scenes, and (V) Fears of Harmless Animals. The questionnaires have similar standard instructions in which Ss are requested to indicate their degree of felt anxiety with respect to the stimulus situations or objects. This is done on five-point Likert-type scales which range from 1 ("not at all disturbed") to 5 ("very much disturbed").

The dimensions described above were originally obtained from a factor-

*Item no. 22 from the Wolpe and Lang (1964) FSS-III forms part of the Bodily Injury, Death and Illness factor but is not included in the British and American versions of the FSS. Elimination of this item from the original scale (Arrindell, 1980) does not influence the original reliability figures.

analytic study of responses of 703 non-institutionalised phobic club members (predominantly agoraphobics) conducted in the Netherlands and first described by Arrindell (1980). Subsequent studies (Arrindell *et al.*, 1984; Arrindell and van der Ende, 1985, 1986) presented evidence of the replicability of the dimensions and their invariance characteristics, demonstrating their applicability to other *S* samples (in particular, normal students, individuals from the general population, psychiatric outpatients and psychiatric inpatients). Data favouring the internal consistency of the scales and the homogeneity of the item set constituting each scale were presented for different samples in two of the cited studies.

It is on these dimensions, for which support of qualitative and quantitative identity across the present national groups has already been obtained (see 'Preliminary Analyses') that the cross-national comparisons in terms of mean scale scores were conducted. The theoretical score ranges for each of the dimensions are as follows: 13–65 (dimensions I and II), 11–55 (III), 8–40 (IV), and 6–30 (V). See Appendix I for an overview of the composition of each scale.

Statistical Analyses

The main test for group differences was made by multivariate analysis of variance or MANOVA (e.g. Tatsuoka, 1971). This is the appropriate test for a situation in which two or more groups are being compared for differences on more than one dependent variable. Relative to univariate tests, MANOVA has the important advantage of being able to detect some types of group differences which are beyond the capacities of general univariate tests and the results are reported with a single probability for the set of dependent variables, so that the interpretation of the status of the null hypothesis is relatively straightforward. Provided that the results obtained with the MANOVA and subsequent *F* tests (performed across all three groups for each variable) were statistically significant, further analyses (one-tailed tests) were conducted to examine differences between any of two groups. Actually, covariance analyses were done in all instances. In such an analysis, metric covariates or non-metric factors are inserted into the design to remove extraneous variation from the dependent variable, thereby increasing measurement precision. Regression procedures are used to remove variation in the dependent variable due to one or more covariates/factors, and a conventional analysis of variance is then performed on the corrected scores. In these analyses, based on the literature (see below), sex was introduced as a covariate. Thus, following the multivariate analysis of covariance (MANCOVA), and a subsequent overall analysis of covariance (ANCOVA) for each criterion measure, if deemed appropriate, ANCOVAs comparing two groups were carried out. This, however, would increase the risk of obtaining positive results on the basis of chance alone since several groups are being compared on a number of

variables. To counteract this risk, the Bonferroni inequality (e.g. Grove and Andreasen, 1982) was utilised. This involved choosing an overall α and dividing it by the number of tests (k) to be conducted, to result in an individual level of significance (α_i) for each test. In this study, α_{overall} was set at 0.20, accepting a large risk of type 1 error in order to identify relationships to investigate further.

Rather than using sex as a covariate, it was decided to examine its effect on the dependent variable separately and in interaction with the main test for national differences. Thus, separate effects are reported for sex, nation, and the interaction between the two.

Literature Search for Potential Covariates/Factors

It appeared from the literature (e.g. Hersen, 1973; Bamber, 1974, 1979; Tasto, 1977; Abe and Masui, 1981; Farley *et al.*, 1981; Neiger *et al.*, 1981) that sex was the only variable that had some effect on the self-report of fears in a relatively systematic manner*, with females generally reported to have higher mean overall scores than males. The second most frequently examined variable appears to be age, the results of which generally turn out to be relatively meaningless, irregular or inconsistent. Where reported age differences make some sense is for subgroups of Ss in the secondary school age range (approximately 12–18 years), or even younger. Thus, sex was deemed the only relevant variable to control for here.

RESULTS AND DISCUSSION

The samples henceforth exclude Ss of unknown sex and are thus 558 (American Ss), 498 (British Ss) and 339 (Dutch Ss).†

Preliminary Analyses

Cross-national equivalence of data

For the sake of saving space, the findings obtained in examining the issue of data equivalence across samples will be only briefly summarised here. For

*Education seems to be of some importance too, but less so than sex (see also Arrindell *et al.*, 1988a). However, this finding is obtained in adult general population and psychiatric patient samples ranging widely in age (18–70 years). Since the groups considered here are extremely homogeneous with respect to age and number of years of previous schooling, it did not make very much sense to go through the effort of obtaining data on the latter variable for the purpose of controlling for its effects on the criterion measures. For comments on the possible effects of ethnic factors see the General Discussion.

†Ss with more than 10% missing data on the FSS ($N=1$ in the American sample) were deleted from all further analyses. Other missing data were treated by substituting for each missing score the S's average item score calculated across the remaining items of the keyed scale for which scores were available.

specific figures, the interested reader is referred to Arrindell *et al.* (1984, 1988b).

For the examination of the qualitative aspects of metric identity, a technique of confirmatory factor analysis was used, to see whether the factors/dimensions that were originally derived from Dutch data could be identified in the British and American samples. This proved to be clearly the case. Further, item statistics investigating aspects of the quantitative identity of the metric scales showed that the individual items making up the five subscales were also suitable for purposes of cross-study comparison.

Sex differences in each national group

To examine whether the frequently reported differences between the sexes would emerge in the present national groups, each of the FSS scales was correlated with sex (male=1, female=2). The correlations (Pearsonian type) are given in Table 2.

As can be seen from Table 2, females scored significantly higher than males on all scales in each of the national groups. The correlations were mostly of small Effect Size (ES) (Cohen, 1977, p. 82). The largest differences between the sexes were obtained on the Fears of Harmless Animals subscale (medium ES) in each of the national groups. Thus, these associations were clearly in line with the general picture obtained to date, although there may be a few exceptions to this general pattern reported in the literature (cf. Arrindell *et al.*, 1988c). These correlations justify further the need to control for the effects of sex on the outcome of the cross-national comparisons. It should be noted that there was no overall difference in the distribution of sex across national groups ($\chi^2=2.50$, $df=2$, $P=0.29$ ns).

Table 2. Correlations Between Sex and Each of the FSS Subscales in Each National Group

| | (I) Social Fears | (II) Agoraphobic Fears | (III) Bodily Injury, Death and Illness Fears | (IV) Fears of Sexual and Aggressive Scenes | (V) Fears of Harmless Animals |
|------------------------------------|------------------------|------------------------------|--|--|--|
| American students <i>N</i> =558 | 0.16 | 0.24 | 0.24 | 0.19 | 0.46 |
| British students, <i>N</i> =498 | 0.08* | 0.18 | 0.14 | 0.15 | 0.31 |
| Dutch students, <i>N</i> =339 | 0.24 | 0.28 | 0.27 | 0.22 | 0.34 |

Note. Pearson's *r* (one-tailed); all correlations are significant at $P \leq 0.001$, except (*) for which $P < 0.05$; Male=1, Female=2.

Total fear score differences between groups

Prior to the inspection of national differences on each of the FSS subscales, a general fear score was calculated for each group. For each *S*, this involved the summation of the scores on the 51 items which together make up the five subscales (theoretical range: 51–255). The mean total scores (and *SDs*) for the American (A), British (B) and Dutch (D) pooled samples of males and females were, respectively, 99.65 (23.48), 104.55 (22.45), and 85.48 (19.98). An omnibus MANOVA with sex as a covariate revealed a significant group effect ($F=79.90$, $df=2$, $P<0.001$), with the contribution of sex being statistically significant as well ($F=119.62$, $df=1$, $P<0.001$). Subsequent ANCOVAs showed that the Dutch scored significantly lower than both the American ($F=97.30$, $df=1$, $P<0.001$) and the British group ($F=162.84$, $df=1$, $P<0.001$). In addition, the British group scored significantly higher than the American group of *Ss* ($F=10.04$, $df=1$, $P=0.001$). Sex played a meaningful part in each of the ANCOVAs: F 's respectively 101.33, 69.12, and 80.75 ($dfs=1$, $Ps<0.001$).

Obtaining a statistically significant difference is one thing; its meaningfulness, however, is another. Even small differences are likely to be statistically significant when sample size is relatively large, which might be the case in the present study. To examine this possibility, the magnitudes of the differences obtained were also inspected by using Cohen's measure, d , of Effect Size (ES) (Cohen, 1977, p. 40).^{*} In doing so, the unadjusted means and their corresponding *SDs* were taken into account.

The effect size (ES) of the difference between the Dutch and the British groups was large ($d=-0.90$), between the Dutch and the American groups, medium ($d=-0.65$) and, between the British and the American groups, small ($d=0.21$).

*Main Analyses**Sex as a covariate*

The MANCOVA for the main effect yielded a Wilks's Λ of 0.69 which, when evaluated using the F -test approximation, produced $F(10,2774)=57.65$, $P<0.0001$. Examination of the within-cells regression effect showed that when sex was partialled out a significant reduction in error in the multivariate statistical design was produced: Wilks's $\Lambda=0.85$, $F(5,1387)=49.22$, $P<0.0001$.

Subsequent omnibus (overall) ANCOVAs were statistically significant for each FSS subscale: Social Fears, $F=50.83$; Agoraphobic Fears, $F=52.77$; Bodily Injury, Death and Illness Fears, $F=42.87$; Fears of Sexual and Aggressive Scenes, $F=173.90$; and Fears of Harmless Animals, $F=32.34$ (all $Ps<0.0001$).

^{*}For purposes of interpretation, Cohen (1977, p. 40) considers a d of 0.20 *small*, one of 0.50 *medium*, and one of 0.80 *large*.

Table 3. Observed (+ SDs) and Adjusted Means for Each FSS Subscale for Each National Group (Upper Part of the Table); and Contribution of Sex as a Covariate in the ANCOVAs (Lower Part of the Table)

| Sample | American (N=558) | | British (N=498) | | Dutch (N=339) | |
|--|---------------------|--------|-------------------|---------------|------------------|---------------|
| | Observed M | (SD) | Adjusted M | Observed M | (SD) | Adjusted M |
| I Social Fears | 31.19 | (8.47) | 31.24 | 31.47 | (8.21) | 31.40 |
| II Agoraphobic Fears | 21.18 | (5.34) | 21.22 | 22.67 | (5.42) | 22.60 |
| III Bodily Injury, Death and Illness Fears | 22.30 | (7.55) | 22.36 | 23.10 | (7.42) | 23.02 |
| IV Fears of Sexual and Aggressive Scenes | 12.67 | (3.52) | 12.70 | 15.96 | (4.00) | 15.92 |
| V Fears of Harmless Animals | 12.31 | (4.68) | 12.37 | 11.35 | (4.48) | 11.25 |
| | | | | 10.09 | (3.95) | 10.12 |
| Contribution of Sex in the ANCOVAs (F-values)* | | | | | | |
| | American vs British | | American vs Dutch | | British vs Dutch | |
| I Social Fears | 16.31 | | 32.15 | | 21.26 | |
| II Agoraphobic Fears | 52.73 | | 61.09 | | 47.70 | |
| III Bodily Injury, Death and Illness Fears | 41.87 | | 57.43 | | 34.91 | |
| IV Fears of Sexual and Aggressive Scenes | 38.55 | | 37.27 | | 31.81 | |
| V Fears of Harmless Animals | 184.22 | | 186.78 | | 96.72 | |

*All F-values are statistically significant beyond $P < 0.001$.

Table 3 sets out the observed and adjusted (i.e. corrected) means for each subscale for each national sample. For each subscale, the standard deviation pertaining to the *observed* mean subscale score is also given in the table. Whether sex appeared to be a relevant source of variation in the univariate ANCOVAs is also shown in this table.

The results of univariate ANCOVAs comparing groups pair-wise are displayed in Table 4. With a total of 15 of such comparisons ($=k$) and α_{overall} set at 0.20, an $\alpha_i=0.013$ was used to judge whether any of the comparisons was statistically significant. In so doing, the following picture emerged.

One consistent finding was that the British university students scored significantly higher than their Dutch counterparts on all FSS subscales ($P_s<0.001$). Also clear-cut were the findings that the American university students scored significantly higher than the Dutch on all measures ($P_s<0.001$).

No distinctions could be made between the British and American groups in terms of self-reported fears of social situations or fears related to bodily injury, death and illness (observed $P_s>0.05$) but the British S_s scored higher on Agoraphobic Fears and on Fears of Sexual and Aggressive Scenes ($P_s<0.001$) while the American sample had a higher score on the Fear of Harmless Animals subscale ($P<0.001$).

Again, in calculating the indices of ES, the unadjusted means and their corresponding SD_s were taken into account (see Table 4 for the ES results). It will be seen from Table 4 that two out of three of the statistically significant differences observed between the American and British samples were of small ES. However, the significantly higher average of the British sample on the Fears of Sexual and Aggressive Scenes scale compared with the mean of the American sample reflected a large ES. Four out of five of the differences noted

Table 4. Results of Comparisons Between National Groups (ANCOVAs) on Each FSS Subscale, and Cohen's Indices (d) of Effect Size (ES)

| | | Between-group comparisons | | | | | |
|-----|--|---------------------------|----------|-------------------|----------|------------------|----------|
| | | American vs British | | American vs Dutch | | British vs Dutch | |
| | | <i>F</i> | <i>d</i> | <i>F</i> | <i>d</i> | <i>F</i> | <i>d</i> |
| I | Social Fears | 0.13 | | 81.79* | 0.61 | 85.65* | 0.66 |
| II | Agoraphobic Fears | 18.22* | -0.28 | 45.60* | 0.45 | 106.46* | 0.73 |
| III | Bodily Injury, Death and Illness Fears | 2.18 | | 61.76* | 0.53 | 83.14* | 0.66 |
| IV | Fears of Sexual and Aggressive Scenes | 200.23* | -0.87 | 18.02* | 0.29 | 277.25* | 1.20 |
| V | Fears of Harmless Animals | 18.73* | 0.21 | 66.59* | 0.51 | 16.46* | 0.30 |

* $P<0.001$ (one-tailed tests).

Note. N (American sample)=558; N (British sample)=498; N (Dutch sample)=339.

between the American and Dutch sample were of (almost) medium ES, with only one small ES for the Fears of Sexual and Aggressive Scenes subscale. The comparisons between the British and Dutch Ss revealed one very large ES for the Fears of Sexual and Aggressive Scenes dimension, an almost as large ES for the Agoraphobic Fears subscale, and two moderate ESs, one for Social Fears and the other for Fears of Bodily Injury, Death and Illness, while just one small ES emerged for the Fears of Harmless Animals subscale. Thus, the American and British samples were comparable to each other in some respects, except for the more pronounced self-reported fears of sexual and aggressive scenes in the British Ss. In addition, the Dutch as a whole differed in consistently reporting less fears, the most sizeable differences being from the British Ss on Fears of Sexual and Aggressive Scenes and on Agoraphobic Fears. While there is some concordance with the Hofstede data, this agreement is not a very strong one.

Sex × nation interaction

Besides the expected multivariate effects of sex (Wilks's $\Lambda=0.85$, approximate $F=49.35$, $df=5$ and 1385 , $P<0.001$) and nation (Wilks's $\Lambda=0.68$, approximate $F=57.71$, $df=10$ and 2770 , $P<0.001$), there was also a sex \times nation interaction effect (Wilks's $\Lambda=0.98$, approximate $F=2.19$, $df=10$ and 2770 , $P=0.016$). Subsequent univariate F tests related to the last multivariate effect revealed a significant effect for the Fears of Harmless Animals subscale only ($F=6.06$, $P=0.002$).^{*} To help clarify the nature of this relationship, further statistical tests were carried out (taking into account the interdependence of the findings). The descriptive statistics for each subscale for each national group *by sex* are shown in Appendix II.

The significant differences previously noted between the lower scores of the Dutch (D) sample on the one hand and the British (B) and American (A) samples on the other (with males and females pooled and the effects of sex controlled in the statistical design) may be broken down for comparisons between sexes. For the comparisons dealing with the male Ss, the ESs were small to almost medium: B vs D, 0.35; and A vs D, 0.42. For contrasts between groups of female Ss, the ESs were: B vs D, 0.27 (small); and A vs D, 0.66 (medium). However, while the British male students did not differ from the American males, the British female students had lower scores than the American females ($P<0.001$; $d=-0.37$).

Hence the finding on the FSS Harmless Animals subscale obtained in the first analysis in which sex was used as a covariate for the comparison between the American and British samples, namely a higher mean score for the former

^{*}The non-significant F -values for Social Fears, Agoraphobic Fears, Bodily Injury, Death and Illness Fears, and Fears of Sexual and Aggressive Scenes were respectively 2.39 ($P=0.09$), 0.70 ($P=0.50$), 1.45 ($P=0.24$), and 0.06 ($P=0.94$).

group, was contributed dominantly by the female groups from the respective nations differing from each other rather than by a difference between their male counterparts.

General Discussion

To evaluate the findings, four points relevant to their internal validity should be examined. These are: (1) sample representativeness with respect to relevant variables; (2) the impact of volunteering vs non-volunteering on the findings; (3) the influence of social desirability on the responses given; and (4) the possible influence of ethnic factors on the results.

Sample representativeness

In no country investigated were the student groups used here truly random samples drawn from the total student population at large. In each country, however, the data were collected in such a way as to maximise diversity, but relying on chance rather than design for the achievement of the aim of getting a properly random sample. Thus, in terms of age range, the samples can probably be considered representative of most undergraduate student populations. In addition, students were from different faculties or enrolled as students in various academic departments, although in each nation all came from one and the same university.

Universities in the Netherlands are very much comparable to each other, the only selection criterion being a secondary school diploma, and, for oversubscribed studies, admission depends on drawing lots and/or the marks in the last year of secondary school. However, such comparability is less the case in the United Kingdom, and even less so in the U.S.A. where criteria such as parental income, parental background or socio-economic status may influence admission criteria at particular universities. Thus, it remains unclear as to what extent the British and American student samples in particular are representative in terms of such demographic factors as socio-economic status. However, it should be borne in mind that one background factor considered to be of importance in the context of the self-report of irrational fears, namely sex, was controlled for (i.e. examined statistically) here and found to have a small influence on the findings obtained for the Harmless Animals subscale of the FSS only. In addition, it should be noted that there is evidence to suggest that the results yielded from using so-called convenience samples are not necessarily meaningless compared with quota samples collected by, for example, polling agencies. A study by Eysenck (1979) illustrates this point.

To study the influence that attention to sampling of the general population might have had on factor composition, reliabilities, factor intercorrelations,

norms, correlations between personality factors and socio-economic status and age, Eysenck (1979) compared data on the Eysenck Personality Questionnaire (EPQ) obtained by utilising a fortuitous (convenience) sample as his original British group for standardising the instrument (N_s : σ , 2312; φ , 3262) with the results of a new Gallup Poll quota sample (N_s : σ , 600; φ , 598). Indices of factor comparison were all above 0.98, and all other comparisons, including means and SDs , showed very similar results for the two samples.

Volunteering

Related to the problem of sample representativeness outlined above is that of using a sample of volunteers as Ss . This is an important matter since it has been argued in the area of psychiatric epidemiology that it is not improbable that the group who refuse to be questioned will include an undue proportion of people who are psychologically disturbed (e.g. Srole *et al.*, 1962). In addition, researchers using mail survey questionnaires have pointed to potential sample bias associated with non-response as a major disadvantage of the method. While a great many studies have shown responders and volunteers to score significantly higher on such variables as intelligence, educational and occupational level and social-class status than non-responders and non-volunteers (see, for surveys, Rosenthal and Rosnow, 1975, Chapter 2; and Gershen and McCreary, 1983), studies examining differences in personality or psychological functioning between such groups have failed to reveal any meaningful differences that are consistent across studies (cf. Levav and Arnon, 1976; and Gershen and McCreary, 1983) or have provided inconclusive findings in showing that while 'cases with missing data' differed systematically in terms of the variables crucial to the questions being studied — in general, they included a higher proportion who were deviant or disordered in some way — this pattern was not the same in all situations (e.g. Cox *et al.*, 1977). It appeared that co-operation or willingness to participate in a study was only indirectly related to the characteristics of the individuals about whom information was being sought (i.e. not directly associated with the criterion measures) (Cox *et al.*, 1977). Cox and co-workers (1977) note that perhaps some mental disorders are associated with a willingness to discuss or reveal personal matters whereas with others the opposite is true: "Lack of co-operation may reflect antisocial attitudes and disturbed personal relationships or it may stem from a dislike of self-disclosure or intimacy which has nothing to do with psychiatric disorder" (p. 135).

In this regard, it is important to note that, in classifying the many factors that have been brought up in the literature as being characteristic of the volunteer subject, Rosenthal and Rosnow (1975) distinguished four major categories. These were formed on the basis of the degree of confidence one can

have in the quality of the available evidence supporting the conclusion that a specific factor distinguishes between volunteering and non-volunteering Ss. The categories are: conclusions warranting (1) 'maximum', (2) 'considerable', (3) 'some', and (4) 'minimum' confidence. Of relevance to the present investigation is the observation that the conclusion, at one time accepted in the literature, that there is a positive correlation between anxiety and volunteering for standard, non-stressful tasks in students, warrants only *minimum* confidence (Rosenthal and Rosnow, 1975, p. 89). Thus, there is to date no clear-cut evidence available indicating that volunteering for participation in research of the present kind is associated with the target measures of anxiety or fearfulness considered in this study.

Socially desirable responding

Cross-national differences in defensivity and social desirability have been repeatedly reported in the literature (e.g. Eysenck and Chan, 1982; Eysenck and Eysenck, 1983; Eysenck and Opolot, 1983). Since no data were gathered with respect to social desirability for each of the national groups considered here, it could be argued that observed differences might be a function of differences across groups in the tendency of the Ss to change their responses to the questionnaire intentionally by faking good or faking bad. For instance, it could be maintained that a greater average tendency of the Dutch students — compared to that of their American and British counterparts — to deliberately fake (lie) with the intent of deceiving the test user, or to respond in terms of an ideal self-concept rather than a candid self-appraisal, could have contributed to their lower than average fear scores. Michaelis and Eysenck (1971) have found that these two attitudes do seem to increase when subjects are motivated to present themselves in a favourable light and that they result in a strong tendency to deny neurotic characteristics. In such situations of real-life motivation to fake good (e.g. applicants undergoing the strong pressure of the selection situation), Michaelis and Eysenck (1971) found that Lie scores went up, as did the correlation between the Lie score and Neuroticism, from approximately zero for the non-motivated group to between 0.5 and 0.6 (see also Furnham and Henderson, 1982). However, for two reasons, it is unlikely that social desirability could have affected the self-reports of fear obtained here. The first argument is related to the manner of gathering the data. All participants were Ss who were willing to participate (volunteer) in a study of a non-threatening nature, in which they could opt for complete anonymity (see the Methods section) and in which confidentiality was emphasised (see also Furnham and Henderson, 1982). The second argument is about the empirical finding that, among male and female college students, scores on the general scale of the Wolpe FSS were not statistically significantly correlated with measures of defensivity and social desirability,

the latter measures being themselves substantially correlated with each other in both males and females (Farley and Mealiea, 1971). However, we are not aware of any studies in which correlations have been obtained linking measures of defensivity and social desirability with conceptually pure factors of fear such as those used here.

Ethnic factors

Whether race is a relevant variable in the area of research considered here is difficult to say due to the lack of empirical information. In examining this question *in general* for psychological research, Edwards (1974) looked at such variables as socio-economic status (SES), achievement and intellectual ability, self-esteem, internal-external locus of control, social desirability and social exploration, in an empirical study of black and white adolescents from four Detroit area high schools. The findings suggested that "while race may be relevant for studies of discrimination, for rectifying social injustice, and for providing a rallying point for minority groups, race is not a relevant variable for personality research or theory" (Edwards, 1974, p. 39). Later studies, examining personality differences between blacks and whites, have either provided inconclusive results (no differences or else higher clinical scores for blacks than for whites) or, alternatively, results showing that where within one study a number of different measures have been employed, only a relatively few differences have been found, with the higher scores for blacks falling well within the normal range (cf. King *et al.*, 1977; Jones, 1978; Cross *et al.*, 1978).* In addition, studies examining black/white differences in vulnerability to stress have not yielded significant findings (cf. Neff, 1985).

In a sample of Ss considerably younger than the groups considered in this study, Nalven (1970) compared the manifest fears and worries of 101 ghetto fifth and sixth graders attending a Brooklyn, New York school in which 99% of the students were black with those of 150 Ss from predominantly white middle-class schools in a small city in south-eastern New York. The comparisons were made on 11 categories: Safety, School, Natural Phenomena, Animals, Health, Economic and Political, Personal Appearance, Social Relations, Personal Conduct, Supernatural and Unspecified. While no significant sex differences were noted for any of the categories, an overall race difference was noted with blacks scoring higher than whites. However, it appeared that "the category of Animal fears accounted for practically all of the subgroup differences in number of fears reported" (Nalven, 1970, p. 286).

*See also Lynn (1981, p. 264) who reported mean neuroticism scores for blacks and whites in the U.S.A. (based on Eysenck questionnaires) to lie very close to each other: 51 and 50 respectively. Cheung (1985) provides a number of references to studies showing that when sex, age, education, socio-economic status and other demographic variables are controlled, no race differences are yielded on the MMPI.

An unpublished study by Farley and Star (cited in Farley *et al.*, 1981) has found significantly greater extreme fears in low SES inner core blacks than in low SES inner core whites and middle SES outer core blacks and whites. Unfortunately, Farley *et al.* (1981) did not identify the age group in the study by Farley and Star.

To examine to what extent the present findings could have been biased due to ethnic differences between groups, estimates were obtained of the percentage of non-white Ss for each of the present national groups. As to the American Ss' sample, newly obtained data from the Pennsylvania State University (Arrindell *et al.*, 1988b) revealed 6% of the sample to comprise non-white Ss (4% blacks and 2% Asians and Hispanics). The British sample was estimated to contain somewhere near 7% of overseas students (Bedford College Statistics provided by the Registrar), while the figure for the Dutch sample was at most 2% (Bulletin of the Central Bureau for Statistics, 1981). It should be noted, however, that the British and Dutch figures include Ss who do not have the British or Dutch nationality respectively and also that these mainly overseas students are not necessarily non-whites. Thus, between-sample differences with respect to ethnic origin are estimated to be relatively small and are therefore not likely to explain the national differences in fear levels obtained here. In addition to these figures it was possible to pursue the issue of ethnic differences in fear levels further in the newly obtained American students' data referred to earlier (Arrindell *et al.*, 1988b) by comparing black ($N=26$) and white ($N=608$) students with each other on the FSS scales used here (MANOVA, approximate $F=3.15$, $df=5$ and 627 , $P=0.008$; contribution of sex: $F=32.96$, $df=5$ and 627 , $P<0.001$).^{*} No statistically significant differences were yielded for the FSS Social Fears, Agoraphobic Fears, Bodily Injury, Death and Illness Fears, and Fears of Sexual and Aggressive Scenes dimensions ($P_s \geq 0.15$). However, blacks scored significantly higher than whites on the Harmless Animals subscale ($M=15.19$, $SD=4.93$ vs $M=12.05$, $SD=4.88$; $F=7.85$, $P=0.005$), producing a difference of medium ES ($|d|=0.64$). Interestingly, comparison of the mean Harmless Animals score for the *total* sample of American Ss in the present study with that obtained for white students in the new study (sampling procedures being identical across studies) disclosed virtually identical scores (this study: $M=12.31$, $SD=4.68$). It was concluded that there is no clear evidence that the pattern of differences in mean fear levels obtained in this investigation has been influenced to a meaningful extent by ethnic factors.

To summarise the above conclusions, while it remains to be shown that the descriptive statistics presented here for each national group are representative of the populations of undergraduate students at large from the respective

^{*}The Ns for Asians ($N=10$) and Hispanics ($N=2$) were too small for meaningful comparisons.

countries, the data are not likely to have been appreciably affected by the influences of social desirability or ethnic origin.

Implications of the Study

Some 25 years have elapsed since the first formal reference to an FSS in a report by Lang and Lazovik in 1963 (cf. Hersen, 1973, p. 242). Despite this relatively long lapse, the many reliability, validity and normative studies that have been performed on FSSs (see, for surveys, Hersen, 1973; Tasto, 1977; Wade, 1978; Granell de Aldaz, 1982; Arrindell *et al.*, 1984) have not, in our view, provided a substantial contribution to the study of self-reported fears because they have focussed on either the characteristics of individual items or of general (total) fear scores rather than on factorially invariant/constant or robust concepts of fearfulness. Not one of the available studies (e.g. Manosevitz and Lanyon, 1965; Bernstein and Allen, 1969; Rothstein and Boblitt, 1970; Adams and Rothstein, 1971; Hersen, 1971; Gulas *et al.*, 1975; Wolpe and Lang, 1977; Fischer and Turner, 1978; Spinks, 1980; Kaloupek *et al.*, 1981; Saigh, 1982; Ollendick *et al.*, 1985) conducted in the past 25 years has produced normative data for *robust* concepts of fearfulness, most of the available data having been obtained from American student samples on general measures of fear — the validity of such overall assessments having been questioned on psychometric grounds (Arrindell *et al.*, 1984; Arrindell and van der Ende, 1986).

The present findings, however, indicate that while there are some similarities between the national groups considered here, the differences can be quite substantial. Thus, while fear norms obtained for American students are in some respects comparable to those for British students, in most respects neither the American nor the British student norms would be applicable to the Dutch student population. Of course, that psychopathology norms may differ from one cultural or national group to another is not an impressive or even shocking finding in the light of the several hundreds of studies that have been conducted showing differences (and similarities) between many different national/cultural groups in terms of personality, symptomatology, and social behaviour [see, for example, such journals as *Journal of Cross-Cultural Psychology* and *International Journal of Psychology*; and *Volume 6* of the *Handbook of Cross-Cultural Psychology* edited by Triandis and Draguns (1980)]: what is noteworthy is that almost three decades of research with FSSs have not provided any studies emphasising the need for obtaining culture- or nation-specific normative data and the consequent limited utility of normative data primarily derived from administrations of the surveys to American college or university students in other national/cultural contexts.

American students, as a group, were comparable in terms of self-reported fearfulness to their British equivalents in certain respects (social fears and

fears of bodily injury, death and illness), and like the latter, reported *greater* fearfulness on *all* measures when contrasted with their Dutch counterparts. However, a sizeable difference emerged between the American and British groups in terms of their self-reported fears for sexual and aggressive scenes, with the latter group scoring higher than the former group. In addition, a small difference was found between the American and the British group on the Agoraphobia subscale, the British having a higher mean score. By contrast, on the Harmless Animals subscale, the Americans scored significantly higher than the British Ss (small difference). The higher mean fear scores for the American and British S groups, of course, do not necessarily directly point to more phobias of *clinical severity* in these S groups than in the group of Dutch university students: a modicum of anxiety (obsessionality and fearfulness) may be an advantage in many walks of life (cf. Scott *et al.*, 1982, p. 133). Neither would the cross-national findings obtained here with students necessarily produce a similar patterning across nations if either Ss from the general population or psychiatric patients (e.g. phobic Ss) had been considered. In addition, the differences observed need not directly parallel the incidence rates of anxiety disorders — phobic illnesses in particular — in the three countries. In this context, it is interesting to note, however, that, in their study on regional differences in obsessionality and obsessional neurosis, Scott *et al.* (1982) found the pattern of differences in responses of non-psychiatric samples of Scottish, English and Irish Ss to the Leyton Obsessional Inventory to parallel the incidence of obsessional neurosis in the three countries. Thus, while the responses of the Scots and the English did not differ, both of these groups were significantly less obsessional than the Irish Ss, who were particularly likely to regard cleanliness and tidiness as virtues in themselves. In line with these observations, the incidence of hospital admission for obsessional neurosis (controlling for the fact that admission to a psychiatric hospital is more common in Eire than in Britain*) was 2.8 times greater in Eire than in England, and 3.3 greater than in Scotland.

It was not the intention of the present authors to define or determine cases of agoraphobics, social phobics, simple phobics, or a combination of any of these in each of the national groups. In fact, only one or two studies have provided cut-off scores for determining agoraphobic avoidance behaviour of clinical severity with an FSS: for Arrindell and Zwaan's (1982) AZU Fear Questionnaire (cf. Garssen *et al.*, 1983) and for the Marks and Mathews (1979) Fear Questionnaire (see Mavissakalian, 1986; Arrindell *et al.*, 1988a). In any case, the descriptive statistics presented here do point to the need for

*Obsessional neurosis accounted for 0.29% and 0.42% of all psychiatric admissions in Scotland and England respectively, but 0.73% of admissions in Eire. When the figures were corrected by converting them to population rates, the disparities (as shown in the text) were even greater (Scott *et al.*, 1982).

providing special norms for each national group separately, taking into account the standard error of measurement for each FSS subscale. These norms should perhaps also be presented for those subscales on which only small differences were noted, since it has been shown that even when mean differences between groups are small, differences in the proportions of Ss from the respective groups occurring at the extremes of the distribution — or even the percentages above the median — may be quite substantial, and thus have some practical significance (e.g. Rosenthal and Rubin, 1982; Rosenthal, 1987).

An additional finding of more than mere incidental interest concerns the questionable use of general fear scores. For an illustration, consider for a moment the findings depicted in Table 4, in particular, those obtained in comparing the American students with their British counterparts. The use of an FSS total raw score in comparing the two groups in this study, while yielding a statistically significant finding of *small* effect size pointing to a *higher* mean 'overall' score for the British, clearly masks the more realistic picture obtained on the empirically distinct measures, namely: (1) a *lower* mean score for the British on the Fears of Harmless Animals subscale (*rather than higher* as suggested by the total score difference); (2) mean scores on Social Fears and Bodily Injury, Death and Illness Fears that are clearly *not significantly higher* for the British students; and (3) that the (direction of the) overall total score difference is predominantly caused by the Fears of Sexual and Aggressive Scenes dimension (*large* effect size). Thus, the use of an overall measure of fear alone would have produced a misleading finding for the comparison involving the American and British Ss both in terms of statistical significance and of psychological meaningfulness. One of several arguments that were given by Arrindell *et al.* (1984) and Arrindell and van der Ende (1986) in favour of discarding completely the use of general measures of fear was that the specific factorially derived dimensions of fear are, generally, only poorly to moderately correlated with each other in a number of different psychiatric and non-psychiatric groups. Thus, the behaviour of one dimension need not necessarily follow that of another dimension. This should explain why there are actually three patterns of differences on the dimensions between the American and British groups (i.e. $d=0$, d with a positive sign, and d with negative sign). A similar problem was raised a decade ago by Tasto (1977, p. 156) in the context of using factors and total scores when investigating the outcome of therapeutic procedures. For example, Tasto (1977) argued that, in using a total raw score on the FSS as an index of change resulting from therapeutic procedures designed to alleviate social anxiety, it may be that changes implied by many items are simply not susceptible to such treatment procedures. Tasto warned that if it turned out that there was a specific type of social anxiety factor that changed as a result of treatment whereas other factors that were empirically independent did not change, the

use of a total raw score would be highly questionable since it is quite possible that any total score would be disproportionately influenced by a totally irrelevant dimension. In fact, such a use might serve only to mask the real effects of treatment. This problem continues to exist and is particularly distressing for the conventional FSSs that do not distinguish between empirically sound categories of fear (e.g. Geer, 1965; Wolpe and Lang, 1977). Neither does it appear to have been resolved for the more recent Fear Questionnaire (Marks and Mathews, 1979), which was specifically designed for use with clinical populations and which does make a distinction between replicable and even cross-nationally invariant dimensions of fear (Arrindell *et al.*, 1984). Marks and Mathews (1979) proposed to use a Total Phobia score which is the sum of scores on 15 items. They note that, *if desired*, three phobia subscores could also be derived, each from the sum of five items. Three subscores are available, Agoraphobia, Blood-Injury Phobia and Social Phobia.

In pursuing further this clearly important issue of factor scores vs total score, Briggs and Cheek (1986) have, more recently, shown that when it can be demonstrated that the items of a questionnaire measure can be grouped together into several distinct factors, the total scale can appear relatively *uncorrelated* with external measures, while the subscales (derived from the factors) can correlate quite meaningfully with the same external variables. Thus, after having established that the Self-Monitoring Scale (SMS; e.g. Snyder, 1974) is actually made up of three relatively independent components, namely, Acting, Extraversion and Other-directedness, Briggs and Cheek demonstrated that the correlations of these subscales, including the SMS general scale, showed an apparently inconsequential and misleading pattern of correlations between the *total* scale and the external measures insofar as they concealed contradictory and often rather substantial relationships between the *subcomponents* of self-monitoring and these same personality variables. In considering the size and pattern of correlations for the Extraversion and Other-directedness subscales, the authors noted that both showed moderate to large correlations with the personality variables but often the correlations were in *opposite* directions. For instance, Extraversion was inversely related to measures of poor adjustment and positively associated to measures of social competence and self-confidence, whereas Other-directedness was positively related to the same measures of poor adjustment, inversely related to the same measures of self-esteem, and generally unrelated to the same measures of extraversion and social competence (although the signs were again mostly negative). The correlations between the total score and the same external measures were either statistically non-significant or far smaller in magnitude. (For example, the correlation between Extraversion and Social Anxiety was -0.48 , whereas Other-directedness correlated 0.20 with Social Anxiety, the association between the latter measure and the SMS

Total score being non-significant, with an $N=221$). Thus, in determining the magnitude of the correlation between the total scale and other measures, "other-directedness and extraversion worked at cross-purposes" (Briggs and Cheek, 1986, p. 123). On the basis of these observations, Briggs and Cheek (1986, p. 123) concluded that the SMS is "a house divided unto itself". Of course, there were also instances in which both the SMS subscales and the total scale all correlated similarly with an external measure (p. 124).

To summarise this last matter, the point that is being made here is that the use of a total fear measure *alone* may yield, at best, incomplete, or, at worst, misleading information, since it tends to gloss over important distinctions — and that one should be mindful of the components (including irrelevant unscaled items) of which it is composed (Briggs and Cheek, 1986, p. 115). A lack of consideration for this matter may seriously invalidate findings obtained from comparative, correlational or descriptive studies.

The Difficulty of Explaining National Differences

While it is relatively easy to demonstrate differences that are of psycho(patho)logical interest in a bicultural or multicultural comparison, attempts to discover those attributes of the cultures responsible for the differences is an increasingly difficult and demanding task. The views that are advanced for explaining differences (or similarities) are generally largely speculative. Many different cultural dimensions could be responsible for the contrasts obtained in behavioural manifestations. This difficulty of uncovering the cultural factors that might explain observed findings has been put into words by Draguns (1980) as follows:

"Not surprisingly, the discussion sections of most of the research reports in question are more dependent upon the personal and artistic sensitivity of their authors to the shades and nuances of the cultures involved in the comparisons than upon an empirical and objective assessment of cultural characteristics" (p. 118).

Poortinga (1982) has put this as follows: since cultures may differ from each other in many respects, in principle it follows that numerous possible interpretations for any observed differences in behaviour can be advanced. Poortinga further notes that although all available explanations are not equally probable, it is still possible that one of the many remaining alternative explanations should be preferred above the one which, in a particular case, has been advanced by the researcher.* Indeed, if one thinks of culture as composed of numerous separable (albeit often correlated) contextual factors (cf. Munroe and Munroe, 1980), including subsistence patterns, social and political institutions, languages, rules governing interpersonal relationships, divisions of labour by sex, age, or ethnicity, population density, dwelling styles, and more . . . "in effect, the independent variables of cross-cultural

*Translated from Dutch by the first author.

psychology" (Segall, 1986, p. 526), it becomes quite difficult to point to any one factor that is likely to explain any similarities or differences between national/cultural groups. In fact, Segall (1986), among others, has argued that since explaining differences in behaviour across cultures (the dependent variable) requires a search for the relevant independent variables, culture unpackaged, so to speak, the general concept of culture becomes superfluous. However, the theoretical discussions on the definition of the culture concept have not contributed any adequate result. In actual fact, the search for such a definition has been described as fruitless (cf. Segall, 1986, p. 527). In any case, Segall (1986) notes that culture *per se* is not a variable; it is nothing more than a set of independent variables; and, further, that hardly any contemporary research reports explain a behaviour as a product of 'culture' (p. 527).

In the present study, national differences in fear levels were predicted from national differences in personality (Neuroticism). Lynn (1981, 1982) has noted that the most obvious line of explanation for the *latter* is that there are differences in stress in different countries and that these are a causal factor. Lynn (1981) points out:

"Among individuals stress is an important determinant of neuroticism and anxiety, and the most straightforward approach would therefore seem to be that this is also an important determinant of the level of neuroticism among the populations of different nations" (p. 273).

Lynn (1981) further writes that the relevant stresses for national differences in neuroticism may be of several kinds. In the first place, there are stresses arising from political, social and economic instability such as are likely to occur with revolutions, *coups d'état*, rapid economic change involving the dislocation of traditional ways of living, and hyperinflation. Secondly, there is the stress of (threat of) war, military defeat and occupation. And thirdly, it is possible that some climates may be more stressful than others. Corresponding to these factors are those surveyed by Veenhoven (1984, Chapter 6) as possibly related to happiness: 'economic prosperity', 'economic security', 'economic equality' (i.e. the distribution of wealth in the community), 'political freedom', and 'political democracy'. Furthermore, Hofstede (1983, 1987) and The Chinese Culture Connection (1987) have proposed a number of ecological value factors such as masculinity–femininity* (at the national level) that might

*Hofstede (1983) defines masculinity–femininity as standing for a preference for achievement, heroism, assertiveness, and material success (masculinity pole), as opposed to a preference for relationships, modesty, caring for the weak, and the quality of life (femininity pole). As well as masculinity–femininity, Hofstede (1983) distinguishes power distance, uncertainty avoidance, and individualism. Power distance refers to the extent to which the members of a society accept that power in institutions and organisations is distributed unequally. Uncertainty avoidance concerns the degree to which the members of a society feel uncomfortable with uncertainty and ambiguity, leading them to support beliefs promising certainty and to maintain institutions protecting conformity. Individualism stands for a preference for a loosely knit social framework in which individuals are supposed to take care of themselves and their immediate families only, as opposed to collectivism, which stands for a preference for a tightly knit social framework in which individuals can expect their relatives, clan, or other in-group to look after them, in exchange for unquestioning loyalty.

explain national differences in stress and well-being. In addition to these environmental, socio-economic and interpersonal influences, there are also unalterable or constitutional factors that can lead people from different national groups to have different attitudes and behaviour towards other people and hence to develop separate views of what constitutes a threatening event, object, situation or experience. Eysenck (1977), for example, has written that blood group polymorphisms of the ABO system might form a basis for the production of national differences in introversion and neuroticism (see also Eysenck, 1982a). Thus, explanations for national differences in personality and fear may be considered under the three broad categories of the factors referred to above: individual, social-interpersonal and uncontrollable environmental effects. Of course, possible interactions among these categories should also be taken into account.

What is evident from this survey of potential explanatory factors is that in the light of the views of Poortinga (1982) and Segall (1986), mentioned above, it is extremely difficult, if not impossible, to point to any (combination of) factor(s) that could underlie the pattern of findings in any reported fears presented here.

It is tempting, however, to draw attention to the possible role of cognitive factors in explaining the findings obtained here, by referring to recent work by Beck (e.g. 1982) and others (e.g. Ingram *et al.*, 1987; Larsen *et al.*, 1987) who have looked at the phenomena of anxiety and depression from the standpoint of the way the individual interprets or misinterprets his/her internal and external experiences. Cognitive approaches to emotional disorder posit that specific cognitive factors are critically linked to the aetiology, course, or treatment of psychological dysfunction. Beck's cognitive model of anxiety (e.g. 1982) assigns a central position to cognition, which triggers separate but related reactions: the subjective feeling of anxiety, the autonomic reactions, and the behavioural inclinations. Empirical studies of individual differences in the characteristic intensity of affective responses to the same emotion-evoking event and of the processes whereby individuals come to experience strong or mild emotional responses when exposed to the same affect-provoking stimuli have shown cognitive operations that involve high personalising (an operation whereby the *S* interprets events in a self-referential manner, with affectively reactive individuals tending to overestimate the degree to which events are related to them and to be excessively absorbed in the personal meanings of particular happenings) and over-generalising (or the construing of a single event as representative of the general state of affairs — i.e. getting things out of proportion) to be typical of *Ss* high on an affect-intensity dimension (Larsen *et al.*, 1987). Since this finding, including that of others (cf. Ingram *et al.*, 1987), indicates that cognition may very well play an important part in negative emotional states (including anxiety), it raises the intriguing hypothesis that differences at the *national* level

in *higher-order conceptual strategies* might aid in understanding the basis of the differences in self-reported fear levels found in this study. In examining this matter, a broad theoretical conceptualisation of cognition as it relates to affect may be needed (see Ingram *et al.*, 1987, for such a conceptualisation). The main implication of this hypothesis is that perceived threats in a country are linked with the cognitive sets that people in that country entertain.

Returning, then, to the explanation of the results of this study, it may be postulated, for example, that, since the American and British cultures are more socially demanding with respect to interpersonal competence (achievement in all areas of life, including sexual relationships and assertive responding in social exchanges), the perceived threats and perceived uncontrollabilities associated with such demands would be likely to result in a greater irrationality, which may express itself in part in a greater incidence of fears related to sexual and aggressive scenes. Thus, this hypothesis postulates that in British and American students sex and aggression are more threatening because they are more strongly identified (cognitively linked) with the need for achievement, and hence the fear of failure, than would be the case in Dutch students.

Concluding Points

Differences between the national groups considered here were more compelling than similarities. The comparisons mostly reflected medium to large effect sizes ($d \geq \frac{1}{2} SD$) and pointed to the need for culture specific norms for the FSS. It is peculiar that practically three decades of research with FSSs have almost exclusively — Gulas *et al.* (1975) and Arrindell (1980) being exceptions — provided norms either for individual items only or for total scale scores. While now forthcoming (Arrindell *et al.*, 1988a), previously no descriptive statistics and/or *specialised* norms (cf. Cronbach, 1970, p. 105, 1984, Chapter 4) have been available to clinicians and researchers for *invariant* dimensions of irrational fears. A planned replication of the present study will present specialised norms for the national groups considered here.

Different norms for different countries would imply that cut-off scores for selecting potential cases suffering from a clinically significant disorder obtained in one country cannot be automatically transferred to another. Such criteria have been provided for identifying potential agoraphobic cases by means of the Marks and Mathews (1979) Fear Questionnaire in Britain (Cobb *et al.*, 1984; compare Winter and Gournay, 1987), the Netherlands (Arrindell and Emmelkamp, 1985), and in the U.S.A. (Mavissakalian, 1986). In addition, different sorts of FSS validity data obtained with *Ss* in one country need not necessarily apply to the same type of *Ss* in other countries. Hence the need to perform validity studies with the adapted version of a measure in the second country. Meaningfully higher or smaller associations found across nations

may well be the result of national differences in base lines for reporting states of fearfulness.

The findings obtained in this study were in partial agreement with the Hofstede data. The reason for this may lie in an imperfection ascribed by Lynn (1981, 1982) to the Hofstede methodology, namely the lack of published evidence to support dimensional equivalence of the measuring instrument across national groups. The planned replication of the present study which will include both the FSS and the Neuroticism scale of the EPQ will enable us to (1) empirically examine the parallel between irrational fears and trait-neuroticism across nations, and (2) be more certain on the validity of the figures presented here.

Not only is a replication of this study badly needed, but its repetition with general population and psychiatric patient samples also is highly desirable.

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APPENDICES

Appendix I. Survey of the Items that Make up Each of the FSS Subscales (cf. Arrindell, 1980)

| Social Fears | |
|---|---|
| 7 | Speaking in public |
| 12 | Being teased |
| 16 | Failure |
| 17 | Entering a room where other people are already seated |
| 23 | Strangers |
| 29 | People in authority |
| 41 | Being watched working |
| 51 | Being criticized |
| 63 | Feeling rejected by others |
| 65 | Feeling disapproved of |
| 68 | Being ignored |
| 75 | Making mistakes |
| 76 | Looking foolish |
| Agoraphobic Fears | |
| 3 | Being alone |
| 4 | Being in a strange place |
| 8 | Crossing streets |
| 10 | Falling |
| 18 | High places on land |
| 25 | Journeys by train |
| 26 | Journeys by bus |
| 27 | Journeys by car |
| 34 | Crowds |
| 35 | Large open spaces |
| 53 | Being in an elevator |
| 60 | Enclosed places |
| 62 | Aeroplanes |
| Fears of Bodily Injury, Death and Illness | |
| 2 | Open wounds |
| 6 | Dead people |
| 19 | People with deformities |
| 22* | Receiving injections |
| 31 | Seeing other people injected |
| 49 | Sick people |
| 54 | Witnessing surgical operations |
| 57 | Human blood |
| 58 | Animal blood |
| 64 | Medical odours |
| 67 | Cemeteries |
| 74 | Doctors |

| Fears of Sexual and Aggressive Scenes | |
|---------------------------------------|-----------------------------|
| 37 | One person bullying another |
| 38 | Tough looking people |
| 44 | Dirt |
| 46 | Sight of fighting |
| 47 | Ugly people |
| 52 | Strange shapes |
| 71 | Nude men |
| 72 | Nude women |
| Fears of Harmless Animals | |
| 20 | Worms |
| 24 | Bats |
| 30 | Flying insects |
| 45 | Crawling insects |
| 56 | Mice |
| 66 | Harmless snakes |

*Not used in the present study.

Note. The item numbers correspond with those of the Wolpe and Lang (1964) third version of the FSS.

Appendix II. Means, SDs and Empirical Ranges for Scores on Each FSS Subscale, by Sex, for the American, British and Dutch Student Samples

| | | Samples | | | | | | |
|-----|--|-----------|----------|---------|---------|---------|-------|---------|
| | | <i>N</i> | American | | British | | Dutch | |
| | | | Males | Females | Males | Females | Males | Females |
| I | Social Fears | <i>N</i> | 244 | 314 | 195 | 303 | 145 | 194 |
| | | <i>M</i> | 29.67 | 32.37 | 30.64 | 32.01 | 23.94 | 27.83 |
| | | <i>SD</i> | 7.18 | 9.19 | 7.95 | 8.33 | 7.50 | 7.81 |
| | | range | 14-51 | 14-63 | 13-55 | 13-60 | 13-42 | 14-52 |
| II | Agoraphobic Fears | <i>M</i> | 19.73 | 22.31 | 21.44 | 23.46 | 17.23 | 20.07 |
| | | <i>SD</i> | 4.76 | 5.51 | 5.29 | 5.36 | 4.09 | 5.28 |
| | | range | 13-45 | 13-48 | 13-41 | 13-45 | 13-34 | 13-38 |
| III | Bodily Injury, Death and Illness Fears | <i>M</i> | 20.28 | 23.88 | 21.79 | 23.95 | 16.70 | 20.09 |
| | | <i>SD</i> | 6.34 | 8.03 | 7.33 | 7.36 | 4.90 | 6.54 |
| | | range | 11-47 | 11-51 | 11-51 | 11-46 | 11-34 | 11-40 |
| IV | Fears of Sexual and Aggressive Scenes | <i>M</i> | 11.91 | 13.26 | 15.23 | 16.43 | 10.97 | 12.31 |
| | | <i>SD</i> | 3.28 | 3.58 | 4.22 | 3.78 | 2.88 | 2.90 |
| | | range | 8-26 | 8-28 | 8-29 | 9-28 | 8-20 | 8-22 |
| V | Fears of Harmless Animals | <i>M</i> | 9.87 | 14.21 | 9.63 | 12.45 | 8.55 | 11.24 |
| | | <i>SD</i> | 3.24 | 4.76 | 3.33 | 4.78 | 2.90 | 4.24 |
| | | range | 6-20 | 6-30 | 6-22 | 6-30 | 6-22 | 6-28 |